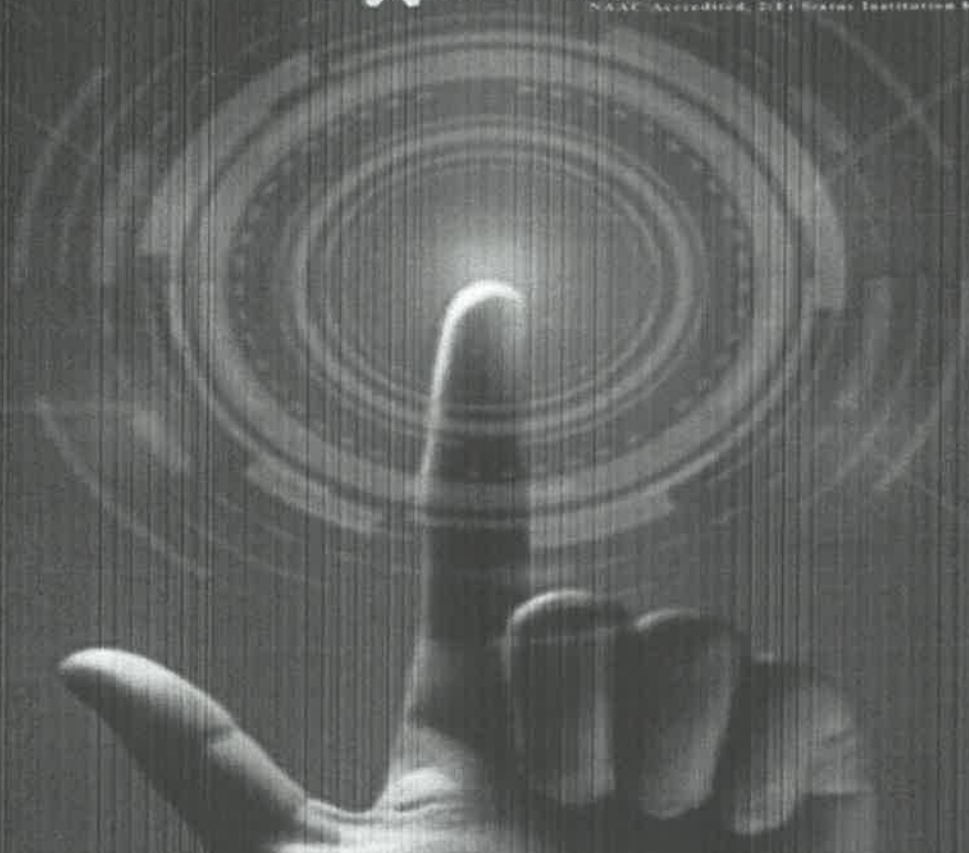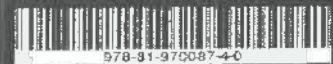**Indra Ganesan**
COLLEGE OF ENGINEERING
Madurai Main Road (NH-45B), Manikandam, Tiruchirappalli - 620 012
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai
NAAC Accredited, 2(f) Status Institution by UGC

INTERNATIONAL CONFERENCE ON

RECENT TRENDS IN ADVANCEMENTS OF ENGINEERING

15-02-2019

ISBN-978-81-970087-4-0

INDRA GANESAN COLLEGE OF ENGINEERING

Madurai Main Road(NH-45B)Manikandam,Tiruchirapalli-620012

INTERNATIONAL CONFERENCE ON
RECENT TRENDS IN ADVANCEMENT OF ENGINEERING

(ICORAOE-2019)

15-02-2019

CONFERENCE PROCEEDINGS

ACADEMIC YEAR 2018-2019

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620...

ABOUT US

Indra Ganesan College of Engineering established in the year 2008, it is affiliated to Anna University, IGCE (Trichy) Tamil Nadu, India was established by Indra Ganesan education trust, to provide quality education to the young community with the motto "To evolve as a centre of excellence in Engineering, Technology and Management with distinctive research capabilities and to transform the students into knowledgeable, skilled professionals with high ethical values to cater the needs of the society."

This institute is located in a campus spreading over 100 acres, about 10 kms from Trichy city the institute has a very picturesque and serene atmosphere. IGCE offers 6 under Graduate and 1 post graduate Engineering courses and management courses.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

PREFACE

The "International Conference on Recent Trends in Advancements of Engineering" is being organized by IGCE, Trichy, Tamil Nadu dated 15/02/2019.

IGCE has a sprawling student friendly campus with modern infrastructure and facilities which complements the society and scrutiny of the major city of Trichy.

The International Conference on Recent Trends in Advancements of Engineering, was a notable event which brings academic, researchers, Engineers, industry experts and students together.

The purpose of the conference is to discuss applications and developments in the field of Engineering and Technology which may can gives international values. Through proper scrutiny and prier reviewer quality papers were recommended by the conference committee. The conferences apply focuses on the tools and techniques for the development on current technology.

We are indebted to the efforts of all the reviewers who undoubtedly have raised the quality of the proceedings. We are earnestly thankful to all the authors who have contributed their research works to the conference. We thank our management for their support and encouragement. We thank our principal for his guidance. We are also thankful for the cooperative advice from our advisory chairs and co-chairs. We thank all the members of our local organizing committee National and International Advisory committee.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-82

DIRECTOR'S DESK

On behalf of IGCE am delighted to welcome all the delegates and participants to our IGCE campus for "International Conference on Recent Trends in Advancements of Engineering" 15/02/2019. Transforming the importance of Engineering, the theme of this conference is "to enhance Advancements of Engineering". It will be a great a great pleasure to join with engineers. Research scholar's academicians and student. You are all invited to stimulate and enriched by the latest in engineering research and development while delving into presentations surrounding transformative advances provided by a varietyof disciplines.

I congratulate the review committee; coordinators and all the people involved for their efforts in organizing the event and successfully conducting the International conference and wish all the delegates and participants, who join us with enthusiasm.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikendam, Trichy-620 012

SECRETARY MESSAGE

It is a great pleasure for me to congratulate all the participants in the "International Conference on Recent Trends in Advancements of Engineering" 2019, in IGCE, Trichy Tamilnadu and welcome the participants who have to exchange experience.

Engineering & Technology plays vital role in the modern life, profoundly influencing the course of human civilization. All the great scientific discoveries and information technological achievements in our country have improved the India country in all the fields and have created many new ways to the new generations to grow in the technologically advanced environment.

The main goal of the conference is to educate and motive the participants to develop their skills in all dynamics which must be the high priority of Indian technical education for Engineering & Technology development in our country in extra ordinary manner. We will endeavor to provide the best through lectures, ppt and students activities which will be a part of this conference. Sepulchers and prominent figures in various technical fields have been invited for sharing their latest insights of academics and research in Engineering & Technology.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandi   -620 012

ISBN: 978-81-970087-4-0

Principal Message

On this occasion I would like to invite all of you to the International conference I am glad to inform you that the "International Conference on Recent Trends in Advancements of Engineering" at IGCE, will be a eye-opener in the field research in engineering discipline.

The International conference aims to focus in applications and will be of interest to students, academicians, industrialists and others. The conference has an array of sessions dedicated to various applications them and several invited talks by experts. The papers contributed will be comprehensively administered to appear in journal.

I wish all the best to the participants and the organizing committee of the said conference who have presents lots of efforts for successful organization of this International conference.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

Table of Contents

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

9.	Experimental Evaluation Of A Retrofitted Extensive Green Roof Module On A Sloping Gi Sheet Roof In A Humid Subtropical Climate 1. [1]Ms E Vinodha , [2] Ms G Bharani
10.	Field And Numerical Evaluation Of Lateral Bending In Skewed Steel I- Girder Bridges During Deck Placement 1. [1]Mr R Sivashankar, [2] Mr S Ramalingam, [3]Varshini B
11.	Live Load Distribution Factors For Steel Press-Brake-Formed Tub Girder Bridges 1. [1]Mr B Senthil Kumar, [2] Aklaya B, [3] Nandhini P
12.	Investigate The Increase In Load Rating And Reliability Of A Pre- Stressed Concrete Bridge When Utilizing Field-Derived Distribution And Impact Factors 1. [1]Mr S Ramalingam, [2]Mr M Kaliraj, [3] Vinitha T
13.	Softened Membrane Torsional Model For Gfrp-Reinforced Concrete Bridge Box Girders 1. [1]Ms Veena Suresh, [2] Mr P Vignesh, [3] Jaganath A
14.	Vertical Clearance Assessment For Highway Bridge Based On Multisensor Fusion Simultaneous Localization And Mapping 1. [1] Dinesh Nr, [2] Dinesh S
15.	Field And Numerical Evaluation Of Lateral Bending In Skeward Steel I- Girder Bridges During Deck Placement 1. [1]Mr M Kaliraj, [2] Ms R K Rajeshwari
16.	Live Load Distribution Factors For Steel Press-Brake-Formed Tub Girder Bridges 1. [1]Ms C Nivedhitha, [2] Ms S Arunkumar, [3] Yogalakshmi V
17.	Improvements In Convergence Robustness With A 2d-3d Of Method: Application Of Genetic Algorithm To Coupled Flutter 1. Ms G Bharani, [2]Akalya B

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manik____ ___ ___ y-820 012

18.	Influence Of Sidewalks And Railings On Wheel Load Distribution In Steel Girder Bridges 1. [1]Ms E Vinodha, [2]Ayyappan V, [3] Karthik P	
19.	Uniform Bridge Element Identification System For Database Management For Roadway Bridges 1. [1]Mr R Sivashankar, [2] Ms Anathi K	
20.	Closure To "Cable- Stayed Bridge Concept For Longer Spans" By Uwe Starossek 1. [1]Mr B Senthil Kumar, [2]Ramu S, [3] Abdul Ajees	
21.	Shear Distribution In Simply-Supported Curved Composite Cellular Bridges 1. [1]Mr S Ramalingam, [2] Abdul Khader M	
22.	Deterioration Assessment And Rehabilitation Design Of Existing Steel Bridge 1. [1]Ms Veena Suresh, [2] Vinitha T, [3]Varshini B	
23.	Impact Of Graphene On Microstructure And Compressive Strength Of Cement Mortars Utilizing Two Different Dispersion Methods 1. [1]Mr M Kaliraj, [2] Nandhini P, [3] Pradeep C	
24.	Evaluation Of Total Stress In W-Flange Members Using Ultrasonic Shear Waves 1. [1]Ms C Nivedhitha, [2] Priyadharshini A, [3] Vigneshwaran R	
25.	Design Methodology For Strengthening Of Continuous-Span Composite Bridges 1. [1] Ms G Bharani, [2] Kavitha G, [3] Sindhu S	
26.	Experimental Investigation On Nonlinear Flexural Behavior Of Post- Tensioned Concrete Bridge Girders With Different Grouting Conditions And Prestress Levels 1. [1] Ms E Vinodha, [2] Jaganath A, [3] Jaganathan J	
27.	Long-Term Behavior Of Continuous Precast Concrete Girder Bridge Model 1. [1]Mr P Vignesh, [2] Mathan Kumar, [3] Ramu S	

28.	Prediction Of Cancer Based On Semi Supervised Of Framework For Micro Array Datasets Using Big Data Analysis 1. 1Dr.P.Subharajam Balaji.G
29.	A Direct Anonymous Attestation Scheme With Epid Revocation Capabilities And Sybil Hole Attack Prevention 1. Dr.P.Subharajam 2. Barani Kumar.M
30.	Design An Efficient Clustering Technique Based On Feature Subset Selection In High Dimensional Data 1. Dr.P.Subharajam 2. Denima.A
31.	Heuristics Rules For Mining High Utility Item Sets From Transactional Database 1. .Dr.P.Subharajam 2. Denima.A
32.	A Boundary Approximation For Classification Of Critical Nuggets 1. Dr.P.Subharajam 2.Giridharani.S
33.	An Efficient Approach To Implement Image Retrieval System Based On Image Features 1. Mrs.D.Indra Devi 2.Gokila.R
34.	Automatic Traffic Monitoring System 1. Mrs.D.Indra Devi 2.Gomathi.A
35.	Design Of Multimodal Biometrics Authentication Using Feature Extraction 1. Mrs.D.Indra Devi 2.Hema.P
36.	Secure Intrusion Detection System Against Denial Of Service Attack Using Firecol 1. Mrs.D.Indra Devi 2.Hemasivasankari.S
37.	Shape Identification Based On Segmentation In Video Motion Analysis 1. Mrs.D.Indra Devi 2.Indhu.S

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

38.	Healthcare Solution Using Android Devices In Global Network 1. Mr.S.Vimalathithan 2.Indira.K.J	
39.	Dynamic Resource Allocation And Cost Minimization In Cloud Environment Using Gossip Protocol 1. .Mr.S.Vimalathithan 2.Kanaga Raj.	
40.	Natural Interaction Between User And Computer With Embodied Conversational Agents 1. Mr.S.Vimalathithan 2.Keerthana.R.R	
41.	Hierarchical Trust Management For Delay Tolerant Networks Using Stochastic Petri Net For Secure Routing 1. Mr.S.Vimalathithan 2.Keerthana.S	
42.	Effective Convex Optimization For Client Server Assignemnt Problem Using Normalized Cuts Algorithm 1. Mr.S.Vimalathithan 2.Mani Kandan.A	
43.	An Implementation Of Intelligent Survival Robot For Bomb Detection And Diffusion 1. Mr.C.Jegadeesan 2.Mani Kandan.P	
44.	Dynamic Resource Allocation And Cost Minimization In Cloud Environment Using Gossip Protocol 1. Mr.C.Jegadeesan 2.Meena.A	
45.	Challenges and Solutions for Ensuring Stability in Electrical Power Systems 1. Mrs. P. Bowmila, 2Ms. A. Thaiyal Nayagi, 3Ms. R.Deepika, 4Ms. S.Nisha	
46.	Optimal Load Forecasting in Power System Distribution using Artificial Intelligence 1. Mr. A. Abdul baseeth, 2Mrs. B. Priya, 3Ms. M.Pavithra, 4Ms. A. Pragadeeshwari	

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

47.	Enhancing Power Quality in Power System Distribution using Artificial Intelligence 1. Ms. R. Ragadharshini, 2Ms. S. Raga Brintha, 3Ms. S. Sivaranjani, 4Ms. R.Ragavi
48.	MATLAB Simulation of Multilevel Inverters: Modeling, Control, and Performance Analysis 1. Mrs. K. Umamaheswari, Ms. R.Akilandeswari
49.	Integration of Renewable Energy Sources in Power Grids 1. Mr. A. Abdul baseeth, 2Ms. K.A. Muthulakshmi, 3Ms. R.Aashika, 4Ms. P. Abitha
50.	Techno-Economic Analysis of Photovoltaic Systems for Residential Applications 1. Mr. T. Parthiban, 2Ms. A. Thaiyal Nayagi, 3Ms. P. Abitha, 4Ms. R.Deepika
51.	Techno-Economic Analysis of Photovoltaic Systems for Residential Applications 1. Mr. T. Parthiban, 2Ms. A. Thaiyal Nayagi, 3Ms. P. Abitha, 4Ms. R.Deepika
52.	The Importance of Power Electronics in AC Drives: Enhancing Efficiency and Control 1. Mrs. P. Bowmila, 2Ms. S. Raga Brintha, 3Ms. N. Arthy, 4Ms. S. Nisha
53.	Stability Analysis of Multi-Source Electrical Systems: Challenges, Methods, and Control Strategies 1. Mr. N. Manikandan, 2Ms. R.Ragadharsini
54.	The Role of Power Electronics in DC Drives: Enabling Electrification and Automation 1. Ms. K.A. Muthulakshmi, 2Ms. C. Nanthini, 3Ms. R.Deepika, 4Ms. M. Pavithra
55.	Power Theft Detection using Machine Learning Techniques 1. Mrs. B. Priya, 2Mrs. P. Bowmila, 3Ms. S. Nisha, 4Ms.A.Pragadeeshwari

PRINCIPAL
Indra Ganesan College of Engineering
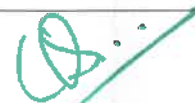IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

56.	Enhancing Frequency Control Techniques for Robust Power System Stability 1. Mrs. B. Priya, 2Mrs. P. Bowmila, 3Ms. S. Nisha, 4Ms.A.Pragadeeshwari
57.	Smart Metering Systems for Real-Time Energy Management and Home Automation in Residential Houses 1. Mr. R. Muthukumar, 2Mr. J.Sathyaraj
58.	Application of Artificial Intelligence Techniques for Optimization and Control of Electrical Machines 1. Mrs. P. Bowmila, 2Mr. T. Parthiban, 3A.Pragadeeshwari, 4Ms. R. Ragavi
59.	Advancements in Brushless DC Motors: A Comprehensive Review 1. Ms. K.A. Muthulakshmi, 2Mrs. P. Bowmila, 3Ms. R.Ragavi, 4Ms. S. Abinaya
60.	Advances in Synchronous Motor Technology: A Comprehensive Review 1. Mrs. P. Bowmila, 2Ms. A. Thaiyal Nayagi, 3Ms.R.Aashika, 4Ms. N. Arthy
61.	A Comprehensive Review Advancements in Reluctance Motor Technology 1. Mr. A. Abdul baseeth, 2Mrs. P. Bowmila, 3Ms. S. Abinaya, 4Ms. S. Nisha
62.	Embedded System with GSM for Panic Button and Emergency Response in Bank Security 1. Mr.G.Mathew, 2Mr. T. Parthiban
63.	Active Power Quality Control Strategy for Mitigating Voltage Sags and Swells in Power Distribution Systems 1. Ms. K.A. Muthulakshmi, 2Ms. A. Thaiyal Nayagi, 3MsAbinaya, 4Ms. M. Pavithra
64.	Adaptive Control Strategy for Harmonic Mitigation in Power Systems with Nonlinear Loads 1. Mrs. B. Priya, 2Mr. A. Abdul baseeth, 3Ms.S.Abinaya, 4Ms. M.Pavithra

65.	Optimal Control Strategy for Voltage Regulation and Reactive Power Compensation in Distribution Networks 1. Ms. R.Ragadharshini, 2Ms. K.A. Muthulakshmi, 3Ms. S. Abitha, 4Ms. Pragadeshwari	
66.	Voltage Sag Analysis and Mitigation Techniques for Power Quality Improvement 1. Ms. C. Nanthini, 2Mrs. B. Priya, 3Ms. N. Arthy, 4Ms. S. Nisha	
67.	Adaptive Model Predictive Control for Enhanced Speed Control in Dynamic Systems 1. Mr. R.Arunkumar, 2Mr. A. Abdul Baseeth	
68.	Flicker Analysis and Mitigation Techniques for Power Quality Enhancement 1. Mr. T. Parthiban, 2Ms. S. Raga Brintha, 3Ms. R.Deepika, 4Ms. S.Sivaranjani	
69.	Modeling and Control of SCR Controlled Rectifier for High-Power Applications 1. Mrs. P. Bowmila, 2Ms. C. Nanthini, 3Ms. S.Nisha, 4Ms.R.Ragavi	
70.	Impedance Relay Applications in Power System Protection: Principles and Performance Analysis 1. Ms. A. Thaiyal Nayagi, 2Mr. T. Parthiban, 3Ms. A.Pragadeshwari, 4Ms. S. Ashika	
71.	Open Circuit Test of a Single-Phase Transformer: Analysis and Interpretation of Test Results 1. Mr. A. Abdul baseeth, 2Ms. A. Thaiyal Nayagi, 3Ms.S.Nisha, 4Ms. P.Abitha	
72.	Comparative Analysis of Starting Methods for Electrical Machines 1. Ms. Reetta, Ms. K.A. Muthulakshmi	
73.	Buchholz Relay Application in Three-Phase Transformer: Fault Detection and Protection Strategies 1. Ms. K.A. Muthulakshmi, 2Ms. S. Raga Brintha, 3Ms. S.Sivaranjani, 4Ms. N.Arthy	

74.	Induction Motor Applications in Renewable Energy Systems: Grid Integration and Power Quality Considerations 1. Ms. C. Nanthini, 2Mrs. P. Bowmila, 3Ms. K.Kayalvizhi, 4Ms. S.Ramadevi	
75.	Study and Analysis of Single Phase 13-Level Inverter Switching Pulses by interfacing Arduino 1. Mr.Sabarirajan, 2Mrs. B. Priya	
76.	Advanced Control Techniques for Electric Vehicle Propulsion Systems: A Comprehensive Review 1. Mrs. B. Priya, 2Mr. T. Parthiban, 3Ms. Srinanthana, 4Ms. R.Kaviya	
77.	Stability Control Strategies for Hydro Power Generation: A Comprehensive Review 1. Mrs. P. Bowmila, 2Mr. T. Parthiban, 3Ms.S.Kopperundevi, 4Ms.S.Sribharathi	
78.	A Review of implementation of 5 level Inverter with reduced switches using Photovoltaic System. 1Ms.S. Lavanya, 2Ms. C. Nanthini	
79.	Advancements in High-Speed Fiber Optic Communication Systems 1. Mrs T.K.Mohanapriya, 2Mrs. G.Vidya, 3S.Abirami, 4Abitha S	
80.	Design and Implementation of a Low-Power Wireless Sensor Network for Environmental Monitoring using Arduino 1. Mrs Dr V. Vijayasaro, 2Mrs. G. Gopperumdevi, 3Jeyasri .K, 4Sabareeswari.S	
81.	Edge Detection in Images Using the Canny Operator in MATLAB 1. Mr.M.Palaniappan, 2Mrs. T.K. Mohanapriya, 3Anushya M, 4Desika .G	
82.	Image-Based Biometric Recognition Using Deep Learning and Face Recognition in Python 1. Mrs R.Yogeshwari.,2Mrs Mrs.G.Vidya ,3Senpagaharini V, 4 Soniya P	

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Medical Main Road
Manikandam, Trichy-620 012

83.	Arduino-based Wearable Sensor Networks for Healthcare Applications in IoT 1. Mrs. P.Keerthana, 2Mrs. T.K. Mohanapriya, 3Ananthi P, 4Jaffarnisha R
84.	Secure Key Distribution in Quantum Fiber Optic Networks 1. Mr. M. Palaniappan, 2Mrs. T.K.Mohanapriya , 3Maheswari K, 4Manisha
85.	IoT-Enabled Attendance Management and Notification System using RFID for Educational Institutions 1. Mrs. Nithyapoorani.V, 2Mrs. T.K.Mohanapriya, 3Megavadhana.A, 4Priyanga.R
86.	Efficient Management System for Waste Monitoring And Controlling 1. Mr.M. Palaniappan, 2Mrs. T.K. Mohanapriya, 3Megavadhana.A, 4Priyanga.R
87.	Deep Learning for Predictive Maintenance in Industrial IoT 1. MrsG.Gopperumdevi, 2Mrs T.K.Mohanapriya, 3Ragavi.V, 4Rajapraba.M
88.	AI –Enhanced Wildlife Management for smart crop protection system attack using CNN algorithms 1. Mrs. R.Yogeshwari , 2Mrs. T.K.Mohanapriya,3 Ragavi.V, 4 Rajapraba.M
89.	Autonomous Navigation and Obstacle Avoidance for Mobile Robots in Dynamic Environments 1.Mrs R.Yogeshwari. , 2Mrs T.K.Mohanapriya, 3Sasika K .V, 4Aashima M
90.	Adaptive Control and Learning for Robotic Systems 1. Mrs Nithyapoorani.V, 2Mrs G.Vidya, 3Amrin M, 4Dhanyashree A
91.	Joint Estimation of Channel and Carrier Frequency Offset in OFDM Systems 1. Mrs Nithyapoorani.V, 2Mrs Gopperumdevi.G, 3Kalaivani. R, 4Keerthana V
92.	Joint Optimization of Link and Path Selection in Software-Defined Optical Networks 1. Mrs. T.K.Mohanapriya, 2Mrs. R.Yogeshwari.R, 3Pavithra P, 4Suguna C

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

93.	Automatic Modulation Classification of Communication Signals Using Machine Learning 1. Mrs Nithyapoorani.V, 2Mrs Gopperumdevi.G, 3Kalaivani. R, 4Keerthana
94.	Human-Robot Collaboration for Efficient Assembly Tasks in Industrial Environments 1. Mrs Gopperumdevi.G, 2Mr M.Palaniappan, 3Pavithra P, 4Rajeshwari R
95.	Optical Fiber Sensors for Structural Health Monitoring 1. Mrs G.Vidya, 2Mrs Nithyapoorani, 3Pavithra P, 4Subalakshmi M
96.	Secure Communication in IoT using Arduino-based Wireless Sensor Networks 1. Mrs Gopperumdevi.G, 2Dr.Vijayasaro, 3Suguna.C, 4Subalakshmi M
97.	Reconfigurable Antenna Arrays for Beamforming in Massive MIMO Systems 1. Ms.R.Bhuvaneswari1, Akilan Adhavan2, Aravind Sekar M3
98.	Design and fabrication of weighing wave bridge with overload detector 1. Ms.R.Bhuvaneswari1,N.Ashefa2
99.	Hr analytics - an effective evidence-based hrm tool 1. Ms.R.Bhuvaneswari
100.	GPS based Vehicle tracking and alert syatem 1. Mrs.P.Santhana Selvi, P.Kanimozhi,S.Suganthi
101.	Design of collision mitigation system 1. Mrs.P.Santhana Selvi1,S.Mohan Raj 2
102.	Implementation of virtual friendly women security device with IoT technology 1. Mrs.P.Santhana Selvi1
103.	Advanced seat belt controlled vechicle system 1. Mr.J.Manokaran,S.Palani

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

104.	Automatic license provider system 1. Mr.J.Manokaran1, S.Amsavalli 2
105.	IoT based Coal Mine Monitoring and Alerting System 1. Mr.J.Manokaran
106.	Efficiency and area reduction for a Pseudo random number generator frame work based on well method 1. Ms.M.Mahalakshmi, T.Atheeswaran
107.	Methodology and Guidelines for Designing Flexible BMS in Automotive Applications 1. Ms.M.Mahalakshmi1, T.Dhanalakshmi2
108.	IoT based Fertilizer Recommendation system for Smart Agricultur 1. Ms.M.Mahalakshmi
109.	Design of high isolation Ku band Microstrip Array Antenna for Marine Radar 1. Ms.R.Nithya1,V.Mahalakshmi2, A.Margreat3
110.	IoT based Mining Tracking and Worker Safety Helmet 1. Ms.R.Nithya
111.	Energy-Efficient Resource Allocation in Wireless Transmission for Internet of Things (IoT) Networks 1. Mr.K.Kumar1, M.Prabu2
112.	Precise Systematic Data Transfer In Underwater Acoustic Wireless Sensor Based Network Approach 1. Mr.K.Kumar
113.	Smart Ambulance Using IoT 1. Mr.K.Kumar1
114.	Power Reduction through Hyberthread Technology for Multi Bit Flip Flops 1. Mr.S.Balakrishnan

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

115.	Wireless data communication system based on li-fi using leds 1. Mr.S.Balakrishnan
116.	Agent based Traffic Control System of Vehicle Rerouting 1. Mr.S.Balakrishnan
117.	Efficient design of encoder and decoder for golay code 1. Mr.R.Thirunavukkarasu1, K.Kalaivani2
118.	Cell Phone Controlled Fingerprint Solenoid Door Lock Using Arduino and HC-05 1. Mr.R.Thirunavukkarasu
119.	Design and control of an active orthotic leg 1. Mr.R.Thirunavukkarasu
120.	ECG Signal Denoising Using Ensemble Emprical Mode Decomposition 1. Mrs.B.Saraswathi,V.Nivetha,S.Praveena
121.	Design of Metal Detection Robot Enhanced With FPGA 1. Mrs.B.Saraswathi
122.	Design, Simulation and Development of 2K Core Half Rotating Mould to Improve Aesthetic Value of Plastic Component 1. Mrs.B.Saraswathi
123.	Adaptive Beam Steering Antenna for improved Coverage of Non -Contact Vital Sign Radar Detection 1. Mrs.V.Elakkiya1 ,K.Jacqulinmary2, T.Thilagavathi3
124.	Electric skateboard 1. Mrs.V.Elakkiya
125.	GSM based Smart Motor Starter using Android Automation Tool 1. Mrs.V.Elakkiya

126.	DSSS -CDMA Technique using QPSK Modulator 1. Mrs.S.RahamathNisha1, P.Jeeva rani2, R.Jeyasri3
127.	Motorised Bench Vice With Arduino Control 1. Mrs.S.RahamathNisha
128.	An Efficient Standard Basis Based Encoding/Decoding Method for CDMA NoC 1. Mrs.G.Keerthana1, RM.Adakkammai2, K.Ashema Begam3
129.	Semi Humanoid Pneumatic Robot 1. Mrs.G.Keerthana
130.	Performance evaluation of different kind of attack in Wireless Network 1. Ms.P.Jency Leena 1, K.Mohamed Asath2, R.Ranjith Kumar3
131.	Speed Control and Torque Ripple Suppression for Switched Reluctance Motor using Artificial Neural Network 1. Ms.P.Jency Leena
132.	Wireless Sensor Network Based Deforestation Detection 1. Dr.R.Rajamohamed1,K.Rajapalikhan2
133.	Substation Monitoring and Control in view of Microcontroller using IoT 1. Dr.R.RajaMohamed
134.	The importance of Efficient Purchasing in a Manufacturing Company Supply Chain Management 1. Dr.R.RajaMohamed
135.	Estimation of Optimized Parameters in Mixed Column Architecture for Advanced Encryption Standard Cryptography 1. Mrs.M.Nandhini, K.R.Vel Rajeswari
136.	Towards Clean India Mission: Smart Inclusive Bin Initiative 1. Mrs.M.Nandhini

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

137.	Arduino Based MPPT Charge Controller for Solar PV System 1. Mrs.M.Nandhini
138.	Voice Controlled intelligent fire extinguishing robot 1. Mrs.D.Kokila1,P.Keerthana2,M.Preetha3
139.	Automatic Solar Panel Cleaning System 1. Mrs.D.Kokila1
140.	Control Of Hybrid Energy System For Rural Electrification 1. Mrs.D.Kokila
141.	Vibrational Power Generation On High Ways Using Piezoelectric Crystal 1. Dr.G. Malathy 1AMUDHA. M2 , ANANAD. V3
142.	Gain Scheduling Proportional Integral For Standalone Wind Energy System 1. Dr.G. Malathy 1 Balachandran. M2, Bhuvaneshwari A3
143.	Performance Of Relays And Protection Equipment Under Vibration Environment 1. Dr.G. Malathy 1 Deepa Ragavi.M2, Fathima Selvi C3
144.	Insulation Coordination Of A Uhv Ac Transmission Line Considering The Switching Overvoltage Waveshape 1. Mr.O. Karthikeyan 1 GAJALAKSHMI. B 2, GAYATHRI. R 3
145.	Short Circuit Modelling And Analysis Of Pv Inverters In Large Solar Farms 1. Mr.O. Karthikeyan 1 GOMATHI. S 2, GOMATHY.M 3
146.	Design Review Of Gas Insulated And Hybrid Gas Insulated Switchgear 1. Mr.O. Karthikeyan 1 GOPINATH. R, 2, GUNASEELAN .M 3
147.	Performance Evaluation Of Circuit Breakers Under Asymmetrical Fault Condition 1. 1Ms. G.Bhuvaneswari, 2Ms. Gulnas Fathima S

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

148.	Application Of Line Surge Arresters For Switching Over-Voltages In Uhv Transmission Systems 1. Mrs.R. Megaladevi 1 MANIKANDAN. M, 2, MEENA.S 4	
149.	Multi Source Bidirectional Dc/Dc Converter By Using Pv-Wind-Battery Based Integration For Domestic Applications 1. Mrs.R. Megaladevi 1 MEENAKSHI. P, 2 MOHAMED ANSARI .A 3	
150.	An Electric Braking Scheme For A Bldc Motor Driven Electric Vehicle 1. Mr.S. Vijai 1 MOHAMED IBRAHIM. A, 2 NIVETHA B 3	
151.	Network Performance Optimization for Mobile Networks and Wireless Communication 1. Mr.S. Vijai 1 PRASANTH. R, 2 PRIYA G 3	
152.	Arc Fault Protection And Detection 1. Mr.S. Vijai 1 PRIYANKA. P, 2 SATHEESWARI P 3	
153.	Loss Analysis Of Conversion From Low Voltage Distribution System To High Voltage Distribution System 1. Mr.S. Ponmathi Rajithkumar1 SATHISHBABU. K 2 SATHYAPRIYA .M 3	
154.	Fuses For Hybrid And Electrical Vehicle Application 1. Mr.S. Ponmathi Rajithkumar1 SELASTEENA RANI. J, 2 SHALINI .M 3	
155.	Electric Bike-Advantages And Challenges: A Review 1. Mr.S. Ponmathi Rajithkumar1 SIVA RAMAN. M, 2 SIVASAKTHI M 3	
156.	Charge-Discharge Behaviour Of Lead Acid Battery And Lead Carbon Hybrid Ultracapacitors As Anintegrated System For Solar Power Applications 1. Mr.D. Praveen Sangeeth Kumar1 SOPHIYA. T, 2 SRI GAYATHRI M 3	
157.	Emi (Electromagnetic Interference) Research In Power Electronics Systems 1. Mr.D. Praveen Sangeeth Kumar1 TAMILSELVI.M, 2 VANITHA .M 3	

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Road,
Manikandam, Trichy-620 012

158.	Comparison Of Feedback Field-Weakening Techniques For Synchronous Machines With Permanent Magnets 1. Mr.D. Praveen Sangeeth Kumar1 VANITHA. S, 2 VASUMATHI. V 3
159.	Highly Efficient And Reliable Power Converters For Microgrid Applications 1. Mr.A. Richards Rethinasamy1 VIGNESHWARAN. N, 2 VIJAYALAKSHMI R 3
160.	Design And Development Of Sepic Dc-Dc Boost Converter For Photovoltaic Application 1. Mr.A. Richards Rethinasamy1 VINOTH. S, 2 AMUDHA .M 3
161.	Variable Frequency Control In High Switching Frequencies Dc-Dc Converters 1. Mr.A. Richards Rethinasamy1 GOPINATH. R, 2, GUNASEELAN .M 3
162.	Bidirectional Resonant Converter Based On Wide Input Range And High Efficiency For Photovoltaic Application 1. Mr.P. Nirmal Kumar1 JERALD FELIX. A SATHEESWARI P
163.	PHOTOVOLTAIC BASED SINGLE PHASE SINGLE STAGE BOOST INVERTER 1. Mr.P. Nirmal Kumar1 MANIKANDAN. M 2 SOPHIYA T 3
164.	DESIGN CHOICE IN THE DIRECT DRIVE IN-WHEEL MOTORS 1. Mr.P. Nirmal Kumar1 MEENAKSHI. P 2, SIVARAMAN M 3
165.	DIELECTRIC FAILURE ANALYSIS OF DISTRIBUTION TRANSFORMER 1. Mr.A. Thangaraj1 MOHAMED IBRAHIM 2 A. GAYATHRI R
166.	ARTIFICIAL POLLUTION TESTING OF HVDC INSULATORS 1. Mr.A. Thangaraj1 SELASTEENA RANI. J ,KEERTHANA K
167.	Experience Of Testing And Evaluation Of Hv Capacitors For Endurance Testing 1. Mr.A. Thangaraj1 SIVA RAMAN. M, J2 TAMILSELVI M 3

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main
Manikandam, Trichy-620 012

168.	Modelling, Simulation and Validation of Reciprocationg Engine 1. Mr.D P.Devan, IT, Associate Professor Dhanalakshmi. D
169.	Proposed two layer cryptography based key generation for off promise cloud computing 1. Ms.T.N.Sterlin Minish, IT, Assistant Professor Aishwarya
170.	Prediction of Total Transfer Capability using ANN in Restructured Power System 1. Ms.S.Surya,Greeshma
171.	Transient stabilization of SMIB power system using soft computing 1. Ms.B.Pushpalatha, IT, Assistant Professor Mathan Sam Raj. M, IT, UG Student
172.	Gestures Based Wireless Robotic Control Using Image Processing 1. Mrs.M.Gayathri, IT, Assistant Professor Nandhini
173.	Web user's Browsing Behavior Prediction by Implementing Support Vector Machines in MapReduce using Cloud Based Hadoop 1. Mrs.S.Saroja Devi, Priyadharshin
174.	Common Differential Relaying Scheme for the Protection of Various Transformer Configurations 1. Mr.D P.Devan, Keerthana
175.	A Comparative Study of various Community Detection Algorithms in the Mobile Social Network 1. Mrs.K.Uthra, Siddika Banu
176.	Invariants Based Blur Classification Algorithm 1. Ms.S.Surya, Deepalakshmi
177.	Sensitizing Engineers: A Brief Study of the Role of Ethics in Engineering 1. Mrs.S.Saroja , Karan

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

178.	Multi-Objective Optimal Active Power Dispatch using Swarm Optimization 1. Mr.D P.DevanManikandan
179.	Development of an Intelligent Sensor Based Inspection Robot for Closed 1. Ms.B.Pushpalatha, Nooril Meena
180.	Modelling of Grid Tied 3-Level Diode Clamped Inverter Using Space Vector PWM For PV System 1. Ms.T.N.Sterlin ,Sagaya Rani
181.	Design Of Sram Array Using 8t Cell For Low Power Sensor Application 1. Ms.M.Nalini, Vijayalakshmi
182.	Leakage Current Reduction In Finfet Based 6t Sram Cell For Minimizing Power Dissipation In Nanoscale Memories 1. Mrs.M.Gayathri, Victoriaezilarasi.A
183.	Data Streams and Privacy: Two Emerging Issues in Data 1. Ms.M.Nalini, Vijayalakshmi
184.	Simulation Of Typical Civil Aircraft Fuel Transfer Process 1. Mrs.K.Uthra Devi, Vimalraj
185.	SBHS: Some control investigations 1. Pavithra, Ms.T.N.Sterlin Minish
186.	Teaching of Mathematics in Engineering by Discussing the Different Conceptual 1. Chithira, Mrs.S.Saroja Devi
187.	Robotics Based Simultaneous Localization And Mapping of an Unknown Environment 1. Ms.S.Surya, Aishwarya

188.	Comparative Analysis of 3D Face Recognition Using 2D-PCA and 2D-LDA 1. ,Mrs.M.GayathriChithira
189.	Innovations in Evaluation: An Integral Part of Outcome Based Education 1. Mrs.K.Uthra Devi, Dhivya
190.	Indian Transformer Industry gearing up for Next-gen Green Fluids 1. Anitha, Ms.M.Nalini
191.	Analysis on Electromagnetic Repulsion Force for Enhancement in Repulsion Threshold Current of Contact System in MCCB 1. Ms.B.Pushpalatha, Keerthana
192.	ANFIS as a controller for fractional order system 1. Mrs.B.Kanisha, Ganga Devi
193.	Thinkers in My Classrooms- Teaching Critical Thinking – Deductively 1. Ms.T.N.Sterlin Minis, Jency Delphina
194.	RFID Based Library-Efficiency Personified 1. Ms.M.Nalini, Sathish Kumar
195.	Digital protection strategy of microgrid with relay time grading using particle swarm optimization 1. Siddika Banu , Mrs.B.Kanisha
196.	Surveying Stock Market Portfolio Optimization Techniques 1. Mrs.M.Gayathri, Vimalraj
197.	USB based High Speed Data Acquisition System 1. Ms.B.Pushpalatha, Gayathri

198.	Brain Computer Interface: A Review 1. Aishwarya, Mrs.K.Uthra Devi
199.	Cogging Torque Minimization by Magnet Edge Inset Variation Technique in Radial Flux Surface Mounted Permanent Magnet Brushless DC (PMBLDC) Motor 1. Mrs.B.Kanisha, Anbuselv
200.	Analysis of Satisfaction Level of Employees in the Telecom Sector. 1. Dr.Thiagarajan , Ms. Abinaya , Ms. Akalya M
201.	A Study on Productivity and Efficiency Management in Agro Based Industry 1. Ms.Minipriya N, Mr. Ajithkumar, Mr. Gopalakrishnan
202.	A STUDY ON ANALYSIS OF WORKING CAPITAL MANAGEMENT IN BHEL, TRICHY 1. Ms.Nisha Martina L, Mr. Vignesh M, Mr. Selvakumar K
203.	A Study of Customer Buying Behaviour for FMCG between Rural and Urban Customers 1. Dr.Thiagarajan B, Ms. Vinothini S, Ms. Vasuki S
204.	Study On Effectiveness Of Reward System On Employee Motivation In Bpo Sector 1. Ms.Minipriya N, Ms. Yogeswari T Ms.Vasuki S
205.	Importance of Recognition For Employees In Rewards System. 1. Ms.Thazhali B, Ms. Sujitha, Ms.Monisha A
206.	Study of HRIS implementation challenges and solution : An overview 1. Ms. Cynthia Sheeba Cathrin Ms. Nisha Martina L
207.	Utilization of Copper Slag in Precast Concrete Products 1. Ms. Nisha Martina L, Ms. Kanimozhi K, Ms. Parkavi A

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main
Manikandam, Trichy-620 012

208.	A Study on Online shopping habits of working Professionals 1. Ms. Thazhali B, Mr. Kirubakaran
209.	A Study on Online shopping habits of working Professionals 1. Mr. Guna VS, Ms. Mariyammal K, Mr. Priyadharshini M
210.	Study of Executive perception on training & development system in an organization 1. Ms. Cynthia Sheeba Cathrin R, Ms. Revathi R,Mr. Sandhiya R
211.	A Study on The Various Employee Welfare Schemes at FMCG 1. Ms.Minipriya N Ms. Yosiya sahayarani A Ms.Shobana.A
212.	Study of Executive perception on training & development system in an organization 1. Mr. Kirubakaran ,Ms. Rohini M, Mr. Sivasankari P
213.	Study on Employee Motivation in an Organization 1. Ms. Cynthia Sheeba Cathrin R Ms. Stella Mary Mr. Usha K
214.	A Study On Employee Motivation W.R.F To Bsnl 1. Mr. Guna Mr. Arul Jothi V, Mr. Gokul R
215.	A Study on Planning, Controlling and Budgeting at Small Scale Snack Industry 1. Dr. Soundar Rajan C Ms. Geetha MMr. Nivetha K
216.	A study on need of Financial advisor for Mutual Fund Investor 1. Mr. Guna VS Dr. Soundar Rajan C,
217.	Analysis of Employee Training Needs in Banking Sector 1. Dr.Thiagarajan B Mr. Vignesh M Mr. Dineshkumar G
218.	A Study on Futures and Options Market in India 1. Dr.Soundar Rajan C Mr.Kirubakaran M

PRINCIPAL
Indra Ganesan College of
IG Valley, Madurai M
Manikandam, Trichy-62

219.	A Study on Gold as Investable Commodity\ 1. Dr.Soundar Rajan C Mr. Ajeesh M Mr. Alex Pandian T
220.	A Study on Impact of Corruption on FDI Inflows in India 1. Mr.Kirubakaran Ms.Renuka M Ms.Pushpanjali B
221.	A study on training and development of executive in the Ayurvedic Pharmaceuticals. 1. Ms. Thazhali B Ms. Neelambari L Ms. Juliana Mary S
222.	Employee attrition and retention strategies in BPO industry 1. Mr.Kirubakaran M Ms.Minipriya N
223.	Study of Future Trends in Recruitment- India and Overseas 1. Ms.Nisha Martina L Ms.Cynthia Sheeba Cathrin R
224.	Evaluation of machining behaviour of Al MMC 1. Mr. Ramesh Babu R, 2Mr. Faizal, 3Mr. Mohammed Isaq
225.	Optimization of drilling parameters of SS304 by Taguchi method 1. Mr. Ramesh Babu R, 2Mr. Naveen Raj, 3Mr. S. Revanth,
226.	Enhancing the Performance of Natural Coagulants through Pre-Treatment Techniques 1. Mr. Ramesh Babu R, 2Mr. Mohammed Burose, 3Mr. M. Aravinth,
227.	Effect of Copper Slag on the Permeability and Porosity of Concrete 1. Mr. Ramesh Babu R, 2Mr. I.S. Joyal, 3Mr. R. Parthiban,
228.	Simulation and optimization of laser cutting machine and its parameters. 1. Mr. Ramesh Babu R, 2Mr. M Ramachindran, 3Mr. A Ramakkannan,
229.	Optimization of drilling parameters of ss304 by taguchi method 1. Dr. Bharathiraja S, 2Mr. R Saravanan, 3Mr. C Prasanth,

230.	Experimental Investigation On Machining Behaviour Of Garnet Abrassive Water Jet Machining In AA6083, Zro2 And Graphite 1. Dr. BHARATHI RAJA S, 2Mr. R Chelladurai, 3Mr. R Gunaseelan
231.	De-hydration of agro products using tunnel type solar dryer for fruits and vegetables 1. Dr. BHARATHI RAJA S, 2Mr. M Karthik, 3Mr. D Muthurasu,
232.	Influence of high velocity oxy fuel spray parameters on mechanical properties of Cr3 / nicr coating 1. Dr. BHARATHI RAJA S, 2Mr. N Pradeep, 3Mr. P Sabarinathan,
233.	Investigation Of Mechanical Properties Of Glass Fiber Reinforcement Epoxy Composite. 1. Dr. BHARATHI RAJA S, 2Mr. R Shyam Sundar, 3Mr. R Karthick,
234.	Optimization Of Cnc Turning Parameters Of Alsi Cp Metal Matrix Composite By Grey Relational Analysis 1. Mr. SAMUEL M, 2Mr. S Syed Kaja, 3Mr. M Valarmathi,
235.	Borewell Rescue System 1. Mr. SAMUEL M, 2Mr. N Mahesh, 3Mr. P Sugumaran,
236.	Generation of hot water, hot air and desalinated water in 1. Mr. SAMUEL M, 2Mr. T Arun Kumar, 3Mr. A. Christian yesudass
237.	Development Solar Operated Electrical Two Wheeler 1. Mr. SAMUEL M, 2Mr. L Karthick, 3Mr. P Solai Raj,
238.	Optimization of fsw process and tool parameter to attain maximum tensile strength of al 7075-t6 al alloys by taguchi method 1. Mr. SAMUEL M, 2Mr. M K Kathiravan, 3Mr. R Kumaran
239.	Design And Analysis Of Chain Sprocket 1. MR. GURUPRANESH P 2Mr. N Manikandan, 3Mr. R Muralidharan,

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main R.
Manikandam, Trichy-620

240.	Optimization Of EDM Process Parameters On Al 7075 Using Different Tool Profile. 1. MR. GURUPRANESH P 2Mr. R Dinesh Kumar, 3Mr. A.S. Jeyaranjan,
241.	Characterisation Of Carbon Fibre Reinforced Polimer Matrix 1. MR. GURUPRANESH P 2Mr. J Crown Meshak, 3Mr. V Dinesh Kumar,,
242.	Design And Analysis Of Horizantal Axis Wind Turbine Blade. 1. MR. GURUPRANESH P 2Mr. J Crown Meshak, 3Mr. V Dinesh Kumar
243.	Optimization And Analysis Of Torsional Stiffness In FSAE Race Car Frame Design 1. MR. GURUPRANESH P 2Mr. S Mathiyarasan, 3Mr. M Mohandass,
244.	Design And Performance Analysis Of Centrifugal Pump Impeller For Enhanced Efficiency 1. MR. MADHAN J 2Mr. M Praveen Kumar, 3Mr. S.B. Saffar Hussain,
245.	Tribological Behavior Investigation Of Al7075 Alloy And Hybrid Composite Materials 1. MR. MADHAN J 2Mr. M Santhosh, 3Mr. S Vincent Paul Raj,
246.	Optimization of Process Parameters in Friction Welding of Al/SiCp Composite Materials 1. MR. MADHAN J 2Mr. B. Dinesh Kumar, 3Mr. P. Gopi,
247.	Experimental Investigation of Enhanced Corrosion Resistance via Tin and Silver-Modified Galvanization 1. MR. MADHAN J 2Mr. R. Karuppaiya Kristen Kennes, , 3Mr.
248.	Bio Fabrication and Testing of Artificial Metacarpal Bone for Implantation 1. 1MR. MADHAN J 2Mr. P. Sundaraman 3Mr. M Karuppaiyah,
249.	Implementation of Swirl Flow Injection of Air-Fuel Mixture in SI 1. MR. SARAVANAKUMAR C 2Mr. M Sairaj, 3Mr. G Tamilarasan,

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

250.	Design and Fabrication of Emergency Hybrid Two-Wheeler 1. MR. SARAVANAKUMAR C 2Mr. K Yogeshwaran, 3Mr. V Sudharsan,
251.	Optimization of End Milling Process of MONEL 400 Using Grey Relational Analysis 1. MR. SARAVANAKUMAR C 2Mr. S Hariharan, 3Mr. J. Praveen Kumar,
252.	Design and Analysis of Sound Isolation Case for Electric Motor 1. MR. SARAVANAKUMAR C 2Mr. R Premkumar, 3Mr. M Ganesh,
253.	Optimization of Cutting Parameters in CNC Turning Machine Using Harmony Search Algorithm 1. MR. SARAVANAKUMAR C 2Mr. R Sudhakar, 3Mr. V Suseedran,
254.	Design And Performance Analysis Of Centrifugal Pump Impeller For Enhanced Efficiency 1. Mr.JERRY ANDREWS FABIAN .S 2Mr. G . Thanasekaran, 3Mr. G. Venkatesh babu,
255.	Investigation of Corrosion Behaviour of Zinc Aluminium Alloy-Graphite in Metal Matrix Composite 1. Mr.JERRY ANDREWS FABIAN .S 2Mr. S Selvakumar, 3Mr. K Thamotharan,
256.	Performance and Emission Studies of Bio-Diesel Fuelled Diesel Engine with Ethanol as Additive 1. Mr.JERRY ANDREWS FABIAN .S 2Mr. P Depak, 3Mr. K Wanten Berk,
257.	Experimental Investigation on Effects of Biodiesel Blends 1. Mr.JERRY ANDREWS FABIAN .S 2Mr. R Ram Prasath, 3Mr. J Crown Meshak
258.	Comparative Study of Fiber Reinforced Polymer Sandwich Structures 1. Mr.JERRY ANDREWS FABIAN .S 2Mr. V Dinesh Kumar, 3Mr. S Mathiyarasan

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

259.	Studies on "Cold Metal Transfer Welding" of Al Alloy using ER4043 & ER5356 Filler Metal 1. Studies on "Cold Metal Transfer Welding" of Al Alloy using ER4043 & ER5356 Filler Metal
260.	Parameter Optimization of Al 6001 on EDM Machining Process using Grey Relational Analysis 1. Mr. S.MAHESHWARAN 2Mr. P. Gopi, 3Mr. R. Karuppaiya
261.	Optimization of Friction Welded Aluminium-Based Metal Matrix Composite Joints 1. Mr. S.MAHESHWARAN 2Mr. P Karuppaiyah, 3Mr. R Ram Prasath
262.	Reheating Solar Heaters Using Temperature Storage System 1. Mr. S.MAHESHWARAN 2Mr. G Tamilarasan, 3Mr. K Yogeshwaran
263.	Fabrication and Characterization of Al 7075 Hybrid Metal Matrix Composites 1. Mr. S.MAHESHWARAN 2Mr. J. Praveen Kumar, 3Mr. R Premkumar
264.	Friction Stir Welding of Al Plate and its Influence of Different Pins 1. Mr. C.JEGATHEESAN 2Mr. K Thamotharan3Mr. P Depak
265.	Generation of Hot Water, Hot Air, and Desalinated Water in Solar Pond 1. Mr. C.JEGATHEESAN 2Mr. Mohammed Isaq 3Mr. Naveen Raj
266.	Generation of Hot Water, Hot Air, and Desalinated Water in Solar Pond 1. Mr. C.JEGATHEESAN 2Mr. Mohammed Isaq 3Mr. Naveen Raj
267.	Performance and Evaluation of a Mini Flash Dryer 1. Mr. C.JEGATHEESAN 2Mr. M. Aravinth 3Mr. I.S. Joyal
268.	Investigation of Tribological Behavior of A356 and A356 Hybrid 1. Mr. C.JEGATHEESAN 2Mr. A Ramakkannan 3Mr. R Saravanan

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

269.	Design and Analysis of CO2 Scrubber for Boiler 1. Mr. THIRUNAVUKARASU. R 2Mr. R Gunaseelan 3Mr. M Karthik
270.	Aluminum Metal Matrix Composite with Si3N4 and Mg Reinforcement 1. Mr. THIRUNAVUKARASU. R 2Mr. P Sabarinathan 3Mr. R Shyam Sundar
271.	Forming Limit Diagram of Al 6061 using Single Point Incremental 1. Mr. THIRUNAVUKARASU. RMs. M ValarmathiMr. N
272.	Software Development for Optimal Selection of Cutting Parameters for Productive CNC Turning Operation 1. Mr. THIRUNAVUKARASU. R 2Mr. A. Christian yesudass 3Mr. L Karthick
273.	Formability Analysis of Al 5052 using Single Point Incremental Forming Method 1. Mr. THIRUNAVUKARASU. R 2Mr. A. Christian yesudass 3Mr. L Karthick
274.	Structural and Thermal Analysis of Disk Brake using Tungsten Carbide (WC) in Ansys 1. Mr.G DINESHWARAN 2Mr. A.S. Jeyaranjan 3Mr. K. Karthikayen
275.	Analysis of Mechanical Characteristics of Fiberglass & Foam Core 1. Mr.G DINESHWARAN 2Mr. V Dinesh Kumar 3Mr. S Mathiyarasan
276.	Experimentation and Analysis of Thermoplastic Designer Blocks 1. Mr.G DINESHWARAN 2Mr. S. Revanth 3Mr. Mohammed Burose
277.	Compressed Air Powered Vehicle 1. Mr.G DINESHWARAN 2 Mr. R. Parthiban 3Mr. M Ramachindran
278.	Design and Analysis of Connecting Rod using Composite Materials Al6061 Alloy and SiC 1. Mr.G DINESHWARAN 2 Mr. C Prasanth 3Mr. R Chelladurai

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main
Manikandam, Trichy-620 012

279.	Mechanical Properties Evaluation and Fabrication of Jute-Cotton-Glass Fiber Reinforced Polyester Composites 1. Mr. NAGARAJAN. P 2 Mr. D Muthurasu 3Mr. N Pradeep
280.	Performance Test of Compression Ignition Engine for Alternate Fuel 1. Mr. NAGARAJAN. P 2 Mr. R Karthick 3Mr. S Syed Kaja
281.	Design and Fabrication of Bagasse Dryer based on Free Falling Velocity of Wet Bagasse 1. Mr. NAGARAJAN. P 2 Mr. P Sugumaran 3Mr. T Arun Kumar
282.	Design and Analysis of Al 6061-Bronze Composite 1. Mr. NAGARAJAN. P 2 Mr. P Solai Raj 3Mr. M K Kathiravan
283.	Performance Evaluation of Direct-on-Line and Rotor Resistance Starting Methods for Synchronous Machines 1. Mr. NAGARAJAN. P 2 Mr. R Muralidharan 3Mr. R Dinesh Kumar
284.	Drilling Force Calculation and Mechanical Characterization of Al2O3 1. Mr. E.LEO PRAKASH 2 Mr. S. Muthukumar 3Mr. J Crown Meshak
285.	Characterization and Fabrication of Al6063-based Silicon Composites 1. Mr. E.LEO PRAKASH 2 Mr. M Mohandass 3Mr. M Praveen Kumar
286.	Design, Fabrication, and Analysis of Mechanical Characteristics and Drilling Characteristics of Bamboo Fiber Reinforced Polymer Composites 1. Mr. E.LEO PRAKASH 2 Mr. S Vincent Paul Raj 3Mr. B. Dinesh Kumar
287.	Topological Optimization of Connecting Rod 1. Mr. E.LEO PRAKASH 2 Mr. R Ram Prasath 3Mr. M Sairaj
288.	Analysis of IC Engine Using Alternate Biofuels 1. Dr K.BALAMURUGAN 2 Mr. V Sudharsan 3Mr. S Hariharan
289.	Development of Quinary High Entropy Alloy (HEA) Mechanical 1. Dr K.BALAMURUGAN 2 Mr. M Ganesh 3Mr. R Sudhakar

290.	Oil Extraction from Gulmohar Seeds - A Near-Fuel 1. Dr K.BALAMURUGAN 2 Mr. G. Venkatesh babu 3Mr. S Selvakumar
291.	Dehydration of Agro Products in Tunnel-Type Solar Dryer: Enhancing Preservation and Sustainability 1. Dr K.BALAMURUGAN 2 Mr. K Thamotharan 3Mr. K Wanten Berk
292.	Friction stir processing of aluminium alloys 1. Dr K.BALAMURUGAN 2 Mr. S Hariharan 3Mr. R Sudhakar
293.	Revolutionizing Energy Landscapes: The Ascendancy of Alternate Fuel Systems 1. Dr. A . ARULSELVAN 2 Mr. R Ram Prasath 3Mr. V Sudharsan
294.	Unraveling the Causes: Failure Analysis of Crank Shafts 1. Dr. A . ARULSELVAN 2 Mr. S.B. Saffar Hussain 3Mr. R. Karuppaiya
295.	Optimizing Sand Casting: Designing the Ideal Riser System 1. Dr. A . ARULSELVAN 2 Mr. M K Kathiravan 3Mr. N Manikandan
296.	Enhancing Automotive Safety: Addressing Blind Spots in Vehicles 1. Dr. A . ARULSELVAN 2 Mr. A.S. Jeyaranjan 3Mr. S Mathiyarasan
297.	Advancements in Welding Technology: Automatic Welding 1. Dr. A . ARULSELVAN 2 Mr. R Gunaseelan 3Mr. S Syed Kaja
298.	Effective Warm Start for the Online Actor-Critic Reinforcement Learning based mHealth Intervention 1. MS. KALAIVANI T[1], Abinaya R[2], Akila K[3]
299.	Efficient Reinforcement Learning via Initial Pure Exploration 1. MS. KALAIVANI T[1], Annie Shalom S[2], Arthi M[3]
300.	Reinforcement Learning in Rich-Observation MDPs using Spectral Methods 1. MS. KALAIVANI T[1], Azhagu Meena M[2], Devi

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

301.	Communications that Emerge through Reinforcement Learning Using a (Recurrent) Neural Network 1. MS. KALAIVANI T[1], Dhanalakshmi S[2], Hari Krishnan S[3]
302.	Functions that Emerge through End-to-End Reinforcement Learning The Direction for Artificial General Intelligence 1. MS. KALAIVANI T[1], Janani V[2], Jenifer C[3]
303.	Unsupervised Basis Function Adaptation for Reinforcement Learning 1. MS. KALAIVANI T[1], Jenifer S[2], Kesavamurthi M[3]
304.	Quantifying the Effects of Vehicular Driving Cycles on Air Quality 1. MS. KALAIVANI T[1], Kiruthika S[2], Maria Francis D[3]
305.	Influence of Optimal Distribution of Dampers on Structural Vibration Control 1. MS. KALAIVANI T[1], Ragavi A[2], Ruthramoorthy M[3]
306.	Autonomous Robot Navigation in Dynamic Environments 1. MS. KALAIVANI T[1], Sarmila M[2], Sumathi[3]
307.	Multiple Competencies in School Education as Necessary Preparations for Occupational Destinies: Static vs. Dynamic Functionalities 1. MRS. SUGASHINI T[1], Sarmila M[2], Thivya Priya R[3]
308.	An Insight into a Whole School Experience: The Implementation of Teaching Teams to Support Learning and Teaching 1. MRS. SUGASHINI T[1], Sumathi[2], Thivya Priya R[3]
309.	Building Vicarious Bridges through Colour Laboratories for Pupils with Visual Impairment 1. MRS. SUGASHINI T[1], Azhagu Meena M[2], Thivya Priya R[3]
310.	Equipping Students with Entrepreneurial Skills for Self Employment in Globalized World 1. MRS. SUGASHINI T[1], Sarmila M[2], Thivya Priya R[3]

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

311.	Challenges of Teacher Professional Development 1. MRS. SUGASHINI T[1], Sarmila M[2], Thivya Priya R[3,]
312.	Quantifying the Effects of Vehicular Driving Cycles on Air Quality 1. MRS. SUGASHINI T[1], Arjun v[2], Aishwarya m[3,]
313.	Influence of Optimal Distribution of Dampers on Structural Vibration Control 1. MRS. SUGASHINI T[1], Gowtham k[2], Dharshini a[3]
314.	Optimization and Evaluation of a Factory Layout Design Problem 1. MRS. SUGASHINI T[1], Dinesh kumar k[2], Dharshini a[3]
315.	Study of the Shallow Wake Characteristics of Emergent Slender Cylinders using DES 1. MRS. SUGASHINI T[1], Gowtham k[2], Arjun v[3]
316.	A Novel Feature Selection Method for Unsupervised Pattern 1. MRS. SUGASHINI T[1], Aishwarya m[2], Dharshini a[3]
317.	A Designing Conversational User Interface for Artificial Intelligence Devices 1. Mr.C.Arul[1], Maria Francis D[2], Aravindh samy p[3]
318.	Case Studies of a Project-Based Learning Course in Transdisciplinary Engineering Program 1. Mr.C.Arul[1], Hariharan n[2], Hema latha b[3]
319.	CFD Simulation of a Rotary Swing Chamber Machine 1. Mr.C.Arul[1], Hariharan n[2], Jegathiswari.d[3]
320.	Using the Operations Process chart as a Platform for Integrated Process Design 1. Mr.C.Arul[1], Kanagaraj k s[2], Dharshini a[3,]
321.	Big Data Opportunities: Prescriptive Analytics to Enhance Learning Programming in Higher Education 1. Mr.C.Arul[1], Joshi dayana k[2], Jegathiswari.d[3]

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

322.	Strength Evolution of Concretes Made with Supersulfated Binders based on Volcanic Materials Exposed to two Media 1. Mr.C.Arul[1], Neethimozhi a[2], Kanagaraj k s[3]
323.	Jordanian Pre-service EFL Teachers Perspectives about Phonological Awareness: Contributions to Reading Development 1. Mr.C.Arul[1], Neethimozhi a[2], Nithya p[3,]
324.	Polymer Modified Pervious Concrete 1. Mr.C.Arul[1], Ramya r[2], Priyanga.g[3]
325.	EnergyPlus vs. Monthly ISO 13790 for Israeli Climatic Zones 1. Mr.C.Arul[1], Sathasivam p[2], Sharvesh charan.s.a[3,]
326.	Technology Influencers and the Culture of Mobility: Experimenting Self-Ruling Floating Cities 1. Mr.C.Arul[1], Sathasivam p[2], Selvi margrate a[3]
327.	A Study on the Disposal and Efficient Re-use of Water Treatment Sludge Generated in a Household: A Review 1. Mr.C.Arul[1], Shalini p[2], Shanmuganathan p[3]
328.	An Empirical Study of Effective Promotion System based on Big Data Analysis and Machine Learning 1. Mr.C.Arul[1], Shalini p[2], Sugasini.g[3]
329.	The Role of Cloud, Green IT, and Data Science to Reduce Healthcare Costs and Combat Climate Change 1. Mr.C.Arul[1], Vigna sri s[2], Vaishnavi g[3]
330.	The Evaluation of the Manufacturing and Functions of Complex Knitted Fabrics 1. Mr.C.Arul[1], Vinothini s[2], Vijaya dharani k[3,]
331.	Electrochemical Healing Techniques for Concrete Reinforcement Restoration 1. Mr.C.Arul[1], Hariharan m[2], Sivasangari c[3,]

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

332.	How Big Data can help in Real-Time Anomalies Detection 1. Mr.S.Hussain[1], Hema latha b[2], Moorthi c[3]
333.	Synchro Software: Can be used to Enhance and Optimize the Performance of Urban Signalized Intersections with Queue Blockage? 1. Mr.S.Hussain[1], Muthaiya p[2], Neethimozhi a[3]
334.	Architectural Challenges in Designing Big Data Solutions in Support of Laser-Plasma Interaction Experimental Investigations 1. Mr.S.Hussain[1], Vaishnavi g[2], Nithya p[3]
335.	Best Practices for the Design Process for the ConstructionManager-as-General Contractor Delivery System 1. Mr.S.Hussain[1], Shalini K[2], Vigna sri s[3]
336.	A Risk-based Logistic Regression Decision Support Model for the Selection from The World Bank Lending Instruments 1. Mr.S.Hussain[1], Harish.V[2], Aswini. M[3]
337.	Review of Trends in System Resilience for Sustainable Future Transport in Megacities 1. Mr.S.Hussain[1], VIGNESHWARI . N[2], VINOTHINI.S[3]
338.	A New Demerit Control Chart for Monitoring the Quality of Multivariate Poisson Process 1. Mr.S.Hussain[1], VASUKI.S[2], VIGNESH.M[3]
339.	Clustering Techniques for Comparative Analysis of Load Factor Profiles 1. Mr.S.Hussain[1], SUJITHA.R[2], SURIYA PRIYA.M[3],
340.	Designing Solution for Healthcare: A Case Study Combining Big Data and Blockchain Technologies 1. Mr.S.Hussain[1], SRIVIDHYA.K[2], STELLA MARY.F[3]
341.	Turkish Red Crescent's Blood Collection and Blood Products Distribution Logistics Network Design 1. Mr.S.Hussain[1], SNEGA.K[2], SOWMIYA.D[3]

PRINCIPAL
Indira Ganesan College of Engineer
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

342.	Mass Preservation of Original Written Cultural Artefacts from the 20th Century though Functionalized Nanofibres 1. Mr.S.Hussain[1], SELVAKUMAR.R.K [2], SIVASANKARI.P [3]
343.	Biomechanical Comparison of Parallel, Posterior, and Y Configuration for Treating Comminuted Distal Humerus Fractures 1. Mr.S.Hussain[1], SELVAKUMAR.R.K [2], SIVASANKARI.P
344.	Influence of Carbonation on the Performance of Reactive MgO Cement-based Concrete Mixes **1.** Mrs.S.Poongkodi[1], Nivedha s[2], Kanagaraj k s [3,]
345.	Quantifying Interactions in Manufacturing using Regression Tree Models – A Useful Inductive Step for Planning a Designed Experiment **1.** Mrs.S.Poongkodi[1], Vigna sri s[2], Sathasivam p
346.	SELF REGULATING TRAFFIC LIGHT CONTROL USING RFID AND MACHINE LEARNING ALGORITHM 1. Mrs.S.Poongkodi[1], Sugasini.g[2], Inbaraj a[3]
347.	AN EFFICIENT AVIATION MODEL FOR AIR TRANSPORT REGULATION USING NOSQL 1. Mrs.S.Poongkodi[1], Sugasini.g[2], Maria Francis D[3]
348.	RAINFALL PREDICTION USING STACKING METHOD 1. Mrs.S.Poongkodi[1], NAVEEN .A[2], PRAKASH.M[3]
349.	RALZHELP: SYSTEM TO VERIFY THE WELL-BEING OF ALZHEIMER PATIENT 1. Mrs.S.Poongkodi[1], ISWARYA.B [2], GOKUL.R
350.	EFFICIENT LOAD DISTRIBUTION ACROSS VIRTUAL MACHINES USING MAP REDUCE IN PRIVATE CLOUD ENVIRONMENT 1. Mrs.S.Poongkodi[1], ARUL JOTHI . V[2], AJEESH.M [3]

351.	A SURVEY OF MACHINE LEARNING ALGORITHMS 1. Mrs.S.Poongkodi[1], Vasanth D [2], Rabin Singh X [3]
352.	IMPLEMENTING CRYPTOGRAPHIC IOT IN PATIENT- CENTERED NETWORK TO VESTIGE ALZHEIMER AND DEMENTIA PATIENT 1. Mrs.S.Poongkodi[1], Vishnu B [2], Naveen Kumar T [3]
353.	DESIGN AND FABRICATION OF UWB CIRCULAR SIERPINSKI GASKET FRACTAL ANTENNA 1. Mrs.S.Poongkodi[1], Tamilselvan T [2], Mahamuni R [3]
354.	SHIELDED ENCLOSURE MATERIAL AND THERE SHIELDING EFFECTIVENESS 1. Ms.J.Revathy [1], Sasikumar r [2], Yuvaraj s [3]
355.	WIDE BAND FREQUENCY ANTENNA USING FRACTAL STRUCTURE 1. Ms.J.Revathy [1], Sivakumar p [2], Abinash P
356.	SIGN LANGUAGE TRANSLATOR GLOVES 1. Ms.J.Revathy [1], Jeya stephen s [2], Ajith Kumar M[3,]
357.	IOT BASED AUTOMATION IN WASTE MANAGEMENT – INTELLIGENT BIN (I-BIN) 1. Ms.J.Revathy [1], Hariharan n [2], Dharshini a[3,]
358.	RFID BASED PUBLIC BUS TRACKING SYSTEM 1. Ms.J.Revathy [1], Hariharan n [2], Thivya Priya R[3]
359.	ALCOHOL DETECTION USING SMART HELMET SYSTEM 1. Ms.J.Revathy [1], RANJITH.T [2], Kanagaraj k s[3]

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Rd,
Manikandam, Trichy-620 012

360.	KENAF DECORTICATOR **1.** Ms.J.Revathy [1], ROHINI.M [2], SIVASANKARI.P [3]
361.	DESIGN OF A NEW CDMA BASED ENCODING/DECODING FOR ON-CHIP COMMUNICATION **1.** Ms.J.Revathy [1], RAJESWARI.K [2], JENIT KUMAR.A
362.	IOT BASED SMART PUBLIC DISTRIBUTION SYSTEM **1.** Ms.J.Revathy [1], JENIFER. M [2], KEERTHIGA.A [3]
363.	IMAGE PROCESSING BASED PRODUCTION FLAW DETECTION IN KNITTING **1.** Ms.J.Revathy [1], REVATHI.R [2], MARIYAMMAL.K
364.	A CHARGE CONTROLLER TECHNIQUES FOR SOLAR PV SYSTEM **1.** Ms.J.Revathy [1], Nirmala.N [2], MANIKANDAN.D [3]
365.	SMART IRRIGATION SYSTEM USING IOT AND IMAGE PROCESSING **1.** Ms.J.Revathy [1], DAYANA TAMILARASI.S [2], ELAKKIYA.G [3]
366.	CUSTOMER'S CHOICE BASED INGREDIENTS SELECTION AND MENU ORDERING SYSTEM **1.** Ms.A.Savariyamal Carolin A [1], Shalini p [2], Nivedha
367.	DESIGN OF BOOST INVERTER FOR SOLAR POWER BASED STAND ALONE SYSTEMS **1.** Ms.A.Savariyamal Carolin A [1], Ramya r [2], Sivasangari c [3]
368.	HIGH VOLTAGE DC GENERATION USING COCKCROFT WALTONMULTIPLIER CIRCUIT **1.** Ms.A.Savariyamal Carolin A [1], Manikandan n [2], Shanmuganathan p [3,]
369.	HUMAN DETECTION ROBOT **1.** Ms.A.Savariyamal Carolin A [1], Gowtham k [2], Dinesh kumar k [3]

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

370.	A SURVEY ON KCT CAMPUS FOR GREEN BUILDINGCERTIFICATION **1.** Ms.A.Savariyamal Carolin A [1], Hariharan n[2], Kiruthiga v
371.	ENERGY MANAGEMENT SYSTEM USING ANN BASED LP APPROACH 1. Ms.A.Savariyamal Carolin A [1], Priyanga.g[2], Neethimozhi a'
372.	VIRTUAL QUALITY TESTING OF PUMPS **1.** Ms.A.Savariyamal Carolin A [1], Jegathiswari.d[2], Mahendran s
373.	ENGINEERING, ENGLISH AND EFFECTIVE COMMUNICATION **1.** Ms.A.Savariyamal Carolin A [1], SUJITHA.R[2], Shalini
374.	ENHANCEMENT OF THE THERMAL EFFICIENCY IN THE DISTILLATION COLUMN 1. Ms.A.Savariyamal Carolin A [1], SIVASANKARI.P[2], ISWARYA.B
375.	AUTOMATIC IRRIGATION SYSTEM USING RPI – IOT 1. Ms.A.Savariyamal Carolin A [1], SIVASANKARI.P[2], ISWARYA.B[3]Associate
376.	FREQUENCY ERROR TIMING ANALYSIS IN PID CONTROLLER **1.** Ms.G.Mahalakshmi [1], Sasikumar r[2], Vigna sri
377.	EFFICIENT WIRELESS POWER TRANSFER USING FAR FIELD TECHNIQUE **1.** Ms.G.Mahalakshmi [1], Arun praveen raj a[2], Vinothini
378.	PROCESS AUTOMATION FOR pH MONITORING AND QUALITYCONTROL IN SUGAR INDUSTRY 1. Ms.G.Mahalakshmi [1], Arun praveen raj a[2], Vinothini
379.	THE STATUS OF WOMEN IN THE 21st CENTURY **1.** Ms.G.Mahalakshmi [1], Ramesh.M[2], Prasanth R

PRINCIPAL
Indra Ganesan College of Engineer
IG Valley, Madurai
Manikandam, Trichy-620 012

380.	METHODS OF EMERGING INSCRIPTION SKILLS 1. Ms.G.Mahalakshmi [1], SUJITHA.R [2], Velrajeswari M
381.	ICT IN ELT FOR A VIBRANT LEARNING 1. Ms.G.Mahalakshmi [1], Gwendolyn Rosetta.G [2], Aswini. M [3]
382.	COPING STRESS WITH EMOTIONAL INTELLIGENCE 1. Ms.G.Mahalakshmi [1], JANSIRANI.K [2], MONISHA.A [3]
383.	UTILIZATION OF SLUDGE WASTE IN MANUFACTURING OF CONCRETE PAVER BLOCKS 1. Ms.G.Mahalakshmi [1], GAYATHRI.P [2], NAVEEN .A [3]
384.	ANALYSIS ON THE UTILIZATION OF BIODEGRADABLE NON WOVENS AS TOP LAYER FOR SANITARY NAPKINS 1. Ms.G.Mahalakshmi [1], DINESHKUMAR.G [2], Dharmaseelan
385.	LOW COST BIODEGRADABLE ARECAHUSK FIBRE FOR THE REMOVAL OF DIRECT DYE FROM EFFLUENT 1. Ms.G.Mahalakshmi [1], JENIFER. M [2], GANGA
386.	A CRITICAL REVIEW ON FRICTIONAL CHARACTERISTICS OF WOOL FIBRE 1. Ms.G.Mahalakshmi [1], ABINAYA.P [2], ARUN KUMAR.A [3]
387.	A CRITICAL STUDY ON IMPROVING PRODUCTIVITY AND LIVELIHOOD OF HANDLOOM WEAVERS 1. Mrs.B.Kiruthiga [1], Thivya Priya R [2], Aravindh samy p [3]
388.	EFFECT OF SUSTAINABLE BLENDED FABRICS FOR APPARELS 1. Mrs.B.Kiruthiga [1], DINESH.J [2], Ruthramoorthy M
389.	OPTIMISATION OF PROCESS PARAMETERS IN KENAF/ POLYPROPYLENE COMPOSITES IN COMPRESSION MOULDING 1. Mrs.B.Kiruthiga [1], AMUTHA.P [2], ARUL JOTHI . V [3]

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

390.	A STUDY ON THE INFLUENCE OF VARIOUS PROPERTIES IN FABRICS COMMONLY USED FOR A SAREE BLOUSE 1. Mrs.B.Kiruthiga [1], PARKAVI.A[2], MANIKANDAN.D[3]
391.	IMPLEMENTING, ENHANCING AND FABRICATION WITH NATURAL FIBRES IN HELMET 1. Mrs.B.Kiruthiga [1], Mahendran s[2], Arun praveen raj
392.	DEVELOPMENT OF BIODEGRADABLE ABSORBENT CORE FOR BABY DIAPERS FROM BANANA FIBRES 1. Mrs.B.Kiruthiga [1], KANIMOZHI.K[2], MANIKANDAN.D[3]
393.	COMPARATIVE STUDY OF NATURAL FIBRE COMPOSITE FOR TECHNICAL APPLICATION 1. Mrs.B.Kiruthiga [1], REVATHI.R[2], PARKAVI.A[3]
394.	IMPROVING THE EFFICIENCY OF CLUSTERING WITH DRIFTING CONCEPTS USING DIFFERENTIAL EVOLUTIONARY PARTICLE SWARM OPTIMIZATION ALGORITHM 1. Mrs.B.Kiruthiga [1], REVATHI.R[2], KANIMOZHI.K[3]
395.	A RECAPITALIZATION ON CRYPTOJACKING AND END TO END ANALYSIS OF RANSOMWARE ATTACKS 1. Mr.M.Raja[1], Vaishnavi g[2], Abinash P[3]
396.	A CRITICAL ANALYSIS OF LPWAN AND OTHER IOT CONNECTIVITY OPTIONS 1. Mr.M.Raja[1], Vijaya dharani k[2], Manikandan n[3]
397.	SALES PREDICTION FOR A MANUFACTURER 1. Mr.M.Raja[1], Sudhakaran c[2], Jeya stephen s
398.	SURVEY OF DEEP LEARNING ARCHITECTURES AND DIFFERENT TASKS OF OBJECT DETECTION 1. Mr.M.Raja[1], Dharshini a[2], PRIYADHARSHINI.M[3]

PRINCIPAL
Indra Ganesan College of Eng
IG Valley, Madurai Main
Manikandam, Trichy-620 012

399.	VARIOUS APPROACHES FOR RECOMMENDATION SYSTEM 1. Mr.M.Raja[1], Kesavamurthi M[2], Sumathi[3]
400.	VOICE NORMALIZATION AND AUDIO QUALITY ANALYSISIN CELLULAR CONFERENCE CALL MAINTENANCE 1. Mr.M.Raja[1], Kiruthiga v[2], Moorthi c[3]
401.	PSYCHIATRIC COUNSELLING WITH CHATBOTS 1. Mr.M.Raja[1], SIVASANKARI.P[2], SOWMIYA.D[3]
402.	SCALABLE IOT BASED HOME AUTOMATION SYSTEM 1. Mr.N.Karthikeyan[1], PARKAVI.A[2], PRAKASH.M[3]
403.	DE-NOISING MEDICAL IMAGES BY HYBRID FILTER IN WAVELET DOMAIN 1. Mr.N.Karthikeyan[1], DINESH.J[2], SRIVIDHYA.K[3]
404.	WEAKLY GENERALIZED CONNECTEDNESS IN INTUITIONISTIC FUZZY TOPOLOGICAL SPACES 1. Mr.N.Karthikeyan[1], Sudhakaran c[2], Sathasivam p[3]
405.	EXISTENCE OF SOLUTIONS OF FOREST DYNAMICS 1. Mr.N.Karthikeyan[1], Nivedha s[2], Manikandan n[3]
406.	NANO GENERALIZED-SEMI HOMEOMORPHISMS IN NANO TOPOLOGICAL SPACE 1. Mr.N.Karthikeyan[1], Selvi margrate a[2], Ramya r[3]
407.	BAYESIAN LEARNING OF ENSEMBLES WITH ECHO STATE NETWORK (BLE-ESN) FOR TEMPERATURE PREDICTION 1. Mr.C.Murugesan[1], Selvi margrate a[2], Nivedha s[3]

408.	SURVEY ON SECURITY OF INTERNET OF THINGS **1.** Mr.C.Murugesan[1], Moorthi c[2], Nivedha s[3]
409.	A STUDY ON NETWORK MANAGEMENT IN SOFTWARE DEFINED INTERNET OF THINGS (SDIOT) 1. Mr.C.Murugesan[1], Moorthi c[2], Sarmila M[3]
410.	A STUDY ON INVESTORS PREFERENCES TOWARDS MUTUAL FUNDS IN ERODE DISTRICT 1. Mr.C.Murugesan[1], Moorthi c[2], Kanagaraj k s[3]

PRINCIPAL
Indra Ganesan College
IG Valley, Madurai.
Manikendam, Trichy-

1. **FIELD TESTING AND REFINED LOAD RATING OF A LOAD-POSTED CONTINUOUS STEEL GRIDER BRIDGE**

[1] Mr R SIVASHANKAR, [2] Mr P VIGNESH, [3] VARSHINI B, [1]Associate Professor, [2] Assistant Professor, [3] U.G Student Department of civil engineering. Indra Ganesan College of Engineering, Trichy.

Abstract:

This study presents a systematic approach to assess and refine the load rating of a load-posted continuous steel girder bridge. The research integrates field testing techniques and advanced load rating methodologies to comprehensively evaluate the bridge's structuralperformance. Non-destructive testing, visual inspections, and refined load analysis are employed to identify potential deficiencies and enhance the accuracy of load-carrying capacity calculations. The study emphasizes the importance of dynamic load considerations and aims to provide insights for optimizing the safety and compliance of continuous steel girder bridges. The outcomes of this research contribute to the advancement of best practices in the assessment and enhancement of similar bridge structures.

Key Words: Continuous steel girder bridge, Field testing, Load rating, Structural performance, Non-Destructive testing, Load-posting.

2. **ANALYTICAL SHAPE-FINDING OF THE THREE-DIMENSIONAL WIND-RESISTANTROPE SYSTEM OF A SUSPENSION BRIDGE**

[1] Mr B SENTHIL KUMAR, [2] K RAVIKUMAR, [3] Mr M KALIRAJ, [1]Assistant Professor, [2] Assistant Professor Shivani Engineering College, [3] U.G Student Department of civil engineering. Indra Ganesan College of Engineering, Trichy.

Abstract:

This study presents an analytical approach for determining the three- dimensional shape of the wind-resistant rope system in a suspension bridge. The methodology integrates principles of structural mechanics, material science, and wind engineering to achieve an equilibrium configuration that minimizes the impact of wind loads. The model considers the complex interaction between the bridge structure and dynamic wind forces, incorporating iterative analyses and optimization techniques. The study emphasizes the importance of accurate wind load considerations, material properties, and validation against experimental data. The developed analytical framework offers a comprehensive tool for engineers and researchers to assess and enhance the stability and safety of suspension bridges under varying wind conditions.

Key Words: Suspension Bridge, Wind-Resistant Rope System, Analytical Shape-Finding, Three-Dimensional Analysis, Structural Mechanics, Wind Engineering, Finite Element Method, Material Properties, Wind Load, Equilibrium Configuration, Optimization, Bridge Stability, Computational Fluid Dynamics, Experimental Validation.

PRINCIPAL
Indra Ganesan College of En
IG Valley, Madurai Main
Manikandam, Trichy-620 01

3. EXPERIMENTAL STUDY OF TRAPEZOIDAL-SHAPED STEEL FORM DECK COMPOSITE SLAB AND VERIFYING THE M-K CONSTANTS

[1]Mr S RAMALINGAM, [2] BELIN JUDE, [3] Mr M KALIRAJ, [1] Assosciate professor, [2] Assistant professor MIET Engineering College, [3] Assistant professor. Indra Ganesan College of Engineering, Trichy.

Abstract:
This experimental study investigates the structural behavior of a trapezoidal- shaped steel form deck composite slab system widely utilized in the construction industry. The primary objective is to conduct a comprehensive analysis of the system's performance, focusing on the verification and refinement of Moment-Curvature (M-K) constants that playa crucial role in predicting and understanding the composite slab's response to various loading conditions. The experiments involve assessing the load-carrying capacity, deformation characteristics, and failure modes of the trapezoidal steel form deck composite slab through a series of controlled laboratory tests. The study aims to provide valuable insights into optimizing the design and construction of composite slabs, enhancing structural efficiency, and ensuring safety in real-world applications.

Key Words: Trapezoidal Steel Form Deck, Composite Slab, Moment-Curvature Constants, Experimental Study, Structural Performance, Load-Carrying Capacity, Deformation Characteristics, Construction, Building Materials, Structural Engineering, Moment-Curvature Analysis, Design Optimization.

4. VERTICAL CLEARANCE ASSESSMENT FOR HIGHWAY BRIDGES BASED ON MULTISENSOR FUSION SIMULTANEOUS LOCALIZATION AND MAPPING

[1]Ms VEENA SURESH, [2] VINITHA P, [1] Assistant professor, [2] Assistant professor Sudharsan Engineering College. Indra Ganesan College of Engineering, Trichy.

Abstract:
Ensuring safe vertical clearance for vehicles passing beneath highway bridges is paramount in modern transportation infrastructure. This paper presents a novel approach to Vertical Clearance Assessment for Highway Bridges utilizing Multisensor Fusion Simultaneous Localization and Mapping (SLAM). The integration of data from diverse sensors, including LiDAR, cameras, and radar, enables a comprehensive understanding of thebridge environment not only enhances the accuracy of vertical clearance measurements but also facilitates proactive management of potential clearance issues. The proposed system demonstrates promising results in improving the safety and efficiency of highway transportation.

Key Words: Vertical Clearance Assessment, Highway Bridges, Multisensor Fusion, Simultaneous Localization and Mapping (SLAM), LiDAR, Cameras, Radar, TransportationInfrastructure, Vehicle Safety, Real-time Assessment, Sensor Integration, Dynamic Clearance Management.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Ma
Manikandam, Trichy-620 014.

5. **IMPACT OF GRAPHENE ON MICROSTRUCTURE AND COMPRESSIVE STRENGTH OF CEMENT MORTARS UTILIZING TWO DIFFERENT DISPERSION METHODS**

[1]Mr P VIGNESH, [2] Mr R SIVASHANKAR, [3] DINESH NR, [1] Assistant professor, [2] Associate professor, [3] U.G Student Department of civil engineering. Indra Ganesan College of Engineering, Trichy.

Abstract:

This study investigates the impact of graphene on the microstructure and compressive strength of cement mortars employing two distinct dispersion methods. Graphene, a two-dimensional nanomaterial, holds immense potential for enhancing the mechanical properties. The microstructure is examined using advanced imaging techniques, and compressive strength tests are conducted to assess the material's mechanical performance. Comparative analysis between the two dispersion methods offers insights into the optimal research in nanomaterial-enhanced construction materials and provide valuable information for the development of high-performance cement-based composites.

Key Words: Graphene, Cement Mortars, Microstructure, Compressive Strength, Nanomaterials, Dispersion Methods, Construction Materials, Two-Dimensional Materials, Reinforcement, Advanced Imaging, Nanotechnology, Building Technology.

6. **EXPERIMENTAL STUDY OF TRAPEZOIDAL-SHAPED STEEL FORM DECK COMPOSITE S LAB**

[1]Mr M KALIRAJ, [2]MANOJ AIRNEST, [3]MATHAN KUMAR, [1] Assistant professor, [2] U.G Student Department of civil engineering. Indra Ganesan College of Engineering, Trichy.

Abstract:

This experimental study delves into the performance characteristics of trapezoidal-shaped steel form deck composite slabs. Composite slabs, which integrate steelform decks with concrete, are widely used in modern construction for their structural efficiency and versatility. The trapezoidal shape of the steel form deck introduces unique geometric properties that influence the behavior of the composite system. The study involves a comprehensive experimental investigation, encompassing load-carrying capacity, deflection characteristics, and failure modes. Test specimens are subjected to varying loading conditions to simulate realistic scenarios encountered in practice. The results offer insights into the structural behavior and performance of trapezoidal-shaped steel form deck composite slabs, contributing valuable data to inform the design and construction of efficientand resilient building systems.

Key Words: Trapezoidal-Shaped Steel Form Deck, Composite Slab, Experimental Study, Load-Carrying Capacity, Deflection Characteristics, Failure Modes, Structural Behavior, Building Systems, Construction Materials, Concrete, Steel, Structural Efficiency.

PRINCIPAL
Indra Ganesan College of
IG Valley, Madurai
Manikandam, Trichy-

7. IMPROVING THE EFFICIENCY OF A NOVEL CONTROLLED-SLIDING-BASED ISOLATION SYSTEM FOR BRICK MASONRY STRUCTURES

[1]Ms C NIVEDHITHA, [2] JAMES ALPHONSE RAJ, [3]KAVITHA G, [1] Assistant professor, [2][3] U.G Student Department of civil engineering. Indra Ganesan College of Engineering, Trichy.

Abstract:

This study focuses on optimizing and enhancing the efficiency of a novel controlled-sliding-based isolation system tailored for brick masonry structures. Earthquake vulnerability in such structures necessitates innovative seismic mitigation strategies. The proposed controlled-sliding system aims to improve seismic resilience by mitigating the impact of ground motion through controlled sliding mechanisms. Experimental evaluations, coupled with numerical simulations, are conducted to analyze and enhance the system's efficiency under diverse seismic scenarios. Key parameters, including displacement control and energy dissipation, are scrutinized to refine the design and performance of the isolation system. The outcomes contribute to advancing the field of seismic retrofitting solutions for brick masonry structures, offering insights into strategies for preserving these structures during seismic events.

Key Words: Controlled Sliding, Isolation System, Efficiency Improvement, Seismic Retrofitting, Brick Masonry Structures, Earthquake Vulnerability, Structural Resilience, Experimental Evaluations, Numerical Simulations, Seismic Mitigation, Displacement Control, Energy Dissipation.

8. ANALYTICAL AND NUMERICAL MODELS FOR WIND AND SEISMIC DESIGN AND ASSESSMENT OF MASS TIMBER DIAPHRAGMS

[1]Ms G BHARANI, [2] Ms VEENA SURESH, [1][2]Assistant professor. Indra Ganesan College of Engineering, Trichy.

Abstract:

This research explores analytical and numerical models for the wind and seismic design and assessment of mass timber diaphragms. Mass timber structures are gaining prominence in modern construction, and understanding their dynamic behavior under wind and seismic loads is crucial for ensuring structural integrity and safety. The study involves the development and validation of analytical models to predict the diaphragm response to dynamic loads. Additionally, numerical simulations are employed to assess the performance under realistic wind and seismic scenarios. Key parameters such as lateral stiffness, damping, and response spectra are analyzed to provide comprehensive insights for thedesign and assessment of mass timber diaphragms. The findings contribute to advancing the knowledge and methodologies in the field of structural engineering, specifically focusing on the dynamic behavior of mass timber structures.

Key Words: Mass Timber Diaphragms, Wind Design, Seismic Design, Analytical Models, Numerical Models, Structural Engineering, Dynamic Behavior, Structural Integrity, Safety Assessment, Lateral Stiffness, Damping, Response Spectra.

PRINCIPAL
Indra Ganesan College
IG Valley, Madurai
Manikandam, Trichy-620

9. **EXPERIMENTAL EVALUATION OF A RETROFITTED EXTENSIVE GREEN ROOFMODULE ON A SLOPING GI SHEET ROOF IN A HUMID SUBTROPICAL CLIMATE**

[1]Ms E VINODHA , [2] Ms G BHARANI, [1,] [2] Assistant professor. Indra Ganesan College of Engineering, Trichy.

Abstract:

This experimental study assesses the impact of retrofitting an extensive green roof module on a sloping GI sheet roof in a humid subtropical climate. The research aims to understand the performance and benefits of the green roof system in this specific climatic context. Key parameters such as thermal regulation, stormwater management, and overall environmental sustainability are analyzed through experimental evaluations. The findings contribute valuable insights into the feasibility and effectiveness of retrofitting extensive green roofs in humid subtropical regions, providing essential information for sustainable building practices and retrofitting strategies.

Key Words: Extensive Green Roof, Retrofit, Sloping GI Sheet Roof, Experimental Evaluation, Humid Subtropical Climate, Thermal Regulation, Stormwater Management, Environmental Sustainability, Sustainable Building Practices.

10. **FIELD AND NUMERICAL EVALUATION OF LATERAL BENDING IN SKEWED STEEL I-GIRDER BRIDGES DURING DECK PLACEMENT**

[1]Mr R SIVASHANKAR, [2] Mr S RAMALINGAM, [3]VARSHINI B, [1,] [2] Associate professor, [3] U.G Student Department of civil engineering. Indra Ganesan College of Engineering, Trichy.

Abstract:

This research focuses on the field and numerical evaluation of lateral bending in skewed steel I-girder bridges during deck placement. Skewed bridges pose unique challenges during construction, and understanding the lateral bending behavior is crucial for ensuring structural integrity. The study combines field measurements and numerical simulations to comprehensively assess the lateral bending effects during the critical phase of deck placement. Various parameters, including skew angle, girder spacing, and construction sequences, are considered in both the field and numerical analyses. The findings provide valuable insights into the performance of skewed steel I-girder bridges, offering guidance for optimized design and construction practices.

Key Words: Steel I-Girder Bridges, Skewed Bridges, Lateral Bending, Deck Placement, Field Evaluation, Numerical Simulation, Structural Integrity, Construction Sequences, Girder Spacing, Skew Angle, Bridge Design, Structural Performance.

PRINCIPAL
Indra Ganesan College of E
IG Valley, Madurai M
Manikandam, Trichy-62

11. LIVE LOAD DISTRIBUTION FACTORS FOR STEEL PRESS-BRAKE-FORMED TUBGIRDER BRIDGES

[1]Mr B SENTHIL KUMAR, [2] AKLAYA B, [3] NANDHINI P, [1]Assistant professor, [2,] [3] U.G Student Department of civil engineering. Indra Ganesan College of Engineering, Trichy.

Abstract:

This research investigates live load distribution factors for steel press-brake- formed tub girder bridges. Press-brake-formed tub girders represent an innovative structural solution in bridge engineering, offering efficiency and cost-effectiveness. Live load distribution factors play a crucial role in assessing the load-carrying capacity of these bridges. The study involves both analytical and numerical analyses to determine distributionfactors under varying loading conditions. Factors such as span length, girder spacing, and deck configuration are considered in the assessment. The findings contribute to the advancement of design guidelines for press-brake-formed tub girder bridges, providing engineers with essential tools for accurate and efficient structural evaluation.

Key Words: Live Load Distribution Factors, Steel Bridges, Press-Brake-Formed Tub Girders, Structural Engineering, Bridge Design, Load-Carrying Capacity, Analytical Analysis, Numerical Simulation, Span Length, Girder Spacing, Deck Configuration, Structural Evaluation.

12. INVESTIGATE THE INCREASE IN LOAD RATING AND RELIABILITY OF A PRE-STRESSED CONCRETE BRIDGE WHEN UTILIZING FIELD-DERIVED DISTRIBUTION AND IMPACT FACTORS

[1]Mr S RAMALINGAM, [2]Mr M KALIRAJ, [3] VINITHA T, [1] Associate professor, [2] Assistant professor, [3] U.G Student Department of civil engineering. Indra Ganesan College of Engineering, Trichy.

Abstract:

This research aims to investigate the increase in load rating and reliability of a pre-stressed concrete bridge by utilizing field-derived distribution and impact factors. Load rating and reliability assessments are critical aspects of bridge evaluation for ensuring structural safety and optimizing transportation infrastructure. The study employs field data to derive accurate distribution and impact factors, and these are subsequently incorporated into the load rating calculations. The research explores the effects of the improved factors on load-carrying capacity and reliability. The findings provide valuable insights into enhancing the performance and safety of pre-stressed concrete bridges, contributing to more robust and efficient bridge management practices.

Key Words: Load Rating, Reliability, Pre-stressed Concrete Bridge, Distribution Factors, Impact Factors, Structural Safety, Bridge Evaluation, Transportation Infrastructure, Field Data, Load-Carrying Capacity, Bridge Management.

PRINCIPAL
Indra Ganesan College of
IG Valley, Madurai
Manikandam, Trichy-620 012

13. SOFTENED MEMBRANE TORSIONAL MODEL FOR GFRP-REINFORCED CONCRETEBRIDGE BOX GIRDERS

[1]Ms VEENA SURESH, [2] Mr P VIGNESH, [3] JAGANATH A, [1],[2] Assistant professor, [3] U.G Student Department of civil engineering. Indra Ganesan College of Engineering, Trichy.

Abstract:

This research presents a softened membrane torsional model for GFRP-reinforced concrete bridge box girders. Fiber-reinforced polymer (FRP) materials, particularly Glass Fiber Reinforced Polymer (GFRP), are gaining prominence in bridge construction due to their unique mechanical properties. Torsional behavior is a critical aspect of box girders, and traditional models may not fully capture the influence of GFRP reinforcement. The proposed softened membrane torsional model integrates the specific characteristics of GFRP to improve accuracy in predicting torsional response. Both analytical and numerical methods are employed to validate the model, and the findings offer insights into the torsional

behavior of GFRP-reinforced concrete bridge box girders, enhancing design methodologies for sustainable and durable infrastructure.

Key Words: Softened Membrane Torsional Model, GFRP-Reinforced Concrete, Bridge Box Girders, Fiber-Reinforced Polymer, Torsional Behavior, Structural Modeling, Analytical Methods, Numerical Simulation, Bridge Construction, Sustainable Infrastructure, Structural Design.

14. VERTICAL CLEARANCE ASSESSMENT FOR HIGHWAY BRIDGE BASED ONMULTISENSOR FUSION SIMULTANEOUS LOCALIZATION AND MAPPING

[1] DINESH NR, [2] DINESH S, [1],[2] U.G Student Department of civil engineering. Indra Ganesan College of Engineering, Trichy.

Abstract:

This study proposes a comprehensive approach for vertical clearance assessment for highway bridges based on multisensor fusion simultaneous localization and mapping (SLAM). Ensuring adequate vertical clearance is critical for safe and efficient transportation infrastructure. The integration of multiple sensors, such as LiDAR, cameras, and radar, facilitates a holistic understanding of the bridge environment. Simultaneous localization and mapping techniques enable real-time mapping and tracking of the bridge structure and surrounding objects. The research includes both experimental and numerical components to validate the proposed methodology. The outcomes aim to enhance the accuracy and reliability of vertical clearance assessments, contributing to improved safety standards in highway bridge design and management.

Key Words: Vertical Clearance Assessment, Highway Bridges, Multisensor Fusion, Simultaneous Localization and Mapping (SLAM), LiDAR, Cameras, Radar, Transportation Infrastructure, Safety Standards, Real-time Mapping, Bridge Design, Multisensor Integration.

PRINCIPAL
Indra Ganesan College of Engin
IG Valley, Madurai Main Re.
Manikandam, Trichy-620 012

15.   **FIELD AND NUMERICAL EVALUATION OF LATERAL BENDING IN SKEWARD STEEL I-GIRDER BRIDGES DURING DECK PLACEMENT**

[1]Mr M KALIRAJ, [2] Ms R K RAJESHWARI, [1] Assistant professor,[2] Assistant professor JJ College of Engineering. Indra Ganesan College of Engineering, Trichy.

Abstract:

This research focuses on the field and numerical evaluation of lateral bending in skewed steel I-girder bridges during deck placement. Skewed bridges present unique challenges during construction, and lateral bending is a critical aspect that influences structural integrity. The study combines field measurements with numerical simulations to comprehensively assess the lateral bending behavior during the crucial phase of deck placement. Various parameters, including skew angle, girder spacing, and construction sequences, are considered in both the field and numerical analyses. The findings contribute

valuable insights into the performance of skewed steel I-girder bridges, offering guidance for optimized design and construction practices.

Key Words: Skewed Steel I-Girder Bridges, Lateral Bending, Deck Placement, Field Evaluation, Numerical Simulation, Structural Integrity, Construction Sequences, Girder Spacing, Skew Angle, Bridge Design, Structural Performance.

16.   **LIVE LOAD DISTRIBUTION FACTORS FOR STEEL PRESS-BRAKE-FORMED TUBGIRDER BRIDGES**

[1]Ms C NIVEDHITHA, [2] Ms S ARUNKUMAR, [3] YOGALAKSHMI V, [1] Assistant professor, [2] Assistant professor Sudharsan Engineering College, [3] U.G Student Department of civil engineering. Indra Ganesan College of Engineering, Trichy.

Abstract:

This study investigates live load distribution factors for steel press-brake-formed tub girder bridges. Press-brake-formed tub girders have emerged as an innovative solution in modern bridge engineering due to their efficiency and cost-effectiveness. Accurate determination of live load distribution factors is crucial for evaluating the load-carrying capacity of these bridges. The research employs a combination of analytical methods and numerical simulations to ascertain distribution factors under varying loading conditions. Factors such as span length, girder spacing, and deck configuration are considered in the analysis. The outcomes contribute to the advancement of design guidelines for press-brake- formed tub girder bridges, providing engineers with essential tools for precise structural evaluation.

Key Words: Live Load Distribution Factors, Steel Bridges, Press-Brake-Formed Tub Girders, Structural Engineering, Bridge Design, Load-Carrying Capacity, Analytical Analysis, Numerical Simulation, Span Length, Girder Spacing, Deck Configuration, Structural Evaluation.

PRINCIPAL
Indra Ganesan College of Engir
IG Valley, Madurai Main R
Manikandam, Trichy-620 014

17.   IMPROVEMENTS IN CONVERGENCE ROBUSTNESS WITH A 2D-3D OF METHOD: APPLICATION OF GENETIC ALGORITHM TO COUPLED FLUTTER

[1]Ms G BHARANI, [2]AKALYA B, [1] Assistant professor, [2] U.G Student Department of civil engineering. Indra Ganesan College of Engineering, Trichy.

Abstract:
This research focuses on enhancing convergence robustness using a 2D-3D coupling method and applying genetic algorithms to address coupled flutter in aeroelastic

analyses. Flutter, a critical phenomenon in structural dynamics, demands accurate and robust numerical methods for reliable predictions. The integration of 2D and 3D models aims to improve computational efficiency without sacrificing accuracy. Genetic algorithms are employed to optimize the coupled system's parameters, enhancing convergence reliability. The study includes both theoretical formulations and practical applications, demonstrating the effectiveness of the proposed method in mitigating convergence challenges associated with coupled flutter. The outcomes contribute to advancing numerical techniques for aeroelastic analyses and improving the reliability of flutter predictions in complex structural systems.

Key Words: Convergence Robustness, 2D-3D Coupling Method, Genetic Algorithm, Coupled Flutter, Aeroelastic Analysis, Structural Dynamics, Numerical Methods, Computational Efficiency, Optimization, Convergence Challenges.

18.   INFLUENCE OF SIDEWALKS AND RAILINGS ON WHEEL LOAD DISTRIBUTION IN STEEL GIRDER BRIDGES

[1]Ms E VINODHA, [2]AYYAPPAN V, [3] KARTHIK P, [1] Assistant professor, [2] [3] U.G Student Department of civil engineering. Indra Ganesan College of Engineering, Trichy.

Abstract:
This study investigates the influence of sidewalks and railings on wheel load distribution in steel girder bridges. Sidewalks and railings are integral components of bridge design, impacting the overall structural behavior and load distribution. The research employs both analytical methods and numerical simulations to assess the effects of these features on the distribution of wheel loads. Various parameters, including sidewalk width, railing design, and pedestrian-induced loads, are considered in the analysis. The outcomes provide valuable insights into optimizing bridge design for enhanced load distribution, considering the interaction between vehicular and pedestrian loads. This research contributes to the advancement of design guidelines for steel girder bridges, promoting safety and efficiency in transportation infrastructure.

Key Words: Wheel Load Distribution, Steel Girder Bridges, Sidewalks, Railings, Bridge Design, Structural Behavior, Analytical Methods, Numerical Simulations, Pedestrian-Induced Loads, Transportation Infrastructure, Design Guidelines, Load Optimization.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

19. **UNIFORM BRIDGE ELEMENT IDENTIFICATION SYSTEM FOR DATABASEMANAGEMENT FOR ROADWAY BRIDGES**

[1]Mr R SIVASHANKAR, [2] Ms ANATHI K, [1] Associate professor Department of Civil Engineering,
[2] Professor JJ College of Engineering, Indra Ganesan College of Engineering, Trichy.

Abstract: This study proposes a Uniform Bridge Element Identification System for database management in roadway bridges. The effective management of bridge data is crucial for ensuring the safety, functionality, and longevity of transportation infrastructure. The proposed system establishes a standardized framework for the identification and categorization of bridge elements, facilitating efficient data organization and retrieval. The research integrates principles of uniformity and comprehensiveness to create a robust database management system applicable to a variety of roadway bridges. By providing a consistent and universal approach to bridge element identification, the system aims to streamline maintenance practices, enhance safety protocols, and contribute to the overall resilience of transportation networks.

Key Words: Uniform Bridge Element Identification System, Database Management, Roadway Bridges, Infrastructure Safety, Data Organization, Maintenance Practices, Transportation Resilience, Standardization, Bridge Element Categorization.

20. **CLOSURE TO "CABLE- STAYED BRIDGE CONCEPT FOR LONGER SPANS" BY UWE STAROSSEK**

[1]Mr B SENTHIL KUMAR, [2]RAMU S, [3] ABDUL AJEES, [1] Assistant professor, [2,3] U.G StudentDepartment of civil engineering. Indra Ganesan College of Engineering, Trichy.

Abstract: The cable-stayed bridge concept for longer spans, as discussed in the original work by Uwe Starossek, represents a significant advancement in bridge design within the field of structural engineering. This detailed abstract aims to provide a comprehensive overview of the key elements discussed in the closure to Starossek's article. The cable-stayedbridge design proposed by Starossek addresses the challenges associated with longer spans, presenting innovative solutions that contribute to the evolution of bridge engineering. The closure to the original article delves into a thorough analysis of the contributions made by Starossek, emphasizing the practical applications and real-world implications of the introduced concepts. Key aspects discussed in the closure include an in-depth exploration of the innovations embedded in the cable-stayed bridge concept. This involves a detailed examination of the structural engineering principles applied to achieve longer spans while maintaining. In summary, the closure to Starossek's article on the cable-stayed bridge concept for longer spans offers a detailed and insightful exploration of the innovations, practical applications, and research implications associated with this pioneering approach in bridge design. This comprehensive overview aims to deepen the understanding of the original work and stimulate ongoing discourse and exploration within the realm of structural engineering.

Key Words: Cable-Stayed Bridge, Longer Spans, Bridge Design, Structural Engineering, Closure, Innovations, Practical Applications, Research Implications.

PRINCIPAL
Indra Ganesan College of Eng:
IG Valley, Madurai Main t
Manikandam, Trichy-620 u14

21. SHEAR DISTRIBUTION IN SIMPLY-SUPPORTED CURVED COMPOSITE CELLULARBRIDGES

[1]Mr S RAMALINGAM, [2] ABDUL KHADER M, [3] ARAVIND M, [1]Associate professor, [2][3] U.G Student Department of civil engineering. Indra Ganesan College of Engineering, Trichy.

Abstract:

Cellular bridges, featuring cellular beams or decks, represent a unique and innovative approach to modern structural engineering. The research focuses on unraveling the complexities of shear distribution within the specific context of simply-supported curved composite cellular bridges. The investigative approach incorporates a combination of rigorous analytical methods and advanced numerical simulations. By utilizing these techniques, the study aims to model and analyze shear forces under diverse loading conditions, providing a thorough understanding of the shear distribution mechanisms in these specialized bridge configurations. The influence of curvature on shear distribution is a central aspect of the research, and the study systematically explores how geometric factors, material properties, and structural configurations interact to affect shear forces in simply- supported curved composite cellular bridges. The outcomes of this research hold significance for both theoretical understanding and practical applications. Engineers and researchers in structural engineering will benefit from the insights gained into the shear behavior of these distinctive bridge structures. The findings contribute essential knowledge that can be directly applied to the design, assessment, and optimization of simply-supported curved composite cellular bridges.

Key Words: Shear Distribution, Simply-Supported Curved Bridges, Composite Cellular Bridges, Structural Engineering, Cellular Beams, Analytical Methods, Numerical Simulations, Shear Forces, Loading Conditions, Curvature Effects, Bridge Design, Structural Assessment.

22. DETERIORATION ASSESSMENT AND REHABILITATION DESIGN OF EXISTING STEEL BRIDGE

[1]Ms VEENA SURESH, [2] VINITHA T, [3]VARSHINI B, [1]Assistant professor, [2][3] U.G Student Department of civil engineering. Indra Ganesan College of Engineering, Trichy.

Abstract:

The study employs a multifaceted approach, integrating visual inspections, non- destructive testing, and advanced structural analysis techniques to assess the extent and nature of deterioration in existing steel bridges. Visual inspections provide an initial understanding, while non-destructive testing methods offer in-depth insights into material conditions and potential vulnerabilities. Structural analysis is then applied to evaluate the overall health and performance of the bridge under various load scenarios. The assessment encompasses various factors contributing to deterioration, including material degradation and corrosion. A detailed examination of these factors is crucial in formulating precise and effective rehabilitation designs. The research addresses the challenge of preserving structural integrity while extending the service life of the steel bridge. The formulated rehabilitation designs are tailored to the specific needs identified during the assessment phase. These designs consider the unique characteristics of each bridge, taking into account factors such as the type and severity of deterioration, environmental conditions, and anticipated future loads. The detailed insights into deterioration assessment and the rehabilitation design process contribute to the development of best practices in managing and maintaining aging steel bridges, ensuring their continued safety and functionality.

Key Words: Deterioration Assessment, Rehabilitation Design, Existing Steel Bridges, Aging Infrastructure, Visual Inspections, Non-Destructive Testing, Structural Analysis, Service Life Extension, Material Degradation, Corrosion, Structural Integrity, Infrastructure Preservation.

PRINCIPAL
Indra Ganesan College of Engi...
IG Valley, Madurai Main
Manikandam, Trichy-620 0...

23. **IMPACT OF GRAPHENE ON MICROSTRUCTURE AND COMPRESSIVE STRENGTH OF CEMENT MORTARS UTILIZING TWO DIFFERENT DISPERSION METHODS**

[1]Mr M KALIRAJ, [2] NANDHINI P, [3] PRADEEP C, [1] Assistant professor, [2][3] U.G Student Departmentof civil engineering. Indra Ganesan College of Engineering, Trichy.

Abstract:

Graphene, a two-dimensional nanomaterial, exhibits unique properties that have shown promise in enhancing the mechanical and structural characteristics of cement-based materials. The study involves the incorporation of graphene into cement mortars through two distinct dispersion methods, and the subsequent evaluation of microstructural changes and compressive strength. The microstructure of the graphene-modified cement mortars is examined using advanced imaging techniques to assess the distribution and interaction of graphene within the matrix. Compressive strength tests are conducted to quantify the material's mechanical performance. A comparative analysis between the two dispersion methods aims to discern the most effective approach for achieving optimal graphene dispersion and subsequently improving the mortar's properties. The findings of this research contribute valuable insights into the nanomaterial-enhanced design of cement- based composites, with implications for both material science and construction engineering. Understanding the influence of graphene on microstructure and compressive strength provides a foundation for developing high-performance and sustainable cementitious materials.

Keywords: Graphene, Cement Mortars, Dispersion Methods, Microstructure, Compressive Strength, Nanomaterials, Construction Engineering, Material Science, Two-Dimensional Nanomaterials, Structural Enhancement.

24. **EVALUATION OF TOTAL STRESS IN W-FLANGE MEMBERS USING ULTRASONICSHEAR WAVES**

[1]Ms C NIVEDHITHA, [2] PRIYADHARSHINI A, [3] VIGNESHWARAN R, [1] Assistant professor, [2][3] U.G Student Department of civil engineering. Indra Ganesan College of Engineering, Trichy.

Abstract:

Assessing stress distribution in structural members is fundamental for maintaining the safety and integrity of engineered structures. The study introduces a novel approach utilizing ultrasonic shear waves to analyze the total stress in W-flange members, a common and critical component in structural engineering. The experimental methodology involves the controlled application of ultrasonic shear waves to the W-flange members, followed by a meticulous analysis of the reflected waves. By interpreting the characteristics of these reflected waves, the study aims to quantify and map stress variations within the W- flange members. This non-destructive testing technique provides a dynamic and real-time assessment of the stress distribution, offering a comprehensive understanding of the structural performance. The outcomes of this research are expected to contribute significantly to the field of structural health monitoring and assessment. The innovative use of ultrasonic shear waves in evaluating total stress within W-flange members introduces a sophisticated and accurate method for ensuring the longevity and reliability of structural elements. The findings have implications for enhancing safety protocols, optimizingstructural designs, and advancing non-destructive testing methodologies in structural engineering.

Key Words: Total Stress, W-Flange Members, Ultrasonic Shear Waves, Structural Health Monitoring, Non-Destructive Testing, Stress Distribution, Structural Engineering, Wave Reflection Analysis

PRINCIPAL
Indra Ganesan College of Eng
IG Valley, Madurai Main
Manikandam, Trichy-620 014

25. DESIGN METHODOLOGY FOR STRENGTHENING OF CONTINUOUS-SPAN COMPOSITE BRIDGES

[1] Ms G BHARANI, [2] KAVITHA G, [3] SINDHU S, [1] Assistant professor, [2,3] U.G Student Department of civil engineering. Indra Ganesan College of Engineering, Trichy.

Abstract:
The structural integrity of continuous-span bridges is paramount for ensuring safety and durability, and this study addresses the imperative need for a systematic approach to enhance their strength and performance. The proposed design methodology integrates various analytical techniques, thorough structural assessments, and the utilization of advanced materials to optimize existing continuous-span composite bridges. Key considerations encompass load-carrying capacity, fatigue resistance, and the implementation of innovative strengthening materials. By strategically combining these elements, the methodology aims to provide a versatile and adaptable framework for designing effective strengthening strategies. The research emphasizes the importance of addressing the unique challenges associated with continuous-span bridges, offering solutions that go beyond traditional rehabilitation methods. The inclusion of advanced materials and innovative design approaches aims to not only enhance the structural strength but also contribute to the overall resilience and sustainability of transportation infrastructure. The outcomes of this research contribute to the field of bridge engineering by providing a structured and practical methodology for the strengthening of continuous-span composite bridges. The adaptable nature of the proposed framework ensures its applicability to a range of bridge configurations, facilitating the optimization of existing structures and promoting the long-term viability of transportation infrastructure.

Key Words: Design Methodology, Strengthening, Continuous-Span Bridges, Composite Bridges, Structural Integrity, Load-Carrying Capacity, Fatigue Resistance, Advanced Materials, Rehabilitation, Infrastructure Optimization.

26. EXPERIMENTAL INVESTIGATION ON NONLINEAR FLEXURAL BEHAVIOR OF POST-TENSIONED CONCRETE BRIDGE GIRDERS WITH DIFFERENT GROUTING CONDITIONS AND PRESTRESS LEVELS

[1] Ms E VINODHA, [2] JAGANATH A, [3] JAGANATHAN J, [1] Assistant professor, [2,3] U.G Student Department of civil engineering. Indra Ganesan College of Engineering, Trichy.

Abstract:
Post-tensioning is a crucial technique in bridge construction, and understanding the nonlinear behavior of girders is essential for optimizing their design and performance. The study encompasses a series of controlled experiments, exploring the impact of different grouting conditions and prestress levels on the flexural response of concrete girders. The experimental setup involves subjecting post-tensioned concrete girders to various loading scenarios, simulating real-world conditions. The focus is on capturing the nonlinearities in the flexural behavior, with particular attention to the effects of grouting quality and prestressing force levels. Comprehensive measurements of deflections, strains, and cracking patterns are recorded and analyzed to provide insights into the structural response. The research outcomes aim to contribute valuable data for refining design methodologies and construction practices related to post-tensioned concrete bridge girders. Understanding howvariations in grouting conditions and prestress levels influence the flexural behavior enhances the ability to predict and control the performance of these critical structural elements. This research has implications for optimizing the design, durability, and overall reliability of post-tensioned concrete bridges.

Key Words: Experimental Investigation, Nonlinear Flexural Behavior, Post-Tensioned Concrete Bridge Girders, Grouting Conditions, Prestress Levels, Structural Response, Bridge Construction, Design Optimization, Structural Performance, Concrete Gird

PRINCIPAL
Indra Ganesan College of Engin.
IG Valley, Madurai Main
Manikandam, Trichy-62u

27. LONG-TERM BEHAVIOR OF CONTINUOUS PRECAST CONCRETE GIRDER BRIDGEMODEL

[1]Mr P VIGNESH, [2] MATHAN KUMAR, [3] RAMU S, [1] Assistant professor, [2,3] U.G Student Department of civil engineering, Indra Ganesan College of Engineering, Trichy.

Abstract:

Continuous precast concrete girder bridges are integral components of transportation infrastructure, and understanding their long-term behavior is critical for ensuring safety and sustainability. The study employs a combination of experimental and analytical methods to assess the bridge model's response over time. The experimental component involves subjecting the bridge model to realistic loading conditions, simulating the effects of traffic and environmental factors. Comprehensive measurements of deformations, strains, and other relevant parameters are collected and analyzed. The analytical aspect focuses on developing models to predict the long-term behavior of the bridge, considering factors such as creep, shrinkage, and material aging. Calibration of these models is performed using the experimental data, enhancing the accuracy of predictions.The research outcomes contribute valuable information for optimizing the design, maintenance, and rehabilitation strategies of continuous precast concrete girder bridges. Insights into long-term behavior aid in developing resilient infrastructure and ensuring that these bridges can withstand the challenges posed by extended service life and changing environmental conditions.

Key Words: Long-Term Behavior, Continuous Precast Concrete Girder Bridge, Structural Performance, Durability, Experimental Methods, Analytical Modeling, Creep, Shrinkage, Material Aging, Infrastructure Optimization, Bridge Maintenance.

28. PREDICTION OF CANCER BASED ON SEMI SUPERVISED OFSFRAMEWORK FOR MICRO ARRAY DATASETS USING BIG DATA ANALYSIS

1. Dr.P.Subharajam Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.
2. Balaji.G UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This research presents a novel approach for cancer prediction leveraging a Semi-Supervised Orthogonal Forward Selection (OFS) framework applied to microarray datasets. The methodology integrates Big Data analysis techniques to enhance the accuracy and efficiencyof cancer prediction models. By combining semi-supervised learning with feature selection, the proposed framework aims to improve the identification of relevant biomarkers for cancerdiagnosis, contributing to more effective and precise predictions in the realm of oncology.

KEYWORDS

Cancer Prediction, Semi-Supervised Learning, OFS Framework, Microarray Datasets, Big Data Analysis, Cancer Detection, Predictive Modeling, Machine Learning, Bioinformatics, Data Mining.

PRINCIPAL
Indra Ganesan College of Engin
IG Valley, Madurai Main it .
Manikandam, Trichy-620 012

**29. A DIRECT ANONYMOUS ATTESTATION SCHEME WITH EPID REVOCATION
CAPABILITIES AND SYBIL HOLE ATTACK PREVENTION**

1. Dr.P.Subharajam Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12,
2. Barani Kumar.M UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

The proposed research introduces a novel Direct Anonymous Attestation (DAA) scheme
incorporating Enhanced Privacy ID (EPID) revocation capabilities and robust defenses against Sybil
hole attacks. The scheme focuses on bolstering anonymity and security in attestation protocols,
ensuring efficient revocation processes within an EPID framework, and mitigating the risks
associated with Sybil attacks. The innovative features contribute to a more resilient and privacy-
preserving attestation system, addressing key challenges in contemporary security architectures.

KEYWORDS

Direct Anonymous Attestation, EPID Revocation, Sybil Attack Prevention, Anonymity Scheme,
Attestation Protocol, Identity Protection, Revocation Capabilities, Security Protocols, Privacy
Preservation, Cryptographic Protocols.

**30. DESIGN AN EFFICIENT CLUSTERING TECHNIQUE BASED ON FEATURE SUBSET
SELECTION IN HIGH DIMENSIONAL DATA**

1. Dr.P.Subharajam Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12,
2. Denima.A UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This study proposes a novel clustering technique tailored for high-dimensional data by integrating
feature subset selection. Focused on enhancing efficiency, the design aims to mitigate the curse of
dimensionality through a strategic reduction of features. Leveraging advanced clustering
algorithms and feature selection methods, the approach aspires to improve both computational
speed and clustering quality in high-dimensional datasets. The results showcase the effectiveness
of the proposed technique in achieving efficient and accurate clustering, making it a promising
solution for applications in diverse domains dealing with complex, high-dimensional data

KEYWORDS

Clustering, Efficient Design, Feature Subset, High-Dimensional Data, Technique, Data
Clustering, Dimensionality Reduction, Feature Selection, Cluster Efficiency, High-
Dimensional Clustering.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main R
Manikandam, Trichy-620 014

31. **HEURISTICS RULES FOR MINING HIGH UTILITY ITEM SETS**   **FROM TRANSACTIONAL DATABASE**

1Dr.P.Subharajam Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12,
2Dhurga Devi.M UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This research explores the application of heuristics in the efficient extraction of high utility item sets from transactional databases. The study focuses on developing heuristic rules that enhance the mining process, allowing for the identification of item sets with significant utility values. Through experimentation and analysis, the proposed heuristics aim to improve the scalability and performance of existing mining algorithms, providing a valuable contribution to the field of data mining and knowledge discovery.

KEYWORDS
Heuristics, Mining, High Utility, Item Sets, Transactional Database, Rules, Data Mining, Utility Mining, Association Rules, Database Analysis

32. **A BOUNDARY APPROXIMATION FOR CLASSIFICATION OF CRITICAL NUGGETS**

1Dr.P.Subharajam Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12,
2Giridharani.S UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT
This research introduces a novel boundary approximation method for the classification of critical nuggets. Focused on enhancing accuracy in identifying crucial elements, the proposed approach leverages advanced techniques to delineate precise boundaries between classes. Thestudy explores applications in various domains, demonstrating improved classification performance for critical nuggets, thereby contributing to the advancement of accurate and efficient decision-making processes.Top of Form.

KEYWORDS

Boundary Approximation, Classification, Critical Nuggets, Approximation Method, Machine Learning, Data Analysis, Boundary Detection, Feature Extraction, Criticality Assessment, Pattern Recognition

PRINCIPAL
Indra Ganesan College of En
IG Valley, Madurai Mai
Manikandam, Trichy-620 01

33. **AN EFFICIENT APPROACH TO IMPLEMENT IMAGE RETRIEVAL SYSTEM BASED ONIMAGE FEATURES**

3.

Mrs.D.Indra Devi Associate Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12, Gokila.R UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This paper presents an efficient approach to implementing an image retrieval system by leveraging advanced image features. The proposed system focuses on optimizing the retrieval process through the extraction and utilization of relevant image features. Through a combination of feature extraction techniques and a streamlined retrieval algorithm, the system achieves improved efficiency in searching and retrieving images from large datasets. The approach aims to enhance the overall performance and speed of image retrieval systems, making it a valuable contribution to the field of content-based image retrieval.

KEYWORDS

Image Retrieval, Efficient Approach, Implementation, Image Features, Retrieval System, Image Processing, Feature Extraction, Efficiency, Algorithm, Image Search.

34. **AUTOMATIC TRAFFIC MONITORING SYSTEM**

Mrs.D.Indra Devi Associate Professor/CSE Indra Ganesan College of Engineering, Manikandam,Trichy-12, Gomathi.A UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

The "Automatic Traffic Monitoring System" is a sophisticated technological solution designed for real-time monitoring and analysis of vehicular traffic. Utilizing advanced sensors, cameras, and data processing algorithms, the system automatically collects and analyzes traffic-related information, such as vehicle flow, speed, and congestion patterns. This system enhances traffic management by providing actionable insights to authorities, enabling efficient resource allocation, and improving overall road safety and transportationinfrastructure planning.

KEYWORDS

Traffic Monitoring, Automatic System, Surveillance, Traffic Analysis, Intelligent Transportation, Vehicle Tracking, Sensor Networks, Data Analytics, Smart Cities, Real-timeMonitoring.

35. DESIGN OF MULTIMODAL BIOMETRICS AUTHENTICATION USING FEATURE EXTRACTION

Mrs.D.Indra Devi Associate Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12, Hema.P UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This research focuses on the design of a multimodal biometrics authentication system, leveraging advanced feature extraction techniques. The study explores the integration of multiple biometric modalities to enhance security and accuracy in user authentication. Through the extraction of discriminative features from various biometric sources, the proposed system aims to achieve robust and reliable authentication. The research contributesto the advancement of biometric authentication technologies, addressing challenges and optimizing performance through innovative design and feature extraction methodologies.

KEYWORDS

Biometrics, Multimodal, Authentication, Design, Feature Extraction, Security, Recognition, Identity, Technology, Biometric Systems.

36. SECURE INTRUSION DETECTION SYSTEM AGAINST DENIAL OF SERVICE ATTACK USING FIRECOL

Mrs.D.Indra Devi Associate Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12
Hemasivasankari.S UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This paper presents a novel approach to enhance the security of intrusion detection systems (IDS) by integrating FireCol, a sophisticated firewall technology, to mitigate Denial of Service (DoS) attacks. The proposed Secure Intrusion Detection System (SIDS) leverages FireCol's advanced capabilities to detect and prevent malicious traffic, enhancing the overallresilience of the network against DoS attacks. Through extensive experimentation, the effectiveness and robustness of the system are demonstrated, highlighting its potential as a valuable tool in safeguarding network infrastructure from disruptive cyber threats.

KEYWORDS

Intrusion Detection, Denial of Service, Secure System, FireCol, IDS, DoS Attack, Cybersecurity, Network Security, Threat Detection, Intrusion Prevention.

PRINCIPAL,
Indra Ganesan College
IG Valley, Maniur
Manikandam, Trichy-

37. SHAPE IDENTIFICATION BASED ON SEGMENTATION IN VIDEO MOTION ANALYSIS

Mrs.D.Indra Devi Associate Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12,
Indhu.S UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This study focuses on shape identification in the context of video motion analysis through segmentation techniques. The research explores methods to accurately delineate and track shapes within dynamic video sequences, aiming to enhance the understanding of object behaviors over time. By employing advanced segmentation algorithms, the proposed approach aims to improve the precision of shape identification, contributing to more robust applications in areas such as surveillance, object recognition, and activity monitoring. The study underscores the significance of accurate shape analysis in video motion understanding and presents insights into the potential applications and implications of the developed segmentation-based identification methodology.

KEYWORDS

Shape Identification, Segmentation, Video Motion Analysis, Object Recognition, Computer Vision, Motion Tracking, Shape Detection, Image Processing, Video Analytics, Computer Graphics.

38. HEALTHCARE SOLUTION USING ANDROID DEVICES IN GLOBAL NETWORK

4. Mr.S.Vimalathithan Associate Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12,
5. Indira.K.J UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This study explores a healthcare solution leveraging Android devices within a global network. The proposed system harnesses the ubiquitous nature of Android devices to enhance healthcare accessibility, monitoring, and communication on a global scale. Key components include mobile health applications, real-time data transmission, and secure network protocols. The integration of Android technology aims to bridge gaps in healthcare delivery, empower patients, and foster efficient communication among healthcare professionals in diverse geographical locations. The study emphasizes the potential of this solution to revolutionize global healthcare, promoting a more interconnected and responsive system.

KEYWORDS

Healthcare, Android Devices, Global Network, mHealth, Telemedicine, Mobile Health,Health Technology, Connected Health, Digital Health, Remote Patient Monitoring.

PRINCIPAL
Indra Ganesan College of
IG Valley, Madur
Manikandam, Trichy-

39. RECOVERY OF CORRUPTED VIDEO FILES USING VIDEO CODES SPECIFICATION

6. Mr.S.Vimalathithan Associate Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12,

7. Kanaga Raj.P UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This study explores a novel approach for the recovery of corrupted video files through the utilization of video codec specifications. By delving into the intricacies of video coding standards, the research aims to develop efficient algorithms and techniques to reconstruct damaged video data. The proposed methodology seeks to enhance the robustness of video file recovery processes, offering a valuable contribution to the field of multimedia forensics and data restoration. The findings hold potential applications in various domains, including digitalforensics, video editing, and data recovery services.

KEYWORDS

Video Recovery, Corrupted Files, Video Codes, File Restoration, Data Reconstruction, VideoRepair, Error Correction, File Recovery, Codec Specifications, Multimedia Restoration.

40. NATURAL INTERACTION BETWEEN USER AND COMPUTER WITH EMBODIED CONVERSATIONAL AGENTS

Mr.S.Vimalathithan Associate Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12,

Keerthana.R.R UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

The abstract for "Natural Interaction Between User and Computer with Embodied Conversational Agents" explores the integration of embodied conversational agents (ECAs) to enhance the user-computer interaction experience. This study investigates the potential of ECAs to facilitate more natural and intuitive communication, examining their impact on userengagement and satisfaction. By analyzing user interactions, feedback, and preferences, the research aims to contribute insights into the design and implementation of ECAs for creating seamless and user-friendly computer interfaces. The findings shed light on the evolving landscape of human-computer interaction, emphasizing the significance of incorporating embodied conversational agents to achieve more authentic and satisfying user experiences.

KEYWORDS

Natural Interaction, User-Computer Interaction, Embodied Conversational Agents, HCI (Human-Computer Interaction), Conversational AI, User-Centric Computing, AI Interaction,Virtual Agents, Natural Language Processing, Embodied AI.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-820 012

41. HIERARCHICAL TRUST MANAGEMENT FOR DELAY TOLERANT NETWORKS USING STOCHASTIC PETRI NET FOR SECUREROUTING

a. Mr.S.Vimalathithan Associate Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12,

a. Keerthana.S UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This research proposes a novel approach to enhance security in Delay Tolerant Networks (DTNs) through the implementation of a Hierarchical Trust Management system. The framework employs Stochastic Petri Nets to model and analyze trust relationships, ensuring arobust and secure routing mechanism. By introducing a hierarchical structure, the system aims to mitigate trust-related vulnerabilities in DTNs, thereby addressing the unique challenges posed by intermittent connectivity and delays. The integration of Stochastic Petri Nets enhances the adaptability and responsiveness of the trust management system, contributing to the overall resilience and security of communication in DTNs.

KEYWORDS

Hierarchical Trust Management, Delay Tolerant Networks, Stochastic Petri Net, Secure Routing, Trust Modeling, Network Security, DTN Security, Petri Net Routing, DTN Trust Management,Trust-based Routing.

42. EFFECTIVE CONVEX OPTIMIZATION FOR CLIENT SERVER ASSIGNEMNT PROBLEM USING NORMALIZED CUTS ALGORITHM

Mr.S.Vimalathithan Associate Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12,

Mani Kandan.A UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This study proposes an effective convex optimization approach for addressing the client- server assignment problem. Leveraging the Normalized Cuts algorithm, the research focuseson enhancing the efficiency of the assignment process. By formulating the problem within aconvex optimization framework, the proposed method aims to optimize resource allocation and improve overall system performance. The application of the Normalized Cuts algorithm offers a novel perspective on addressing the assignment problem in a manner that is both effective and computationally efficient.

KEYWORDS

Convex Optimization, Client-Server Assignment, Normalized Cuts Algorithm, Effective Optimization, Assignment Problem, Server Allocation, Algorithmic Efficiency, Network Optimization, Cut-based Optimization, Client-Server Communication.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main r
Manikandam, Trichy-620

43. **AN IMPLEMENTATION OF INTELLIGENT SURVIVAL ROBOT FOR BOMB DETECTIONAND DIFFUSION**

Mr.C.Jegadeesan Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12,
Mani Kandan.P UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This paper presents the design and implementation of an intelligent survival robot for bomb detection and diffusion. The robot integrates advanced sensing technologies, machine learning algorithms, and autonomous navigation systems to efficiently locate and neutralize explosive devices in hazardous environments. The intelligent features of the robot enhance its adaptability to various terrains and improve its decision-making capabilities in real-time scenarios. The proposed system aims to enhance the effectiveness and safety of bomb disposal operations by leveraging cutting-edge technologies for autonomous robotic applications in security and defense.

KEYWORDS

Intelligent Navigation Robot, Autonomous Survival Robot, Bomb Detection, Bomb Diffusion, Implementation, Autonomous System, Safety Robotics, AI Technology, Security,Emergency Response

44. **DYNAMIC RESOURCE ALLOCATION AND COST MINIMIZATION IN CLOUD ENVIRONMENT USING GOSSIP PROTOCOL**

Mr.C.Jegadeesan Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12,
Meena.A UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This research explores the optimization of resource allocation and cost minimization in cloud environments through the utilization of a Gossip Protocol-based approach. The study focuses on dynamically adapting resource distribution to meet varying workload demands efficiently. By leveraging the Gossip Protocol, the system facilitates decentralized communication among nodes, enabling real-time information exchange for informed decision-making. The proposed methodology aims to enhance resource utilization, reduce operational costs, and improve overall performance in cloud computing environments.

KEYWORDS

Dynamic Resource Allocation, Cost Minimization, Cloud Environment, Gossip Protocol, Resource Management, Cloud Computing, Distributed Systems, Optimization, Scalability, Cost-Efficiency.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

45. **A NOVEL MESSAGE SCHEDULING FRAMEWORK FOR EPIDEMIC AND TWO HOP FORWARDING ROUTING IN HOMOGENEOUS DELAY TOLERANCE NETWORK**

Mr.C.Jegadeesan Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12, Murali.S UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This paper proposes a novel message scheduling framework tailored for epidemic and two- hop forwarding routing in a homogeneous delay-tolerance network (DTN). The framework aims to enhance communication efficiency by optimizing message dissemination strategies in scenarios where nodes have intermittent connectivity. Leveraging both epidemic and two-hop forwarding techniques, the proposed framework addresses the challenges posed by delay- tolerant environments. The study contributes to the advancement of message scheduling protocols in DTNs, fostering improved network performance and reliability.

KEYWORDS

Message scheduling, Novel framework, Epidemic routing, Two-hop forwarding, Homogeneous networks, Delay tolerance, Routing framework, Message prioritization, Communication efficiency, Network optimization

46. **ROGUE ACCESS POINT DETECTION IN WIRELESS NETWORK**

Mr.C.Jegadeesan Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12, Narkis Banu.A UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

With the proliferation of wireless networks, the vulnerability to security threats, particularly rogue access points, has become a significant concern. This study focuses on the development and evaluation of robust methods for the detection of rogue access points within wireless networks. Leveraging advanced signal processing techniques, machine learning algorithms, and anomaly detection mechanisms, our approach aims to identify unauthorized access points and mitigate potential security risks. The effectiveness of the proposed methods is demonstrated through rigorous testing in diverse wireless network environments, showcasing their potential to enhance the overall security posture of wireless infrastructures. This research contributes to the ongoing efforts in safeguarding wireless networks against unauthorized access, ensuring the integrity and confidentiality of sensitive data.
KEYWORDS

Rogue AP, Wireless Security, Network Detection, Access Point Threats, WLAN Security, Intrusion Detection, Wireless Rogue Detection, Network Anomalies, Wireless Threats, AP Security.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

47. MINING TREE BASED ASSOCIATION RULES FROM XML DOCUMENTS

Mr.C.Jegadeesan Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12, Nirosha.K UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

The paper "Mining Tree-Based Association Rules from XML Documents" explores a novel approach to extract association rules from structured data represented in XML format. The proposed method involves the construction of tree structures from XML documents and the subsequent application of association rule mining techniques to uncover meaningful patterns within the data. The study aims to enhance the analysis of hierarchical information, offering insights into relationships and dependencies that may exist in complex XML datasets. The effectiveness of the approach is demonstrated through experimentation, showcasing its potential for discovering valuable associations in XML-based information repositories.

KEYWORDS

Mining, Tree-based, Association rules, XML documents, Data mining, Tree structures, XMLparsing, Pattern extraction, Document analysis, Rule discovery.

48. TITLE : Implementation of SPAM filter in Online Social Network for Text Categorization

Mr.P.Suresh Pandi Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12, Pradeep.T UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

The implementation of a SPAM filter in an Online Social Network (OSN) for text categorization involves the development and integration of a sophisticated filtering system toidentify and mitigate spam content within the network. This project aims to enhance user experience and content quality by employing advanced text categorization techniques to differentiate between genuine and spam messages. The SPAM filter is designed to adapt and evolve in response to emerging spamming tactics, contributing to a more secure and trustworthy online social environment.

KEYWORDS

SPAM filter, Online Social Network, Text Categorization, Implementation, Social media, Anti-spam, Filtering technology, Cybersecurity, Content moderation, Online communication.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road,
Manikandam, Trichy-620 012

49.   **Fall Detection System for Elderly Person Using Smart HomeEnvironment**

Mr.P.Suresh Pandi Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12,
Praveen Kumar.V UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

The "Fall Detection System for Elderly Persons Using Smart Home Environment" is a technological
solution designed to enhance the safety and well-being of senior citizens. Leveraging smart home
sensors and advanced algorithms, the system aims to accurately detect and alert caregivers or
emergency services in the event of a fall. By seamlessly integrating into the daily living spaces of
elderly individuals, the system provides a non- intrusive and proactive approach to addressing the
challenges associated with fall incidents, thereby promoting timely assistance and potentially
reducing the severity of injuries.

KEYWORDS

Fall detection, Elderly care Emergency response, Smart home automation, Sensor technology,
Ambient intelligence, Elderly safety Activity monitoring, Health technology, Machine learning,
Wearable sensors, Gerontechnology.

50.   **FUZZY LOCAL GAUSSIAN MIXTURE MODEL FOR BRAIN MR IMAGE
SEGMENTATION**

Mr.P.Suresh Pandi Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12,
Prem Kumar.N UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

The proposed research introduces a novel approach for brain MR image segmentation through the
integration of a Fuzzy Local Gaussian Mixture Model (FLGMM). Leveraging the adaptability of
fuzzy logic and the spatial information captured by local Gaussian mixtures, the method aims to
enhance the accuracy and robustness of brain image segmentation. The FLGMM framework
incorporates fuzzy clustering to handle uncertainties in pixel assignments, while the local Gaussian
mixture model refines segmentation based on spatial context. Experimental evaluations demonstrate
the effectiveness of the proposed model in achieving precise and reliable segmentation results for
brain MR images, showcasing its potential for advancing medical image analysis and diagnosis.

KEYWORDS

Fuzzy LGM Model, Brain MRI Segmentation, FL-GMM for Image Segmentation, Fuzzy Local
Gaussian Model, Brain MR Segmentation, FL-GMM in Medical Imaging, Image Segmentation
with Fuzzy GMM, Brain MRI Analysis, Localized Gaussian Mixture Model, Fuzzy Clustering in
Brain MR Images

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-820 012

51. **HIGH DIMENSIONAL GLOBAL PATTERN SET MINING BASED ON GENETIC CONSTRAINT MECHANISM**

Mr.P.Suresh Pandi Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12, Priya.M UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This research proposes a novel approach for high-dimensional global pattern set mining using a genetic constraint mechanism. The method leverages genetic algorithms to efficiently explore the solution space, optimizing the extraction of significant patterns from complex, high-dimensional datasets. By integrating a genetic constraint mechanism, the algorithm enhances the convergence towards meaningful patterns, improving the overall mining process. The proposed technique demonstrates promising results in uncovering global patterns in intricate datasets, offering a valuable contribution to the field of pattern mining in high-dimensional spaces.

KEYWORDS
High-Dimensional Mining, Global Pattern Set, Genetic Constraints, Dimensional Patterns, Mining Mechanism, Genetic Mining, Global Patterns, Constraint Mechanism, High- Dimensional Patterns, Genetic Set Mining.

52. **TITLE : WEB BASED SECURITY ANALYSIS OF OPASS AUTHENTICATION SCHEMES USING MOBILE APPLICATION**

Mr.P.Suresh Pandi Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12, Priyanga.P UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This web-based security analysis focuses on evaluating the robustness of OPASS authentication schemes when implemented through mobile applications. The study employs comprehensive security testing methodologies to assess vulnerabilities, potential threats, and overall system resilience. Through rigorous analysis, the research aims to identify strengths and weaknesses in OPASS authentication, providing insights for enhancing the security posture of these schemes in the context of web-based applications with a particular emphasison mobile platforms.

KEYWORDS

Web Security, OPASS Authentication, Mobile App Security, Authentication Schemes, Web- Based Analysis, Security Assessment, Mobile App Authentication, OPASS Security, Web App Security, Authentication Security

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-820 012

53. **TITLE : Implementing a Device and Network Aware QOS Framework for Efficient Delivery of Mobile Streaming**

Mrs.A.Ramya Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12, Rajmohan.V UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This project involves the development and implementation of a Quality of Service (QoS) framework tailored for mobile streaming applications. The proposed framework is designed to be both device and network-aware, aiming to optimize the delivery of streaming content bydynamically adapting to varying network conditions and device capabilities. By considering factors such as device specifications and network performance in real-time, the framework seeks to enhance the overall streaming experience, ensuring efficient and seamless content delivery to mobile devices.

KEYWORDS
Device-QoS, Network-Aware, Mobile Streaming, QoS Framework, Efficient Delivery, Device Awareness, Network Optimization, Streaming Efficiency, Mobile QoS, DeliveryFramework

54. DETECTION OF COPY-MOVE FORGERY IN DIGITAL IMAGEBASED ON DCT

Mrs.A.Ramya Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12, Ramalakshmi.M UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This study focuses on the identification and localization of copy-move forgery in digital images using Discrete Cosine Transform (DCT). Copy-move forgery is a prevalent form of image tampering where a portion of an image is duplicated and pasted within the same imageto deceive viewers. The proposed method leverages the frequency domain characteristics of DCT to extract distinctive features and employs a robust matching algorithm to identify duplicated regions. Experimental results demonstrate the effectiveness of the approach in accurately detecting copy-move forgeries, offering a valuable contribution to digital image forensics and integrity verification.

KEYWORDS

Copy-Move Forgery, Digital Image, DCT (Discrete Cosine Transform), Forgery Detection, Image Forensics, DCT-based Detection, Copy-Move Analysis, Image Manipulation, Digital Forensics, Forgery Identification

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

55. **TITLE : RESTRUCTURING WEB SEARCH RESULTS USING PARAMETER ESTIMATION ALGORITHM**

Mrs.A.Ramya Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12, Ramya.K UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

The abstract for the study titled "Restructuring Web Search Results Using Parameter Estimation Algorithm" provides a concise overview of the research. The study explores the application of a parameter estimation algorithm to enhance the organization and relevance of web search results. By leveraging advanced algorithms, the research aims to optimize the ranking and presentation of search outcomes, thereby improving the overall user experience. The abstract highlights the significance of employing parameter estimation techniques in the context of web search result restructuring, offering a glimpse into the methodology and potential benefits of the proposed approach.

KEYWORDS

Web Restructure, Search Results, Parameter Estimation, Algorithm, Web Search, Restructuring, Results Optimization, Search Algorithm, Parameter Optimization, Web Results.

56. **TITLE : REDUCTION OF INTRUDERS IN CLOUD BASED SERVICES BY IMPLEMENTING VIRTUAL MONITORING MECHANISM (VMM)**

Mrs.A.Ramya Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12, Roselin Lithveena.J UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This study investigates the enhancement of security in cloud-based services through the implementation of a Virtual Monitoring Mechanism (VMM) to reduce the incidence of intruders. The research focuses on leveraging VMM to proactively monitor and analyze activities within the cloud environment, thereby fortifying defenses against unauthorized access and potential threats. The proposed solution aims to optimize the security infrastructure of cloud-based services, offering a proactive and effective approach to mitigating intruder risks and ensuring the integrity and confidentiality of sensitive data.

KEYWORDS

Cloud Security, Intruder Reduction, Virtual Monitoring, VMM Implementation, Cloud Services, Cybersecurity, Intrusion Prevention, Cloud Security Mechanism, Virtualization, Intruder Detection

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-820 012

57.   TITLE : EVALUATION AND PREDICTION OF AVAILABILITY OF AN ATOMIC WEB SERVICES USING LUCS MODEL

Mrs.A.Ramya Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12,
Sangeetha.I UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This study introduces the LUCS (Load, Utilization, Concurrency, and Scalability) model as a comprehensive framework for assessing and predicting the availability of atomic web services. The research focuses on evaluating the performance of web services by consideringkey factors such as load, resource utilization, concurrency, and scalability. Through the application of the LUCS model, the study aims to enhance the understanding of atomic web service availability and provide a predictive tool for optimizing service reliability. The findings contribute to the field of web service management, offering valuable insights for developers and administrators seeking to improve the availability of atomic web services in dynamic and resource-constrained environments.

KEYWORDS

Atomic Web Services, LUCS Evaluation, Atomic Services Prediction, Atomic Web Availability, LUCS Model Framework, Web Services, Atomic Services, Evaluation and Prediction, Service Availability, Web Service Evaluation

58.   PRESERVING PRIVACY IN TRUSTED DATABASE ACCESS

Ms.J.Jenifer Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12,
Saranya.M UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

"Preserving Privacy in Trusted Database Access" explores innovative strategies and technologies aimed at safeguarding sensitive information in database systems. Focusing on the intersection of privacy and trusted access, this study investigates cryptographic and access control mechanisms to mitigate privacy risks. By employing cutting-edge techniques, the research aims to enhance data security while maintaining trust in database interactions, thereby contributing to the ongoing discourse on safeguarding privacy in the context of trusted database access."

KEYWORDS

PrivacyDB, TrustedAccess, SecureDB, PrivacyPreserve, TrustDB, AccessGuard, SafeQuery, SecureData, PrivGuard, TrustPrivacyDB

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

63. **TITLE : MAXIMIZING ACCESS AVAILABILITY OF P2P FILE THROUGH REPLICATION IN MANET**

Ms.A.Getsyal Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12,
Aparna S UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This study explores the enhancement of access availability for peer-to-peer (P2P) file sharing in Mobile Ad Hoc Networks (MANETs) through the strategic implementation of replication. By employing replication techniques, the research aims to maximize the availability of files within the network, ensuring reliable access even in dynamic and challenging MANET environments. The proposed approach addresses the inherent uncertainties in MANETs, contributing to improved file accessibility and overall network performance.

KEYWORDS

P2P, File sharing, Replication, MANET, Access availability, Maximization, Mobile ad hoc networks, Distributed systems, Peer-to-peer, Replication strategies

64. **TITLE : REPLICA PLACEMENT FOR ROUTE DIVERSITY IN TREE BASED ROUTING WITH HASH TABLE**

Ms.A.Getsyal Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12,
Archana T UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This research focuses on optimizing replica placement for enhancing route diversity in tree- based routing with hash table structures. By strategically positioning replicas within the network, the study aims to improve data transmission efficiency and fault tolerance. The proposed approach leverages a combination of tree-based routing and hash table mechanismsto achieve an optimal distribution of replicas, thereby minimizing latency and enhancing the overall robustness of the network. The findings contribute to the advancement of replica placement strategies, particularly in the context of tree-based routing architectures, offering potential benefits for diverse applications in distributed systems and network design.

KEYWORDS

Replica Placement, Route Diversity, Tree-Based Routing, Hash Table, Routing Replica, Diversity Placement, Hash-Based Tree Routing, Replica Strategy, Route Optimization, Tree Structure Hashing

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

65. **TITLE : HANDLING FLOOD ATTACK IN DISTURPTION TOLERANTNETWORK BASED ON CLAIM VERIFICATION**

Ms.A.Getsyal Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12, Bakkiya V UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This study proposes a novel approach for mitigating flood attacks in disruption-tolerant networks (DTNs) through the implementation of a claim verification mechanism. In the face of unreliable and intermittent connectivity inherent in DTNs, the proposed method aims to enhance the network's resilience against malicious flooding by introducing a rigorous verification process for message claims. The effectiveness of the approach is evaluated in the context of its ability to selectively filter and discard illegitimate claims, thereby safeguarding the network from the adverse impact of flood attacks. The results demonstrate the potential of the claim verification strategy in bolstering the security of DTNs against disruptive flood- based threats.

KEYWORDS
Flood Defense, DTN Security, Claim Verification, Network Resilience, Anti-Flood Measures, Disruption Tolerant Networks, Flood Attack Mitigation, Claim-based Security,DTN Resilience, Verification Techniques

66. **TITLE : DYNAMIC FEDERATION OF PATIENT CENTRIC MODEL IN CLOUD USING USER CENTRIC APPROACH.**

Ms.A.Getsyal Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12, Banumathi D UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

The abstract for "Dynamic Federation of Patient-Centric Model in Cloud Using User-Centric Approach" outlines a novel approach to healthcare data management. The proposed system employs dynamic federation in the cloud, emphasizing a user-centric model to enhance patient-centered care. By leveraging cloud technology, the platform accommodates evolvinghealthcare needs and ensures efficient data sharing while prioritizing user preferences and security. This innovative framework strives to optimize healthcare services by fostering a dynamic and patient-centric approach within a cloud-based infrastructure.

KEYWORDS

Cloud Federation, Patient-Centric Model, Dynamic Federation, User-Centric Approach,Cloud Computing, Healthcare IT, Federated Systems, Dynamic Patient Data, Cloud Integration, User-Centric Cloud

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

59. **TITLE : SKETCH BASED ANNOTATION AND VISUALIZATION IN VIDEO**

Ms.J.Jenifer Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12,
Shabika Banu.B UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This study addresses the critical challenge of preserving privacy in trusted database access. As organizations increasingly rely on databases to store sensitive information, ensuring secure and private access becomes paramount. The research explores innovative techniques and methodologies to safeguard user privacy while maintaining the integrity and trustworthiness of database systems. Emphasizing the significance of trusted access in a data-driven era, the findings contribute valuable insights to the ongoing discourse on privacy preservation in the realm of database management.

KEYWORDS

Sketch-Annotation Video, Visual Sketching, Video Annotation, Sketch Visualization, Visua, Annotation, Video Sketching, Annotation Techniques, Sketch-Driven Visualization, Video Analysis, Visual Data Annotation.

60. **TITLE : IMAGE DENOISING BASED ON MULTISCALE DECOMPOSITION AND RECONSTRUCTION**

Ms.J.Jenifer Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12,
Subashree.M UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This study proposes a novel approach for image denoising utilizing multiscale decomposition and reconstruction techniques. The method involves decomposing the image into different scales, effectively isolating noise at various levels. Subsequently, a reconstruction process is employed to restore the denoised image, leveraging the information obtained from the decomposition stages. Experimental results demonstrate the efficacy of the proposed method in effectively reducing noise while preserving essential image details, highlighting its potential for applications in image processing and enhancement.

KEYWORDS

Image Denoising, Multiscale Decomposition, Reconstruction, Denoising Techniques, Image Processing, Noise Reduction, Multiresolution Analysis, Wavelet Transform, Signal Processing, Image Enhancement

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-820 012

61.   TITLE : E-BANKING USING UBISOAP: A SERVICE ORIENTEDMIDDLEWARE

Ms.J.Jenifer Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12, Subathradevi.C UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This study explores the integration of Ubiquitous SOAP (UBISOAP) as a service-oriented middleware in the context of electronic banking (e-banking). The research investigates the potential of UBISOAP to enhance the efficiency, interoperability, and security of e-banking systems. Through a comprehensive examination of the middleware's capabilities, the paper aims to provide insights into its practical implementation and its impact on the overall servicequality in the e-banking domain. The findings contribute to the evolving landscape of financial technology by assessing the viability of UBISOAP as a key component in the development and optimization of modern electronic banking platforms.

KEYWORDS

E-Banking, UBISOAP, Service Oriented, Middleware, Online Banking, Electronic Banking, SOA (Service-Oriented Architecture), SOAP (Simple Object Access Protocol), Financial Technology, Digital Finance

62.   TITLE : ENHANCING ENERGY EFFICEINCY IN WIRELESS SENSORNETWORK

Ms.J.Jenifer Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12, Suganya.S UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This study explores strategies to enhance energy efficiency in wireless sensor networks (WSNs). Focusing on optimizing energy consumption without compromising network performance, the research investigates innovative protocols, algorithms, and hardware solutions. Through a comprehensive analysis of existing challenges and emerging technologies, the study aims to contribute valuable insights to the field, ultimately promotingsustainable and prolonged operation of WSNs in diverse applications.

KEYWORDS
Wireless Energy Efficiency, Sensor Network Optimization, Energy-Aware WSN, Efficient Sensor Energy, WSN Energy Enhancement, Wireless Sensor Optimization, Energy-EfficientSensors, WSN Power Optimization, Wireless Network Energy

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

67. **TITLE : ITA: INNOUCOUS TOPOLOGY AWARNESS USINGSTRUCTURED TOPOLOGY PEER TO PEER SYSTEM**

Ms.A.Getsyal Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12, Dhanush S UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This study introduces ITA, a novel approach to achieve innocuous topology awareness inpeer-to-peer systems through the implementation of structured topology. By employing a carefully designed peer-to-peer system, ITA enhances network robustness and security without compromising privacy. The structured topology enables efficient communication while mitigating potential vulnerabilities. The findings suggest that ITA represents a promising solution for developing secure and resilient peer-to-peer networks in various applications.

KEYWORDS InnoTopo, StructAware P2P, TopoInnocuity, ITA-STP2P, PeerStructAware, TopoGuard P2P, InnoTopology, StructTopo P2P, ITA-ST Awareness, P2PStructGuard

68. **TITLE : PREDICTION OF ACCIDENT IN AN UNCERTAIN LOCATION USING ANDROID DEVICE**

Mrs. V. Nancy Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12, Dhivya B UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This study proposes a novel approach for predicting accidents in uncertain locations utilizing Android devices. The research leverages real-time data collection, sensor fusion, and machine learning algorithms to analyze diverse variables, such as GPS coordinates, accelerometer readings, and environmental conditions. By harnessing the capabilities of Android devices, the model aims to provide accurate and timely accident predictions, contributing to enhanced safety measures and proactive intervention strategies in dynamic and unpredictable scenarios.

KEYWORDS

Accident Prediction, Uncertain Location, Android Device, Safety Forecast, Mobile Accident Prediction, Location-based Safety, Android Safety Prediction, Uncertainty Modeling, Mobile Risk Assessment, Accident Forecasting

PRINCIPAL
Indra Ganesan College of Engineer
IG Valley, Madurai Main Road
Manikandam, Trichy-820 012

69. **TITLE : EMBEDDED TREE MINING FOR HIDDEN INTERACTIONPATTERN DISCOVERY**

Mrs. V. Nancy Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12, Divya R UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

The paper "Embedded Tree Mining for Hidden Interaction Pattern Discovery" introduces a novel approach to uncovering concealed interaction patterns within data sets through embedded tree mining. By employing advanced techniques in tree-based data representation,the proposed method aims to unveil subtle relationships and patterns that may be overlooked by traditional mining algorithms. The research contributes to the field by enhancing the ability to discover intricate interaction structures, thereby offering valuable insights for applications such as anomaly detection, fraud prevention, and pattern recognition in complexdatasets.

KEYWORDS

Embedded Tree Mining, Hidden Interaction Patterns, Tree-based Pattern Discovery, Embedded Pattern Mining, Interaction Pattern Detection, Tree Structure Analysis, Mining Hidden Patterns, Embedded Tree Exploration, Pattern Discovery in Embedded Trees, Interaction Pattern Mining

70. **TITLE : OPTIMAL ENTITY SEARCH USING COMPARATIVE MINING**

Mrs. V. Nancy Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12, Ganeshkumar A UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

"Optimal Entity Search Using Comparative Mining" is a research study that explores advanced techniques in entity search by leveraging comparative mining methods. The abstract highlights the development of an optimized search framework that enhances the efficiency and accuracy of entity retrieval from vast datasets. Through the integration of comparative mining, the proposed approach aims to provide users with more relevant andcontext-aware results, contributing to the advancement of information retrieval systems inhandling complex and dynamic datasets.

KEYWORDS

Entity Search, Comparative Mining, Optimal Search, Mining Entities, Comparative Search, Optimal Entity, Entity Mining, Search Optimization, Comparative Analysis, Entity Retrieval

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

71. **TITLE : P2P ASSISTED VIDEO SHARING IN ONLINE SOCIAL NETWORK**

Mrs. V. Nancy Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12,
Gobala Krishnan R UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

The abstract for "P2P Assisted Video Sharing in Online Social Networks" describes a novel approach to enhancing video sharing within online social networks (OSNs). The proposed system leverages peer-to-peer (P2P) technology to optimize the distribution of video content, thereby improving scalability and reducing the burden on centralized servers. By integrating P2P assistance into the video sharing process, the system aims to enhance the overall user experience in terms of speed, reliability, and resource efficiency. The abstract suggests that this innovative approach holds promise for addressing the challenges associated with video sharing in large-scale online social networks.

KEYWORDS

P2P Video Sharing, Social Network Sharing, Online Video Assistance, Peer-to-Peer Networking, Social Media Video P2P, Online Video Collaboration, P2P Social Sharing, Video Sharing Networks, Peer-Assisted Video Sharing, Online Social P2P

72. **TITLE : REDUCING ROUTING OVERHEAD IN MOBILE AD-HOC NETWORKS USING REBROADCAST PROBABILITY**

Mrs. V. Nancy Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12,
Gunasekar P UG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This study explores the optimization of routing efficiency in Mobile Ad-Hoc Networks (MANETs) by introducing a novel approach: Rebroadcast Probability. The proposed method aims to reduce routing overhead by strategically determining the likelihood of rebroadcasting messages. Through extensive simulations and analysis, the effectiveness of this technique is demonstrated in enhancing communication reliability while minimizing resource utilization in dynamic and resource-constrained mobile environments.

KEYWORDS

MANET, Routing Overhead, Rebroadcast Probability, Mobile Ad-Hoc Networks, Reducing Overhead, Ad-Hoc Routing, Rebroadcast Efficiency, MANET Optimization, Routing Performance, Mobile Network Efficiency

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main
Manikandam, Trichy-620 014

73. **TITLE : IMPLEMENTATION OF ROAD SIGN DETECTION, EXTRACTION AND RECOGNITION FOR INTELLIGENT VEHICLES**

Dr.G.Balakrishnan Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12, Padmadevi A PG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

The paper "Implementation of Road Sign Detection, Extraction, and Recognition for Intelligent Vehicles" addresses the development and application of a comprehensive system for automated road sign processing in the context of intelligent vehicles. The study focuses onthe integration of advanced computer vision techniques to detect, extract, and recognize road signs, contributing to the enhancement of intelligent transportation systems. The paper discusses the implementation details, performance evaluation, and potential applications of the proposed system, emphasizing its significance in improving road safety and facilitating autonomous driving technologies.

KEYWORDS

Road Sign Detection, Sign Extraction, Sign Recognition, Intelligent Vehicles, Implementation, Computer Vision, Traffic Signs, Image Processing, Vehicle Automation,Machine Learning

74. **TITLE : CONTRAST ENHANCEMENT IN FOG IMAGE**

Dr.G.Balakrishnan Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12, Panimalar V PG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This study proposes a novel approach for enhancing contrast in foggy images, aiming to improve visibility and image quality under adverse weather conditions. Leveraging advanced image processing techniques, our method effectively mitigates the impact of atmospheric phenomena, particularly fog, by enhancing the discernibility of objects and details.
Experimental results demonstrate the efficacy of the proposed contrast enhancement algorithm, offering promising outcomes for applications in diverse fields such as surveillance, autonomous vehicles, and remote sensing in foggy environments.

KEYWORDS

Fog Image, Contrast Enhancement, Image Processing, Visibility Improvement, Atmospheric Conditions, Image Enhancement, Foggy Scenes, Visual Clarity, Dehazing, Computer Vision.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main
Manikandam, Trichy-620 012

75. **TITLE : IMAGE ANALYSIS IN FACE RECOGNITION FOR HUMAN AGE**

Dr.G.Balakrishnan Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12,
Sankari R PG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This study explores the application of image analysis techniques in the realm of face recognition for estimating human age. Leveraging advanced computer vision algorithms, the research aims to enhance age prediction accuracy by scrutinizing facial features and patterns.The investigation delves into the intersection of image processing and age estimation, presenting a nuanced understanding of the challenges and opportunities in this domain. The findings contribute to the ongoing discourse on refining facial recognition systems, with a specific focus on age-related applications.

KEYWORDS

Image Analysis, Face Recognition, Human Age, Facial Age Estimation, Age Prediction, Facial Feature Extraction, Biometric Technology, Age Identification, Computer Vision, Facial Image Processing

76. **TITLE : DEVELOPMENT OF STEREO MATCHING METHODOLOGIES FOR BLIND NAVIGATION APPLICATION**

Dr.G.Balakrishnan Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12,
Shanmuga Priya M PG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This research focuses on the development of stereo matching methodologies tailored for blind navigation applications. The proposed methodologies leverage stereo vision techniques to enhance depth perception, enabling more accurate spatial awareness for individuals with visual impairments. The study explores innovative approaches to address challenges specific to blind navigation, aiming to improve real-time, reliable depth estimation. The outcomes of this research contribute to the advancement of assistive technologies, ultimately enhancing the autonomy and safety of visually impaired individuals during navigation.

KEYWORDS

Stereo Matching, Blind Navigation, Methodologies, Development, 3D Vision, Navigation Assistance, Depth Perception, Visual Impairment, Stereo Vision, Algorithm Design

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main R ··
Manikandam, Trichy-620 014

77. **TITLE : KEYPOINTS DETECTION AND FEATURE MATCHING FOR RECOGNITION OF MISSING PARTS IN FACE UNDER ILLUMINATIONCONDITION**

Dr.G.Balakrishnan Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12,
Suganya A PG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This research focuses on developing a keypoints detection and feature matching approach to enhance the recognition of missing parts in a face under challenging illumination conditions. The proposed method aims to accurately identify facial keypoints and efficiently match features, addressing issues related to varying lighting conditions. By improving the robustness of facial recognition systems in the presence of illumination challenges, the study contributes to advancements in missing parts detection within facial images, thereby enhancing the overall performance of face recognition technologies.

KEYWORDS

Keypoints, Feature Matching, Recognition, Missing Parts, Face, Illumination, Detection, Facial Recognition, Feature Detection, Illumination Conditions

78. **TITLE : PRESERVING LOCATION PRIVACY IN GEO SOCIAL APPLICATIONS**

Mrs.Hussain Bibi Sikkandar Associate Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12,
Aswini. M PG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

"Preserving Location Privacy in Geo-Social Applications" explores innovative techniques and strategies to safeguard users' location privacy within geo-social platforms. The study addresses the inherent challenges of sharing location-based information in social applications while emphasizing the importance of protecting individuals' sensitive data. By proposing and evaluating privacy-preserving mechanisms, the research aims to strike a balance between thesocial benefits of location-sharing and the need for robust privacy measures, contributing to the advancement of responsible and secure geo-social interactions."

KEYWORDS

Location Privacy, Geo-Social Apps, Privacy Preservation, Location-based Services, Geo-Privacy, Spatial Privacy, LBS Security, Geotagging Privacy, Anonymization Techniques, Location Data Protection

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main ·
Manikandam, Trichy-620 0 · 2

79. **TITLE : PASSWORD STEALING RESISTANT PROTOCOL USING QUICK RESPONSE CODE**

Mrs.Hussain Bibi Sikkandar Associate Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12,
Gwendolyn Rosetta.G PG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

The "Password Stealing Resistant Protocol using Quick Response Code" presents a novel approach to enhance security in authentication processes by leveraging Quick Response (QR) codes. The protocol aims to mitigate password theft risks by introducing a secure and user- friendly authentication mechanism through QR codes, thereby providing a resilient defense against common cyber threats. The abstract highlights the protocol's innovative features, emphasizing its potential to bolster the overall security of digital systems.

KEYWORDS

QRPSRP, PassGuardQR, SecureQR, QRShield, CodeLock, QRPassProt, SafeQR, GuardCode, ShieldQR, QRPassSecure

80. **TITLE : INFERRING USER SEARCH GOALS WITH FEEDBACK SESSIONS USING MOBILE ENVIRONMENT**

Mrs.Hussain Bibi Sikkandar Associate Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12,
Harish.V PG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This study explores the inference of user search goals within a mobile environment by leveraging feedback sessions. By analyzing user interactions and feedback during search sessions on mobile devices, the research aims to enhance our understanding of user intent andimprove the effectiveness of mobile search experiences. The investigation employs techniques to infer user goals through feedback mechanisms, shedding light on the nuances of user behavior in the mobile context and offering valuable insights for optimizing search functionalities on handheld devices.

KEYWORDS

User Goals, Search Inference, Feedback Sessions, Mobile Environment, User Intent, Search Behavior, Goal Inference, Mobile Feedback, User Search, Mobile Sessions

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

81.   **TITLE : A PROTECTED SYSTEM FOR ELDER PEOPLE USING SMART APPLICATION**

Mrs.Hussain Bibi Sikkandar Associate Professor/CSE Indra Ganesan College of Engineering, Manikandam,
Trichy-12,
Nirmala.N PG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This project introduces a safeguarded system designed to enhance the well-being of elderly
individuals through a smart application. The system integrates advanced technologies to provide a
secure environment, offering features such as health monitoring, emergency response, and daily
assistance. By leveraging smart devices and sensors, this solution aims to empower and protect
elderly users, enabling them to lead more independent and secure lives while staying connected with
caregivers and support networks.

KEYWORDS

ElderGuard, SafeSeniorApp, SeniorShield, SecureElderTech, ElderCareApp, SafeSeniorSystem,
GuardianApp, ElderProtect, SeniorSafetyTech, SafeElderlyApp

82.   **TITLE : OPTIMAL INFORMATION HIDING USING MOTION VECTOR OF VIDEOS**

Mrs.Hussain Bibi Sikkandar Associate Professor/CSE Indra Ganesan College of Engineering, Manikandam,
Trichy-12,
Anjaladevi J PG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This study explores the concept of optimal information hiding in videos by leveraging motion
vectors. Motion vectors, fundamental to video compression, are utilized to embed information
seamlessly within the video frames. The proposed approach aims to achieve efficient concealment
while minimizing perceptual impact. Through careful analysis and optimization, this method seeks
to strike a balance between robust information hiding and preserving video quality, making it a
promising avenue for secure and imperceptible data transmission within the realm of video content.

KEYWORDS

Motion Vector Hiding, Video Steganography, Optimal Information Concealment, Motion-Based
Data Secrecy, Video Encryption, Hidden Information in Motion, Motion Vector Steganalysis,
Concealed Data in Videos, Optimal Video Encryption, Motion-Driven Information Hiding

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

83. **TITLE : CONTENT HUB IN CLOUD WITH DCM AND THROTTLING MECHANISM**

Mrs.V.Sweetha Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12,
Abhinaya. R PG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This project explores the implementation of a Content Hub in the cloud, leveraging Digital Content Management (DCM) techniques and incorporating a Throttling Mechanism. The Content Hub serves as a centralized repository for diverse digital content, optimized for efficient storage, retrieval, and distribution. The integration of DCM ensures effective organization and accessibility, while the Throttling Mechanism enhances performance by regulating data flow. This solution aims to enhance scalability, reliability, and overall systemefficiency in cloud-based content management.

KEYWORDS

Cloud Hub, DCM, Throttling, Content Management, Cloud Content, Hub Mechanism, DCM in Cloud, Throttling Hub, Cloud-based Content, Content Distribution

84. **TITLE : MEDICAL ASSISTANCE SYSTEM WITH LOCATION BASED SERVICE IN SMART PHONES**

Mrs.V.Sweetha Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12,
Abirami.A PG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

The "Medical Assistance System with Location-Based Service in Smart Phones" is a innovative healthcare solution designed to enhance emergency medical response. This system leverages the capabilities of smartphones to provide timely and location-specific medical assistance. By integrating GPS technology, the system can accurately determine the user's location in case of an emergency and promptly connect them with the nearest healthcare facilities or emergency services. This real-time, location-based service aims to improve the efficiency of emergency response, potentially saving lives by reducing response times and ensuring swift access to medical help.

KEYWORDS

Medical Assist, Location-based Health, Smart Health App, Mobile Medic, Health GPS, MedLocate, Smart Aid, GeoHealth, MedNav, Location MedApp

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

85. **TITLE : SECURE ANALYSIS OF OS LEVEL VIRTUAL MACHINES**

Mrs.V.Sweetha Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12, Apporvavalli.A PG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

The abstract for "Secure Analysis of OS Level Virtual Machines" focuses on evaluating the security aspects of operating system (OS) level virtual machines. This study delves into the vulnerabilities and potential threats associated with OS-level virtualization, presenting an in- depth analysis of security measures and countermeasures. The research aims to enhance the understanding of the security landscape in OS-level virtualization, proposing strategies to fortify and safeguard virtualized environments against potential exploits. This work contributes valuable insights to the ongoing discourse on securing virtualized systems, offering practical recommendations for bolstering the resilience of OS-level virtual machinesagainst emerging security challenges.

KEYWORDS

Secure OS VMs, OS-level Security, Virtual Machine Analysis, Secure VMs, OS Security, VM Security, Analysis of Virtual Machines, Secure OS Analysis, Virtualization Security, OS VM Protection

86. **TITLE : AN EFFICIENT APPROACH FOR HAND GESTURE AND VOICE RECOGNITION USING SENSOR**

Mrs.V.Sweetha Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12, Aravinth.B PG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This study proposes an efficient approach for integrating hand gesture and voice recognition using sensor technology. The system aims to enhance human-computer interaction by seamlessly combining input modalities, thereby improving overall user experience.
Leveraging advanced sensors, the proposed approach focuses on accuracy and speed in recognizing both hand gestures and voice commands. The integration of these modalities is designed to provide a versatile and intuitive interface, opening new possibilities for applications in diverse fields such as human-machine interfaces, virtual reality, and smart environments. The research contributes to the advancement of multimodal interaction systems, offering a robust solution for real-time recognition and interaction.

KEYWORDS

GestureVoice Sensor, Efficient Recognition, Hand Gestures, Voice Recognition, Sensor Technology, Multi-modal Interaction, Gesture Voice Fusion, Sensor Fusion, Efficient HCI, Sensor-based Interaction

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

87.   **TITLE : DATA EXTRACTION FROM DEEP WEB USING AN EFFECTIVE METHOD**

Mrs.V.Sweetha Assistant Professor/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12,
Balaji.G PG Student/CSE Indra Ganesan College of Engineering, Manikandam, Trichy-12.

ABSTRACT

This study explores an efficient method for data extraction from the deep web, addressing the challenges associated with the hidden and dynamically generated content. The proposed approach employs advanced techniques to navigate through complex structures, overcome security barriers, and retrieve valuable information from sources not accessible through traditional web crawling methods. Through a systematic evaluation, the effectiveness of the method is demonstrated, showcasing its potential to enhance data mining capabilities and contribute to a comprehensive understanding of the vast and uncharted realm of the deep web.

KEYWORDS

DeepWeb Extraction, Data Mining, Effective Extraction, Web Scraping, Dark Web Data, Efficient Method, Hidden Data Retrieval, Deep Web Analytics , Unstructured Data Harvesting , Stealthy Data Extraction

88.   **DESIGN OF AREA EFFICIENT PARALLEL FILTER FOR TOLERATING ERROR**

Dr.N.Vaijayanthi P.Kamalaveni

Abstract:

Digital filters are mainly used in signal processing and communication systems where reliability is critical. To overcome this reliability problem fault tolerant filter implementations is used. As technology scales, it enables more complex systems that incorporate many filters. In those complex systems, it is common that some of the filters operate in parallel, for example, by applying the same filter to different input signals. Recently, a weight padding technique is proposed to achieve fault tolerance in the parallel filter. This approach uses each of the filter outputs as the equivalent of a bit in and ECC codeword. This method uses only two redundant filters i.e. all the inputs are added with different weights, so that if error occurs the redundant module recovers the faulted input to produce the exact output without affecting the system functionality. It recovers the output compare to existing. This scheme can also be used to provide more powerful protection using advanced ECCs that can correct failures in multiple modules.

Keywords : Error correction code (ECCs),Filters.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

89. **MICROCONTROLLER BASED INDUSTRIAL AUTOMATION FOR FAULT ALERT USING GSM NETWORK**

Dr.N.Vaijayanthi , S.Anushya

Abstract:

Today we live in the industrial age, where the number of industries as well as number of accidents in those industries have increased substantially. As a result, Security and automation has become a prime concern in our daily life. The approach to industrial automation and security system design is almost standardized nowadays. Our project aims to add to these standards using sensors and GSM technology at a user-friendly cost.

Keywords: Security, GSM, Arduino, Sensor Technology, SMS (Short Message Service), AT Commands.

90. **A HYBRID MAGNETO ELASTIC WIRELESS SENSOR FOR DETECTION OF FOOD adulteration**

Dr.N.Vaijayanthi

Abstract:

This paper investigates a step by step design procedure of a hybrid passive wireless sensor. The hybrid sensor measures both electrical (dielectric constant) and mechanical (viscosity) properties of liquid, providing a two-factor quality control. The hybrid sensor is based an inductor-capacitor (LC) resonant tank coupled with a magnetoelastic strip. The mechanicaland electrical resonances change as a function of viscosity and dielectric constant, respectively. Two different hybrid sensor designs are investigated, i) a parallel plate capacitor coupled with a separate amorphous ferromagnetic magnetoelastic strip (Metglas), and ii) a capacitor made using two parallel mounted magnetoelastic strips. The sensors are integrated as part of the "smart vial" making it field operable for food quality monitoring and control. Here, detection of adulteration in extra virgin olive oil is achieved by measuring the change in viscosity and dielectric constant for different adulteration levels. The real part of the dielectric constant for different liquid samples is measured in the frequency range of 3-24 MHz. The hybrid sensor is able to detect adulteration levels below 10% in volume. Theses sensors can be integrated with passive RFIDs for simultaneous measurement of multiple samples in an array format.

Keywords: Food Safety, Hybrid Sensors, Magnetoelastic Sensors, Oil Adulteration, Wireless Sening, LC Resonator

PRINCIPAL
Indra Ganesan College of Engin
IG Valley, Madurai Main
Manikandam, Trichy-620

91.   **ZIGBEE BASED SAFETY SYSTEM FOR MINE WORKERS**

Mr.B.G.Gopal, k.Jeyamani, D.Kowsalya

Abstract:

In this work, a safe Coal Mine Monitoring system which replaces the traditional coal mine monitoring systems which tend to be wired network systems. This play an important role incoal mine safe production. With continuous enlarging of exploiting areas and extension of depth in coal mine, many laneways become monitoring blind areas, where are lots of hidden dangers. Moreover, it is inconvenient to lay cables which are expensive and consume time. In order to solve the problems, we designed a coal mine safety monitoring system based on wireless sensor network, which can improve the level of monitoring production safety and reduce accident in the coal mine. Zigbee technology provides a direction for scientists who commit to solve the safety monitoring problems of coal mine. The purpose of this study is to propose a solution suitable to mine wireless communication, safety monitoring, give a proof to the further study

Keywords: Zigbee, Coal Safety, GPRS.

92.   **AUTOMATED ROLLER BEARING TEMPERATURE MEASUREMENT TO AVIOD DERAILS**

Mr.B.G.Gopal,K.Bharathi

Abstract:

In this paper, on one hand, the time-varying characteristics of the heat source and thermal boundary conditions of the high-speed spindle system were analyzed considering the thermal- structural coupling effect. And a transient bearing temperature field prediction method combining the thermal network method and finite element method was proposed. Furthermore, the relationships between time step, calculation efficiency and calculation results were analyzed. On the other hand, a online real-time monitoring system of the transient temperature of the cylindrical roller bearing inner ring for maximum speed of 13,000 r/min was designed and implemented using fiber optic sensing technology. Comparing with the conventional static thermal analysis results, it is verified that the simulation method proposed in this paper has higher accuracy. This paper provides a new approach for analyzing and testing the thermal characteristics of high-speed spindle system.

Keywords : Thermal-structural, Spindle, Fiber optics, Static thermal

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

93.   CUSTOMER CHURN PREDICTION IN TELECOM SECTOR USING BIG DATA ANALYTICS

Mr.B.G.Gopal

Abstract:

Customer churn will cause huge losses to the communication company and has become a real problem. The article uses big data analysis technology to analyze user characteristics of churn customer historical information data, establish a churn prediction model, find users with a higher risk of churn in advance, develop targeted strategies, and carry out a series of retention activities to retrieve them. The paper presents a strategy of user segmentation and piecewise regression to find the highly relevant fields and divide the customers into different groups based on these fields, and then use regression analysis to establish the prediction models for different groups. Online test shows that the model can effectively identify most of the lost customers, effectively reduce the user off-network rate, and improve efficiency and effectiveness than traditional methods.

Keywords : Big data, Churn prediction model, Regression

94.   A FOREST FIRE MONITORING SYSTEM BASED ON GPS AND ZIGBEE WIRELESS SENSOR NETWORK

Mrs.M.Bhuvaneswari, J.Santhosh kumar,K.Veeramani

Abstract:

The significance of forest fire monitoring was determined by the importance of forest resource and the destructive of forest fire. In the paper, according to the limitation of traditional forest fire monitoring schemes, a new wireless network implementation scheme oriented to forest fire monitoring was presented based on GPRS communication technology and ZigBee technology. The related hardware schemes and software program flows were given. The forest environmental information was collected by ZigBee network and transmitted to FTP server with public network IP on the internet through GPRS network by GPRS module which was controlled by coordinator node. The monitoring center got the data, which was provided for relative expertsand decision maker, from FTP server to implement the achievement of remote data from monitoring region. Through the analysis of historical data and real-time data, correct judges and decisions were made. It had strategic significance to improve the level of modernization of forestfire monitoring.

Keywords : GPRS, ZigBee, FTP, Modernization, Public Network

95. AUTOMATIC POWER FACTOR COMPENSATION

Mrs.M.Bhuvaneswari, K.K.Dharini

Abstract:

This paper present the project designed to correcting power factor for medical industries. Which with hope to make the cost and energy usage efficient, because the energy source are depleting due to increase in population. Power factor is the ratio of real power and apparent power. This definition is mathematically represented as kW/kVA where kW is active power and kVA is apparent power (active + reactive). Reactive power is the non-working power generated by the magnetic and inductive load to generate magnetic flux. The increase in reactive power increases the apparent power so the power factor will decrease. Low pF will cause the industry to meet high demand thus making it less efficient. The main aim of this project is to increasing the current power factor of medical industries from 0.85 to 0.90. Power factor compensation contribute to reduction in current-dependent losses and increase energy efficiency while expanding the reliability of planning for future energy network. As technology develops, the gradual cost and efficiency penalty should reduce. Therefore, automatic power factor compensation device should become cost-effective and smaller device over time. That is the reason this project is using programmable device as it is a miniature architecture device.

Keywords: Power factor, Apparent power, Reactive power, current-dependent

96. DESIGN OF SMART LOCK SYSTEM FOR DOORS WITH SPECIAL FEATURES USING WI-FI TECHNOLOGY

Mrs.M.Bhuvaneswari[1]

Abstract:

Nowadays the use of Internet of Things (IoT) technology has developed that almost all aspects in human's life utilize IoT technology to increase the quality of life. Lock system is one of those aspects that has been impacted by the massive development of IoT, for example lock system that can be opened or closed by entering the password or by gadget to control it.

The main component of smart home concept lays on the door, so the door lock system becomes an interesting topic to discuss. The paper presents a design of lock system for operating door without a control to open or lock it that brings a comfort and can be applied effectively. Besides, the lock system can be used for all kinds of human's physical condition. The system uses bluetooth technology with low power and is available on almost all gadgets. The design of the system is also completed with special feature to increase the security and the comfort of theusers. The lock system indirectly supports the program of United Convention of Right People with Disabilities.

Keywords: Lock System, Smart Lock System, Bluetooth Technology, Security, Internet Of Things, Door.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main ::
Manikandam, Trichy-620 ...

97. DESIGN OF ELECTROCARDIOGRAM RECORDER BASED ON MOBILE SYSTEM

Ms.R.Bhuvaneswari[1], Akilan Adhavan[2], Aravind Sekar M[3]

Abstract:

Heart diseases have caused millions of death worldwide in the past years because of the increase in the population and rising of health care costs. The main causes of heart attacks are a lack of pre-requisite care and also un-availability of medical care in emergency situations. Treatment and prevention of heart attack is very important. Periodic checkup is important in health maintenance. Electrocardiography(ECG), can be monitor anytime, anywhere and send the report of Electrocardiography(ECG), to the medical expert with this portable device and can effectively communicate with them. In case of any abnormality, doctor will effectively communicate with the patient. For regular checkup and home based checkup, there is need of low cost, portable, low power and time-saving ECG monitoring device. The main requirement ofany portable device is low power supply and in this project, there is no need of external power supply because power requirement is completed by harvesting power from mobile phone through audio jack. This paper intends towards developing a device which monitors cardiac activity and will be compact, simple to handle, noninvasive, and reliable. Headphone jack interface could be used to develop modular platforms to monitor vital signs such as Pulse rate, SpO2, EKG.

Keywords : Electrocardiography, Mobile phone, Power Harvesting Circuit, Audio Jack Interface, Portable ECG Device.

98. DESIGN AND FABRICATION OF WEIGHING WAVE BRIDGE WITH OVERLOAD DETECTOR

Ms.R.Bhuvaneswari[1],N.Ashefa[2]

Abstract:

A vehicle overload detection system is proposed based on geophone. Under normal circumstances, when overloaded vehicles and ordinary vehicles pass through the road, the amplitude of the ground vibration will be different, and the Geophone sensor can detect tiny vibrations of the ground. The system includes information acquisition module, signal conditioning module and wireless transmission module. The collected vibration data is transmitted through the wireless transmission module to the background, and the SVM algorithmis used to classify the information and determine whether the vehicle is overloaded. Experiments show that the system can detect overload accurately.

Keywords : Vibration, Geophone sensor, Wireless transmission, SVM

99. HR ANALYTICS - AN EFFECTIVE EVIDENCE-BASED HRM TOOL

Ms.R.Bhuvaneswari[1]

Abstract:

The 21st century Human resource management is becoming more efficient with the best utilization of advancements in technology. Starts from finding right talent to retaining best talent,organizations are striving for much intelligent decisions. The decisions making in HR mostly rely on trust and relationships not like how in other functional areas of management. In our view, analytically, HR is much ignored field so far when compared to other functional areas though right people are required for every business operations for better results. But after the great recession period 2008, most of the organizations recognized the necessity of accurate evidence based people management practices. Fortunately, big data in HR gifted HR analytics to the evidence based HRM concept. To make accurate decisions in HR, data driven evidence based HRM should practice with analytics, decision making and problem solving. So, the concept of evidence based HRM with its effective HR analytics tool strengthening the accurate decision making power of HRM. This paper elevates importance of HR analytics, practices and applicability in different concerns. We also focused to collect periodic developments in HR analytics being an effective evidence based HRM tool.

Keywords: HR Analytics, Evidence based HRM

100. GPS BASED VEHICLE TRACKING AND ALERT SYATEM

Mrs.P.Santhana Selvi, P.Kanimozhi,S.Suganthi

Abstract:

The research is about creating a system for tracking vehicle. Objective of the research isto design and develop a GPS based Vehicle Tracking System in order to display location of vehicle on Google Maps. This system used Arduino MEGA as a microcontroller and it will be used as the main processing unit. Next, Ublox NEO-6m GPS module is used to routing the coordinate while SIM 900A GSM module is used to connecting with the user. The product was successfully run at outdoor and having some problem at indoor due to GPS module cannot extract the accurate coordinate when there is a roof or obstructer that block the direct signal connection between the GPS and satellite. For the next improvement, the researcher can use the high quality of GPS module to connect with satellite. An example, GPS NEO-6P module whereit can collect data more accurate and stay connect to the satellite.

Keywords: GSM (Global Services for Mobile Communication), GPS (Global Positioning System), Vehicle Tracking System.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Ro..
Manikendam, Trichy-620 012

101.   DESIGN OF COLLISION MITIGATION SYSTEM

Mrs.P.Santhana Selvi[1],S.Mohan Raj [2]

Abstract:

The paper presents the development process of an active safety and driver assistance system based on forward looking radar technology. The active system provides multiple safety relevant features enhancing both the driver convenience and the active safety of the vehicle. The investigated high-level features are collision mitigation braking, forward collision alert and adaptive cruise control. Further, the architectural software design and the system safety concept and aspects related to hardware resource restrictions of the production ECUs are presented.

Keywords: Collision Mitigation Braking, Forward Collision Warning, Control Architectures, Adaptive Cruise Control, Driver Warning Systems, System Safety Requirements, Long Range Radar Sensor.

102.   IMPLEMENTATION OF VIRTUAL FRIENDLY WOMEN SECURITY DEVICE WITH IOT TECHNOLOGY

MRS.P.SANTHANA SELVI[1]

Abstract:

Crimes against women is becoming a daily routine in our country, nowadays. An increased demand persists in developing safety devices for ensuring safe and secure environmentfor women. The main aim is to develop a "Virtual Friendly" device, to safeguard themselves while in trouble. The proposed system developed consists of GPS, GSM modem, Microcontroller (LPC812), RF transceiver, Temperature Sensor, Voice Recognizer. GPS Receiver gets the location information from satellites in the form of latitude and longitude. The Microcontroller processes this information and this processed information is sent to the POLICE control room. The temperature sensor senses the body temperature continuously. SMS alert will be sent in case of low temperature which indicates emergency condition. The system can be activated by the user by themselves, when they are in need of self-defense. Features such as Alarm sound, voice recognition are added to the system to ensure optimum efficiency. The voicerecognizer circuit is used to send command with voice by using the codes SAVE ME and HELP ME. The device is designed as a portable kit and easily operated, so that any women can easilycarry with them anywhere and everywhere.

Keywords: GSM, GPS, RF Transceiver, Temperature sensor, Voice Recognizer

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Mai
Manikandam, Trichy-620 ...

103.   ADVANCED SEAT BELT CONTROLLED VECHICLE SYSTEM

Mr.J.Manokaran,S.Palani

Abstract:

The system consists of a ring gear setup which lies below the seat. The seat belt is mounted on the ring gear which is meshed with a pinion driven by a motor. Provisions are made to adjust the ring gear setup based on the position of the buckle which can be altered according to the convenience of the passenger. The ring gear is designed to follow maximum possible projectile to accommodate passengers of different size. Once the passenger occupies the seat, the motor is switched on in the forward direction. The belt is carried by the curved ring gear and locked with the buckle. Once the seat belt is locked with the buckle, the motor runs in the backward direction till the ring gear is brought back to its initial position. In the existing scenarioof automatic seat belts, belts are attached to doors. A crash that causes the doors to open leaves the passenger unprotected. The foremost advantage of this type of automatic seat belt is that it is attached to a sturdier portion i.e. frame of the car instead of doors.

Keywords: Injuries, Safety, ANSYS, Pressure Sensor, Infrared Sensor, Color Sensor, Microcontroller.

104.   AUTOMATIC LICENSE PROVIDER SYSTEM

Mr.J.Manokaran[1], S.Amsavalli [2]

Abstract:

In this text, we proposed a crowd-sensing concept to assemble the use of surroundings in order that the reason pressure must have a better knowhow of his or her environment on the roadway. We assume that smart vehicles will embed a sensing tool. We count on that smart motors will embed a sensing gadget that consists of an accelerometer sensor, PIC 16F877A, switches, and an RFID reader. The customer scans their RFID card with the assist of an RFID reader, after which it suggests their respective Aadhar gambling playing cards. The key or transfer is used to start the automobile, and switches are pressed with the resource of theindividual. The accelerometer sensor detects whether or no longer or no longer or not the character is following the suggestions (8 commands) efficiently. If the character eliminated their leg from the pedal or did not have a look at the hints of RTO, the purchaser may moreover furthermore mark this as rejected via way of manner of the tool. Our device shows theconsumer's repute inside the route of license checking out on the LCD display, and a buzzer signs, and it is also up to date to the cloud with their respective Aadhar numbers the usage of an IoT module and RFID tag.

Keywords: Accelerometer sensor, Automated License and use of licenses.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

105.   IOT BASED COAL MINE MONITORING AND ALERTING SYSTEM

Mr.J.Manokaran

Abstract:

Safety is the most vital part of any type of industry. In the mining industry safety and security is a fundamental aspect of all. To avoid any types of accidents mining industry follows some basic precautions. Still accidents take place in underground mines due to rise in temperature, increased water level, and methane gas leakage. Here we provide safety to worker. When worker in danger he can press panic switch inform security. To enhance safety in underground mines, a reliable communication system must be established between workers in underground mines and fixed ground mine system. The communication network must not be interrupted at any moment and at any condition. A cost effective zigbee based wireless mine supervising system with early-warning intelligence is proposed in this project. Worker status can be monitor over IOT.

Keywords : PIC Microcontroller ,WiFi / GSM moule ,Zigbee ,Temperature Sensor , Gas Sensor , Water Level Sensor

106.   EFFICIENCY AND AREA REDUCTION FOR A PSEUDO RANDOM NUMBER GENERATOR FRAME WORK BASEDON WELL METHOD

Ms.M.Mahalakshmi, T.Atheeswaran

Abstract:

The strength of cryptographic keys rely on the random number generators(RNGs)toproducerandomseedvalues.UnfortunatelytherearenotmanyRNGsoptions suitable for Internet of Things (IoTs) scenario, due to limited process-ing resources and bulkquantity of IoT data that needs to be secured. In thisarticle, we studied sawtooth map which is achaotic map. However, when implemented on a computer, the sawtooth map results on a non- chaotic orbit due tothe finite precision of computation. This can be avoided if we use thesawtoothmap as the local map in a coupled map lattice (CML) system. We explore suchcoupled map systems for randomness through entropy and statistical analysis.Based on the results, we propose a lightweight hybrid pseudo random numbergenerator (PRNG) based on sawtooth basedCML system and SPONGENT hash-ing. The proposed PRNG is thoroughly tested against statistical attacks, entropyanalysis, key space analysis and compared with existing state of the art solu-tions. The results provide evidence that the proposed PRNG produces randomnumbers that could produce sufficiently strong cryptographic keys for resourceconstrained IoT devices.

Keywords: Coupled Map Lattice, Cryptography, Pseudo Random Number Generator, SawtoothMap.

PRINCIPAL
Indra Ganesan College of Engi...
IG Valley, Madurai Main ...
Manikandam, Trichy-620 014

107.   METHODOLOGY AND GUIDELINES FOR DESIGNING FLEXIBLE BMS IN AUTOMOTIVE

APPLICATIONS

Ms.M.Mahalakshmi[1], T.Dhanalakshmi[2]

Abstract:

The fragile characteristics of Li-ion batteries lead to the need of battery management system (BMS) to carefully supervise them during the operation. Since there are so many variations in battery configurations, the BMS usually must undergo many iterations of the development cycle, which take a long time to optimize and finalize the design. Previously, many works adopted the idea of modularized BMS to address these issues, but they still have some skeptical issues such as measurement approaches or difficulties in reconfiguration. This paper presents a guideline on the crucial aspects of flexible BMS designs for automotive applications, which aims to reduce time and effort for developing a new BMS for automotive battery pack. The guideline covers some crucial aspects pertaining the automotive BMS hardware implementation, SOC estimation algorithm and its computational performance based on Extended Kalman Filter (EKF) and Luenberger Observer (LO) with 3 levels of Electrochemical model (ECM). All of the tests were carried out in a smallscale microcontroller. It was found that 2-RC ECM gives the best trade-off between SOC estimation accuracy and computational time. While the 3-RC ECM provides 9.5% and 31% higher accuracy than the 2-RC and 1-RC ECM, respectively, but taking 88% and 240% higher computational time than the latter two cases. The optimal speed of the observer poles of LO algorithm are suggested to be in the range of 2-5 timesfaster than the system poles, which makes the convergence speed to be comparable to the EKF algorithm but is still able to keep the SOC estimation error in the range of 3-5%. These results can be used to make a trade-off between estimation accuracy and computational time, to select the optimal SOC estimation algorithm for onboard BMSs

Keywords: Flexible battery management, SOC estimation,Battery modelling, Equivalent circuit modelling.

108.   IOT BASED FERTILIZER RECOMMENDATION SYSTEM FOR SMART AGRICULTURE

MS.M.MAHALAKSHMI

Abstract:

Agriculture is the backbone of the India and villages are the life lines for the growth of India. In our country, over 72% of individuals rely on cultivating which is 33% of the populace puts resources into cultivating. In this manner, the difficulties and issues concerning horticulture should be engaged to frustrate the nation development.The only one solution recommended to this issue is modernizing agriculture using smart technologies. In agriculture, irrigation and fertilizer supply are the two important processes which support crop production. The Conventional water system techniques include a ton of time and exertion in cultivating. A Sensor-based computerized water system framework with manure tank gives a promising answer for oversee rural action. This exploration article gives an immense report on the water system framework and in savvy horticulture.

Keywords: Modernizing, Smart technologies, Savvy horticulture, Conventional water system.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

109.   DESIGN OF HIGH ISOLATION KU BAND MICROSTRIP ARRAY ANTENNA FOR MARINE

RADARMs.R.Nithya[1],V.Mahalakshmi[2], A.Margreat[3]

Abstract:

This paper presents a high-isolation printed antenna array for marine radar applications. The antenna array is composed of 32 identical square microstrip patches operated at a center frequency of 9.35 GHz and includes a 100-MHz bandwidth (subject to a 1.5:1 voltage standing wave ratio [VSWR]). The patch antennas are arranged in four arms, each of which contains eightelements and is series-fed using Chebyshev tapering (25 dB side-lobe level). To apply the antenna in marine radar applications, an antenna with horizontal polarization was employed because, in comparison with vertical polarization, it can relatively reduce the sea clutter reflectivity. Therefore, a slit was carved on each patch element to change the current path, thereby enabling horizontal polarization. The antenna gain, 3-dB beamwidth, side-lobe level, andfront-to-back ratio were 22 dBi, 5.3 , 26.4 dB, and 38.5 dB, respectively. Additionally, metallic baffles were introduced for increasing the isolation between the transmitting and receivingantennas to 60 dB.

Keywords: High isolation, Horizontal Polarization, Marine Radar, Printed Antenna Array.

110.   IOT BASED MINING TRACKING AND WORKER SAFETY HELMET

Ms.R.Nithya

Abstract:

This project addresses a cost-effective, flexible solution of underground mine workers' safety. A module of MEMS and temperature-based sensors are used for underground environment monitoring and automating progression of measurement data through IOT communication technique is proposed with high accuracy, smooth control and reliability. Arduino microcontroller is used for collecting data and making decision, based on which the mine worker is informed through server. Sensor data transforms into digital signal and effectively communicate wirelessly with the ground control centre computer

Keywords: Temperature Sensor, Micro Controller, IoT.

111. **A NOVEL LOOP FILTER BASED PHASE LOCKED LOOP WITH PHASE ERROR**

COMPENSATIONMr.K.Kumar[1], M.Prabu[2]

Abstract:

This paper proposes a new three-phase software phase-locked loop (PLL) which operates fast and accurately in unbalanced, polluted and frequency deviating circumstances. The proposed PLL consists of a frequency detector and an initial phase angle detector. In the synchronous reference frame, the initial phase angle detector tracks a ramp phase angle, which is generated from frequency deviation of the inputs, with steady error. This detection error is utilized to estimate the actual grid frequency. Frequency adaptive Moving Average Filters (MAFs) are applied in this new PLL to eliminate noises, harmonics, and negative sequence components.

In this paper, the effect of discrete sampling on the MAFs is analyzed, and a linear interpolation is employed to enhance the performances of the MAFs. Stability of the proposed PLL is also analyzed, a sufficient stability condition is identified, and the design procedures of the control parameters are also presented. Simulations and experiments verify the performances of the novel PLL.

Keywords: Digital Filter, Grid Synchronization, Moving Average Filter, Phase-Locked Loop

112. **PRECISE SYSTEMATIC DATA TRANSFER IN UNDERWATER ACOUSTIC WIRELESS SENSOR BASED NETWORKAPPROACH**

Mr.K.Kumar

Abstract:

Underwater Wireless Sensor Networks (UWSNs) are becoming increasingly popular in marine applications due to advances in wireless and microelectronics technology. However, UWSNs present challenges in processing, energy, and memory storage due to the use of acoustic waves for communication, which results in long delays, significant power consumption, limited bandwidth, and packet loss. This paper provides a comprehensive review of the latest advancements in UWSNs, including essential services, common platforms, critical elements, and components such as localization algorithms, communication, synchronization, security, mobility,and applications. Despite significant progress, reliable and flexible solutions are needed to meet the evolving requirements of UWSNs. The purpose of this paper is to provide a framework for future research in the field of UWSNs by examining recent advancements, establishing a standard platform and service criteria, using a taxonomy to determine critical elements, and emphasizing important unresolved issues.

Keywords: Wireless sensor networks, Ad-hoc networks, Internet of Things, Localization algorithms, Node mobility, Security mechanisms, Energy-efficient communication.

PRINCIPAL,
Indra Ganesan College
IG Valley, Ma...
Manikandam, Trichy...

113.   **SMART AMBULANCE USING IOT**

Mr.K.Kumar

Abstract:

Currently, the traffic management is a foremost concern all over the world. Particularly in India, due to expanding urban populace and the quantity of vehicles, traffic congestion issues are increasing rapidly. Traffic congestion has become a major problem which affects the ambulance service to reach the hospital on time. With the advancement of technology, many solutions have been developed to curb this serious issue to save patient life. The IoT has the capacity to improve the scenario. The goal of this paper is to examine different IoT techniques for movement control and the different approaches to assist the emergency vehicle to reach nearby healing facility on time. The main focus is on finding the best techniques to reduce the traffic congestion. To discover the appropriate response of this issue, comparative study of the literature of last fewyears has been reviewed.

Keywords: IoT, WSN, Smart Ambulance System, Traffic Congestion.

114.   **POWER REDUCTION THROUGH HYBERTHREAD TECHNOLOGY FOR MULTI BIT FLIP FLOPS**

Mr.S.Balakrishnan

Abstract:

Recently, the multi-bit flip-flop (MBFF) technique was introduced as a method for reducing the power consumption and chip area of integrated circuits (ICs) during the physical implementation stage of their development process. From the perspective of the consumer, the main requirements for such an optimization method are high performance, low power usage and small area (PPA). Therefore, any new optimization technique should improve at least one, if not all, of these requirements. This paper proposes a new low-power methodology, applying a MBFF merging solution during the physical implementation of an IC to achieve better power consumption and area reduction. The aim of this study is to prove the benefit of this methodology on the power saving capability of the system while demonstrating that the proposedmethodology does not have a negative impact on the circuit performance and design routability. The experimental results show that MBFF merging of 76% can be achieved and preserved throughout the entire physical implementation process, from cell placement to the final interconnection routing, without impacting the system's performance or routability. Moreover, the clock wirelength, nets and buffers needed to balance the clock network were reduced by 11.98%, 3.82% and 9.16%, respectively. The reduction of the clock tree elements led to a reduction of the power consumption of the clock nets, registers and cells by 22.11%, 20.84% and12.38%, respectively. The total power consumption of the design was reduced by 2.67%.

Keywords: Multi-Bit, Flip-Flop (Mbff), Low-Power Design, Power Optimization, Circuit integrated Performance, Chip Area, Physical Implementation

PRINCIPAL
Indra Ganesan College of Er
IG Valley, Madurai M.
Manikandam, Trichy-

115. **WIRELESS DATA COMMUNICATION SYSTEM BASED ON LI-FI USING LEDS**

Mr.S.Balakrishnan

Abstract:

Li-Fi stands for Light-Fidelity. This technology is very new and was proposed by the German physicist Harald Haas in 2011. Light based communication system is the backbone of the future of the communication system. Li-Fi is a wireless technology that uses light emitting diodes (LEDs) for transmission of data. The development of the wireless communication leads to advance research in LiFi technology. The term Li-Fi states to visible light communication (VLC) technology that uses as medium to deliver high-speed communication in a fashion similar to Wi- Fi. Li-Fi comprises a wide range of frequencies and wavelengths, from the Infrared through visible and down to the Ultraviolet spectrum. The immense use of Li-Fi may solve some bottleneck of data transmission in Wi-Fi technology. With the innovation in technology and the number of users, the existing radio-wave spectrum fails to accommodate this need. To resolve the issues of scalability, availability and security, we have come up with the concept of transmitting data wirelessly through light using visible light communication (VLC) technology. This paper objective is to study and describe the LiFi technology. The improvement of the wireless communication leads to advance research in LiFi technology through Visible Light Communications (VLC) Technology.

Keywords : Visible Light Communications (VLC), Light Emitting Diodes (LEDs), Radio Frequency (RF), Infrared (IR), Remotely Operated Vehicles (ROVs), Line of Sight (LOS).

116. **AGENT BASED TRAFFIC CONTROL SYSTEM OF VEHICLE REROUTING**

Mr.S.Balakrishnan

Abstract:

Simulation modeling is one of the analytic techniques commonly used for transportation management; it includes such activities as route planning and post-operation analysis. One of the simulation methods, agent-based simulation, has become increasingly popular due to the availability of good micro-level data collected through technologies such as GPS-enabled devices and road sensors. This paper presents the design and implementation of an agent-based simulation tool that can be used to analyse vehicle routing algorithms. We demonstrate how the tool can be used in practice by implementing two vehicle routing algorithms: shortest-path and LANTIME. LANTIME is an algorithm that can be used to minimize CO_2 emissions.

Keywords : Agent-Based Simulation, Simulation, Vehicle Routing, Road Networks, GreenLogistics, Transportation.

PRINCIPAL
Indra Ganesan College of
IG Valley, Madurai
Manikandam, Trichy-

117. EFFICIENT DESIGN OF ENCODER AND DECODER FOR GOLAY CODE

Mr.R.Thirunavukkarasu[1], K.Kalaivani[2]

Abstract:

This brief lays out cyclic redundancy check-based encoding scheme and presents an efficient implementation of the encoding algorithm in field programmable gate array (FPGA) prototype for both the binary Golay code (G23) and extended binary Golay code (G24). High speed with low-latency architecture has been designed and implemented in Virtex-4 FPGA for Golay encoder without incorporating linear feedback shift register. This brief also presents an optimized and low-complexity decoding architecture for extended binary Golay code (24, 12, 8) based on an incomplete maximum likelihood decoding scheme. The proposed architecture for decoder occupies less area and has lower latency than some of the recent work published in this area. The encoder module runs at 238.575 MHz, while the proposed architecture for decoder has an operating clock frequency of 195.028 MHz. The proposed hardware modules may be a good candidate for forward error correction in communication link, which demands a high-speed system.

Keywords : Architecture, Decoder, Encoder, Field Programmable Gate Array (FPGA), Golay Code.

118. CELL PHONE CONTROLLED FINGERPRINT SOLENOID DOOR LOCK USING ARDUINO AND HC-05

MR.R.THIRUNAVUKKARASU

Abstract:

Now the whole world is in the grasp of COVID 19 and everyone is taking precautions wherever they can to prevent themselves from contracting this serious disease by following social distancing, wearing masks, using cashless transactions, and avoids touching anything to prevent the spread of germs. With the advent of technology, the normal locks are becoming things of the past and new biometric-based locks and RFID based locks are becoming more and more mainstream. Fingerprint-based locks and attendance record-keeping devices are used in most of the offices and colleges too but nowadays it is not advisable to do so due to this pandemic and so we are going to build a door lock by using a solenoid lock and control it using an android app over Bluetooth so that we don't have to touch the fingerprint sensor at all and justuse your own phones to control the lock.

Keywords : COVID 19, Biometric, RFID, Fingerprint, Pandemic, Bluetooth

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

119. **DESIGN AND CONTROL OF AN ACTIVE ORTHOTIC LEG**

Mr.R.Thirunavukkarasu

Abstract:

The purpose of this paper is to present the design, prototype and control of an active prosthetic leg. The research scope encompasses the mechanical design, the electronic design and the control system design. The mechanical design covers kinematic diagram design, dynamic system modelling and 3D design. Meanwhile, the electronic one includes PCB mainboard design and sensor system design. The control system design consists of system parameter estimation and self-tuning regulator adaptive controller design, creating the adaptive controller which plays a role as the brain of the prosthetic leg to control the whole system. The main objective of this work is to produce a very first prototype of an active prosthetic leg which mimics the movement, experimenting on a healthy man before being adopted on amputees. In addition, the prosthetic leg can be also served as a test platform for testing the control methods.

Keywords : Active Prosthesis, Control Design, Adaptive Control, Leg Trajectory, Communication Protocols.

120. **ECG SIGNAL DENOISING USING ENSEMBLE EMPRICAL MODE DECOMPOSITION**

Mrs.B.Saraswathi,V.Nivetha,S.Praveena

Abstract:

In this paper, a novel electrocardiogram (ECG) denoising method based on the Ensemble Empirical Mode Decomposition (EEMD) is proposed by introducing a modified customized thresholding function. The basic principle of this method is to decompose the noisy ECG signal into a series of Intrinsic Mode Functions (IMFs) using the EEMD algorithm. Moreover, a modified customized thresholding function was adopted for reducing the noise from the ECG signal and preserve the QRS complexes. The denoised signal was reconstructed using all thresholded IMFs. Real ECG signals having different Additive White Gaussian Noise (AWGN) levels were employed from the MIT-BIH database to evaluate the performance of the proposed method. For this purpose, output SNR (SNRout), Mean Square Error (MSE), and Percentage Root mean square Difference (PRD) parameters were used at different input SNRs (SNRin). Thesimulation results showed that the proposed method provided significant improvements over existing denoising methods.

Keywords : Denoising; ECG; EMD; EEMD; Customized Thresholding

PRINCIPAL.
Indra Ganesan College of Engineering
IG Valley, Madurai M:.
Manikandam, Trichy-620 ...

121.   DESIGN OF METAL DETECTION ROBOT ENHANCED WITH FPGA

Mrs.B.Saraswathi

Abstract:

Metal Detector Robot is an instrument controlled by an Android-based smartphone that detects the presence of metal, especially landmines, on a designated location. The usage of landmines causing injury and fatality makes detectors important. The old method of detecting landmines such as direct sweeping is very risky for stepping the landmine unintentionally. In thisresearch, the robot system is equipped with a metal detector useful to detect the metal presence based on coil induction when it's approaching the metal. LCD works as an interface showing frequencies of detected metals. The robot movement is controlled by DC's current motor programmed using Arduino UNO. When the robot detects the metal presence, the buzzer sound will be triggered, and the LCD will show the detected metal frequency. The testing result shows that an Android-based smartphone can control the robot up to 15 meters radius. The detectionradius is effective up to 88 millimeters from the detector head.

Keywords : Arduino Uno, Metal Detector, Design, Robot

122.   DESIGN, SIMULATION AND DEVELOPMENT OF 2K CORE HALF ROTATING MOULD TO IMPROVEAESTHETIC VALUE OF PLASTIC COMPONENT

Mrs.B.SaraswathiAbstract:

The project work is to show that the use of SLM (Additive Manufacturing) compared with the traditional process to make injection molds will have advantages in design, especially inwaterways. This work gives seven different versions of design applied to the SLM method to analyze and compare them in Solidworks and Moldflow to figure out what design is suitable for the SLM method. Through analysis of different versions, the finding of this thesis work is that the conformal waterway of design and lighter but stead structure in the SLM method causes the SLM molds' cooling performance to be almost 15% better than the conventional way and shortenthe production time by 18% per product. Based on the advantages of the SLM method in cooling system design and structure optimization, the company can use the SLM method in the production process to improve economic and environmental benefits.

Keywords : Additive manufacturing, SLM method, Solidworks, Moldflow, conformal waterway

PRINCIPAL
Indra Ganasan College of Engineering
IG Valley, Madurai Main .
Manikandam, Trichy-620 012

123. **ADAPTIVE BEAM STEERING ANTENNA FOR IMPROVED COVERAGE OF NON - CONTACT VITAL SIGNRADAR DETECTION**

Mrs.V.Elakkiya[1] ,K.Jacqulinmary[2], T.Thilagavathi[3]

Abstract:

This paper presents an adaptive beam-steering antenna for non-contact vital sign radar system at 5.8 GHz. A 2X2 microstrip patch antenna and two phase shifters are manufactured on the same board. Phase shifters consisting of 4 single pole double throw (SPDT) switches are integrated into the matching network of the phase array antenna to save the area. Beam-steering function is controlled by the active phase shifter. The DC bias circuit of the phase shifter is connected with the back side of the antenna through headers. Both simulation and measurement show an antenna bandwidth of 200 MHz centered at 5.8 GHz, which is suitable for a 5.8 GHz non-contact vital sign radar system. The radiation beam of this antenna can steer from -22° to 22° in H-plane, which increases the antenna coverage to 85° without sacrificing antenna gain. Measurement shows the adaptive beam-steering antenna can successfully detect human vital signs while the fixed-beam 2X2 antenna fails due to the limited and fixed antenna beam

coverage. The improved performance without increasing antenna area makes the adaptive beam-steering antenna more suitable for commercial application.

Keywords : Beam Steering, Doppler Radar System, Patch Antenna, Phase Shifter, Radar Cross Section

124. **ELECTRIC SKATEBOARD**

Mrs.V.Elakkiya

Abstract:

This project is an alternate solution to the increasing use of non-renewable energy resources which are leading to various problems such Traffic problems, Parking space problems, emissions of gases due to the burning fuels,noise pollutions which occurs in cities during peak rush hours. People tend to use their private vehicles even for the smallest commutes of 2-3km around cities contributing to the traffic problems. Thereby we are introducing E-SKATE board as an alternate solution in order to tackle these problems. this paper is a complete interpretation about this rechargeable electric skate board. The focus of this paper is to minimize modern day traffic problems and introduction of e-skate board as an alternate solution of travel for distances cutting done the use vehicles which run on fuels.

Keywords: Rechargeable Electric Skate Board, DC Motor, Controller, RPM, PWM, Drivers,Batteries

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main
Manikandam, Trichy-620 vi.

125. GSM BASED SMART MOTOR STARTER USING ANDROID AUTOMATION TOOL

Mrs.V.Elakkiya

Abstract:

Android is a software stack for mobile devices that includes an operating system, middleware and key applications. " Android", the world's most popular mobile platform which is a tool for creating application that look great and take advantage of hardware capabilities. As load shedding is a common problem in villages, the three phase motor may get damaged or may give improper output due to frequent load shedding. An android application is developed which will help the farmer for ON/OFF control, protection and continuously monitoring the status of three phase parameters such as current, voltage of Induction motor using GSM technology. Communication between Quectel GSM modem and Renesas microcontroller is done using MAX-232. Android platform is being targeted since it has huge market and open source. The running motor for a brief period and the parameter control of the motor can be achieved with the Renesas microcontroller. The Renesas microcontroller used is from RL78 family. The four operation of the induction motor is best suited for industries where motors are used and as per requirement as they operate on android phones. In case of a specific operation in industrial environment, the motor needs to be stopped immediately. In such scenario, this proposed system is very apt as the operations - To Set Power on Time, To Set Auto Switch Time, To Set Under Voltage, To Set Over Voltage, To Set Motor OFF Time and many more like its integral features can be easily performed. The android application is password protected, so no other person can control the motor without password. Remote operation is achieved by any smart-phone/Tablet etc., with Android operating system, upon a GUI (Graphical User Interface) based touch screen operation.

Keywords : Android, Induction Motor, Status Monitoring And Control, Renesas Microcontroller, Remote Control, GSM Technology.

126. DSSS -CDMA TECHNIQUE USING QPSK MODULATOR

Mrs.S.RahamathNisha[1], P.Jeeva rani[2], R.Jeyasri[3]

Abstract:

Nowadays, the Direct-Sequence Spread Spectrum (DSSS) technology has been widely used. It's urgent to research blind detection algorithms on DSSS signal. In this paper, a new method is proposed. It based on a combination of wavelet noise reduction and Estimation-based Time- domain Sliding Correlating Accumulation, which can be used to detect the DSSS-QPSK signal. The results show that when the length of spreading code is 15 bits and the Signal-to-Noise Ratio (SNR) is -12 dB, the method could easily detect whether the DS/SS-QPSK signal exists.

Keywords: Direct sequence spread spectrum signal, Wavelet Noise Reduction, Estimation- based Time-domain Sliding Correlating Accumulation

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

127.   Motorised Bench Vice With Arduino Control

Mrs.S.RahamathNisha

Abstract:

A vice is nothing but a holder which has two holding points at each ends and this holding points help the work piece to stay in place so that the work can be done on the work piece. Now here one of the jaws on the vice is fixed and do not move and the other jaw that is placed in opposite moves so that we can adjust the vise according to the work piece design. So basically the first jaw of the vice helps to hold the work piece in the place and the second jaw can be used to tighten or loosen according to the shape of the work piece. So this is how the basic bench vice works. So the vise can be used for doing many works on it such as to shape a metal object, to make keys, also to cut the object etc.. Like this there are many ways for which we can use the bench vise. Now the paper basically relates to the vises and the scope of improving the working of Bench vise with the help of using a DC motor which helps in the movement of the jaws through the dc motor. Now the main objective of this paper is to make a bench vise which can be operated without any man power and use dc Motor to clamp the work piece so that the work can be done on it. The power to the movable jaw is supplied by the dc motor so that the work can be done on the work piece of any size and shape. We have also tested the vise with various work Pieces just to verify so that it can hold properly while the work is done. Also contact stress analysis is studied at the contact of grip and work piece of diameter 10 mm at various loads such as 10 N , 50 N and 100 N

Keywords: Design, Bench vice, Motorized, Contact stress

128.   AN EFFICIENT STANDARD BASIS BASED ENCODING/DECODING METHOD FOR CDMA NOC

Mrs.G.Keerthana[1], RM.Adakkammai[2], K.Ashema Begam[3]

Abstract:

In the rapid growth of the computational complexity, more and more processing elements (PEs) are integrated onto a single chip, and Network on Chip (NoC) has been proposed toaddress the scalability, reliability issues of on chip communication. However, conventional packet switched NoC suffer from nondeterministic transmission latency and limited opportunities for parallel data transfer, since multiple fl ows cannot get through a link at the same time. To resolve these problems, the Code Division Multiple Access technique as an effective method for implementing high performance on-chip AND operation in theencoder and decoder. In the transmitter module, source data from various sender is individually encoded with an orthogonal code of a standard basis by using multiplexer, this different coded data is mixed into one. After that, through the on chip communication infrastructure the sums of data can be transmitted to their destinations. In the receiver module, by taking an XOR operation between the sums of data and the corresponding orthogonal code a sequence of chips is retrieved. Finally, original data can be reconstructed. This method achieves 56.11% less delay, 11.21% area saving and achieves maximum throughput than the existing one

Keywords: Integrated   circuit(IC),   Code   division multiple

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main
Manikandam, Trichy-620 016

access(CDMA),allyAsynchronous Locally Synchronous (GALS), Network on chip.

129. SEMI HUMANOID PNEUMATIC ROBOT

Mrs.G.Keerthana

Abstract:

Humanoid robots are challenging mechatronics structures with several interesting features. Choosing a humanoid robot to develop applications or pursue research in a given direction might be difficult due to the strong interdependence of the technical aspects. This paper aims at giving a general description of this interdependence and highlight the lessons learned from the impressive works conducted in the past decade. The reader will find in the annex a table synthesizing the characteristics of the most relevant humanoid robots. Without focusing on a specific application we consider two main classes of humanoid robots: the ones dedicated to industrial application and the ones dedicated to human-robot interaction. The technical aspects are described in a way which illustrates the humanoid robots bridging the gap between these two classes. Finally this paper tries to make a synthesis on recent technological developments

Keywords: Mechatronics, Humanoid, Industrial, Technological

130. Performance evaluation of different kind of attack in Wireless Network

Ms.P.Jency Leena [1], K.Mohamed Asath[2], R.Ranjith Kumar[3]

Abstract:

In this paper, the analysis of different performance evaluation parameters of wireless network applications specifically file sharing approaches such as client server approach and peer to peer approach specially Bit-Torrent is carried out. This project gives insights of client server approach along with its disadvantages and need of peer to peer approach. Different performance evaluating parameter such as delay parameter, traffic sent or received etc. for both wired and wireless client server network are plotted in OPNET environment and also studies the effect of traffic on server. Different analytical modeling techniques such as Queueing network model and fluid flow model are studied to analyze the performance of Bit-Torrent network and then the effect of arrival of peers and departure of seeds on parameters like delay, downloading speed, transition rates etc. is evaluated using Matlab.

Keywords: Queueing, Fluid Flow, Peer-to-Peer, Performance.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main
Manikandam, Trichy-620 014

131. **SPEED CONTROL AND TORQUE RIPPLE SUPPRESSION FOR SWITCHED RELUCTANCE MOTOR USINGARTIFICIAL NEURAL NETWORK**

Ms.P.Jency Leena

Abstract:

Switched reluctance motors (SRMs) have an intrinsic simplicity and low cost that makes them well suited to many applications. However, the motor has doubly salient structure and highly non-uniform torque and magnetization characteristic. Since it was hard to determine the accurate mathematical model of (SRM) .The Artificial Neural Networks (ANNs) solve the problem of nonlinearity of SRM drive. It ensures fast, accurate, less overshoot and high precision dynamic response with perfect steady state performance. In the simulation analysis, this paper tests the (SRM) motor adopting two different control modes at starting process under full load torque with a reference speed of 2000 rpm, and the load disturbance under full load torque with a reference speed 2250 rpm. Simulation results show that speed control is better using (ANN)

controller than using the (PID) controller. Matlab/Simulink tool is used for the dynamic simulation study.

Keywords: Switched Relcutance Motor (SRM), Proportional Plus Integrator Plus DiffrrentialControler (PID), Artificial Neural Network Controller (ANN).

132. **WIRELESS SENSOR NETWORK BASED DEFORESTATION DETECTION**

DR.R.RAJAMOHAMED[1],K.RAJAPALIKHAN[2]

ABSTRACT:

One of the contributing factors to global warning problem is the deforestation. Tools mostly used in this vast destruction of forest are chainsaw. Chainsaw has a quite unique acoustic characteristic that can be detected with high accuracy. To prevent and deter the deforestation, wireless sensor nodes can be deployed to detect the activity of chain sawing. However, to the best knowledge of author, there is no proper addressing this issue. In this paper, we present the algorithm suitable for limited energy sensor node to detect chainsaw. Aiming for low complexity and workable in real world, the algorithm combines three simple techniques 1) Adaptive Energy Threshold, 2) Delta Pitch Detection and 3) Energy Band Ratio. Performance results show that this algorithm is able to achieve detection accuracy about 90%.

Keywords: Global Warning, Chainsaw, Wireless Sensor, Low Complexity, Adaptive Energy Threshold, Delta Pitch , Energy Band Ratio.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

133. **SUBSTATION MONITORING AND CONTROL IN VIEW OF MICROCONTROLLER USING IOT**

DR.R.RAJAMOHAMED

Abstract:

Remote monitoring and controlling of the sub-station equipment is an important issue for the power/energy management department which is normally done manually, or using an expensive PLC and SCADA system. With the emergence of the internet and computational era, asmart monitoring and reliable controlling system over the entire sub-station equipment is highly desirable that can be achieved by introducing the Internet of Things (IoT) technology. IoT is the network of physical devices embedded with electronics, software, sensors, actuators and networkconnectivity which have the ability to identify, collect and exchange the data. Each thing is uniquely identifiable through its embedded computing system and able to interoperate within the existing internet infrastructure. This paper proposed an IoT based network strategy for monitoring and controlling the sub-station equipment so that managing time and resources can take place as efficiently as possible. The IoT based system allows objects to be sensed or controlled remotely across existing network infrastructure, creating opportunities for more direct integration of the physical world into computer-based systems and resulting in improved efficiency, accuracy and economic benefit with the added merits of minimum human intervention. Moreover, a prototype system has been implemented and tested for measuring theeffectiveness of the proposed model.

Keywords: Remote monitoring, PLC, SCADA, Internet of Things, Economic

134. **THE IMPORTANCE OF EFFICIENT PURCHASING IN A MANUFACTURING COMPANY SUPPLY CHAINMANAGEMENT**

Dr.R.RajaMoh

amedAbstract:

Purchasing is the function in a firm responsible for the professional management of a firm's interface with the supply market, to ensure its supply with the necessary goods and services provided by other organisations, i.e. suppliers. Industrial firms spend more than half of their turnover on supplies, which is why the purchasing function has become a central success factor for modern firms. Purchasing can be distinguished into strategic sourcing (supply planning, supplier selection and contracting) and operative a purchasing year cycle, which repeats on an annual basis. Next to ensuring a safe and timely supply, purchasing has the target to achieve good costs as well as to contribute to innovation and improve the strategic position of a firm. For that several tools have been developed, such as the Kralji^c-Matrix (which helps to develop sourcing tactics), the lever analysis (used to systematically achieve cost savings) or the preferred customer approach (used to achieve competitive advantages through smart purchasing).

Keywords: Professional Management, Supply Planning, Supplier Selection, Smart Purchasing.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

135.   ESTIMATION OF OPTIMIZED PARAMETERS IN MIXED COLUMN ARCHITECTURE FOR ADVANCEDENCRYPTION STANDARD CRYPTOGRAPHY

Mrs.M.Nandhini, K.R.Vel Rajeswari

Abstract:

With the evolution of The Internet, there has been a huge spurt in online transactions and also an increase in sharing of private, confidential and sensitive information over the web. This in turn has increased the requirement of highly secure and swift methodologies to protect such data using modern cryptographic techniques such as the Advanced Encryption Standard (AES). In order to achieve the same, this paper discusses significant and novel modifications to the existing hardware architecture of the mix column step of the AES algorithm. By adopting these techniques, a speed efficiency of over 1.41 times was achieved as compared to previous algorithms. Moreover, in a VLSI perspective, an average area optimization of 3 times was alsoachieved. All experiments were conducted using the Xilinx Artix-7 series of FPGA.

Keywords : AES, Cryptography, FPGA, Network Security, Splitting method, VLSI, VedicMathematics

136.   TOWARDS CLEAN INDIA MISSION: SMART INCLUSIVE BIN INITIATIVE

Mrs.M.Nandhini

Abstract:

As the world is progressing towards a digital era, technology is being used very judiciously to bring about advancements and also to improve the human lifestyle. Avoiding the implementation of these technological advancements in current lifestyle is like rowing a boat without a paddle. The basic focus is on having the smart sensors to join forces without human participation in order to deliver a new class of applications. The implementation of a smart bin plays an inevitable role in this process. This project aims at the implementation of a smartdustbin using an esp8266 module that has two main pins the trigger pin and the echo pin which are connected to the sensor. It helps to keep the surroundings clean and also help in reducing human labor. The lid / cover of the smart bin open when it detects an object on top of it. This is because of the ultrasonic sensor which is placed both on the top as well as the bottom of the lid. Once the trash has exceeded the set threshold value, the information is sent to another nodewhich is raspberry-pi and this node prints the respective house number onto the monitor with the help of socket programming. For instance, if the timings for collecting the waste in a society is 8 in the morning and 6 in the evening, the person collecting the waste needs to monitor and approach only those houses whose number is being displayed on the screen.

Keywords: ESP 8266, Ultrasonic Sensor, Smart City, Raspberry-Pi, Socket Programming

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

137. ARDUINO BASED MPPT CHARGE CONTROLLER FOR SOLAR PV SYSTEM

MRS.M.NANDHINI

Abstract:

Renewable sources such as Photovoltaic Systems (PV) have been used over decades to focus on greener Power generation sources. Today it has become a matter of concern how to reduce COST and improve EFFICIENCY to harness and use these natural resources in a much better way possible. Hence the idea Of a Maximum Power Point Tracking System (MPPT) has emerged, which is a system used by charge Controllers for wind turbines and Photovoltaic Systems to employ and also provide a maximized power Output. This Thesis is mainly concerned with the utilization of such a system in order to achieve Controlled photovoltaic power using the MPPT mechanism. The main aim of this project was to track The maximum power point of the photovoltaic module so that the maximum possible power can be Extracted from the photovoltaic systems by varying certain conditions in the algorithm and set up mechanism. Finally, the output data from this project was compared with the other MPPT algorithms to attain an improved performance and a better MPPT system.

Keywords: Photovoltaic Systems, Maximum Power Point Tracking System, Wind turbines, Maximized power

138. VOICE CONTROLLED INTELLIGENT FIRE EXTINGUISHING ROBOT

MRS.D.KOKILA[1],P.KEERTHANA[2],M.PREETHA[3]

ABSTRACT:

This paper demonstrates the research and implementation of voice automated fire extinguisher vehicle. The vehicle is controlled through connected speech input. The language input allows a user to interact with the robot which is familiar to most of the people. The advantages of speech activated robots are hands-free and fast data input operations. The speech recognition system is trained in such a way that it recognizes defined commands and the designed robot navigates based on the instruction through the Speech Commands. The medium of interaction between humans and computers is on the processing of speech. The complete system consists of three subsystems, the speech recognition system, transmitter section and the receiver section (on vehicle) .We have studied the various factors such as noise which interferes speech recognition and distance factor. The results prove that proposed robot is capable of controlling fire, avoiding obstacles and understanding the meaning of speech commands.

Keywords: Transmitter, Receiver, Speech recognition system, Visual Basic, Microsoft speech SDK 5.1.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Rd.
Manikandam, Trichy-620 012

139.   AUTOMATIC SOLAR PANEL CLEANING SYSTEM

Mrs.D.Kokila[1]

Abstract:

Energy is one of the major issues that the world is facing in India, the supply of energy has been one of the major problems for both urban and rural households. About 60% to 70% of the energy demand of the country is met by fuelwood and agriculture residues. Solar energy is a renewable source of energy, which has a great potential and it is radiated by the sun. Renewable energy is important to replace the using of electric energy generated by petroleum. Solar power has become a source of renewable energy and solar energy application should be enhanced. The solar PV modules are generally employed in dusty environments which are the case tropical countries like India. The dust gets accumulated on the front surface of the module and blocks the incident light from the sun. It reduces the power generation capacity of the module. The power output reduces as much as by 50% if the module is not cleaned for a month. The cleaning systemhas been designed cleans the module by controlling the Arduino programming. To remove the dust in the PV modules to improving the power efficiency.

Keyword: Rolling brush, Arduino board, DC Gear motor, Gear wheels.

140.   CONTROL OF HYBRID ENERGY SYSTEM FOR RURAL ELECTRIFICATION

Mrs.D.Kokila

Abstract:

In the recent time Chhattisgarh establish new power hub in India but Chhattisgarh rural area does not have any electricity. With the simple and cheap arrangement we can provide electricity in rural area. Lots of village is not connected with power grid. We can generate electricity by use of biogas, solar, wind etc. By the use of these, there are negligible chances of pollution. With the help of photovoltaic cell and wind energy, we can produce electricity in the hilly areas and field areas. Government also promoted non conventional energy sources and provide lots of concession in the equipment of solar energy and wind energy power station. This paper presents an analysis of power supply using Solar and Wind hybrid energy in south areas of Chhattisgarh. This area includes parts of Dantewada, Jagadalpur, Bastar, and Kondagao. There are some Hilly tribal belts in south Chhattisgarh where the density of population is less than 100 persons per Sq. kilometre. Geographically this is hilly area where people live in scattered huts in mountain area where it is very costly to supply electricity to each and every hut. To enlighten these huts in dark nights and to provide them electricity for household use in each and every session is the target. Hybrid wind-solar Energy may be a boon for this areas .All the related data and graph s includes in this paper, establishment of hybrid renewable power system. The other non conventional method of method of power generation may be such as solar cells, fuel cells, thermo electric generation, thermionic convertor, wind power generation, solar power generation tidal power generation. There is also need to improve the utilization generating equipment take corrective measures to improve reliability of the electric power system and take care environmental aspects of energy generation.

Keywords: Rural Electrification , Hybrid power system , Photovoltaic .

PRINCIPAL
Indra Ganesan College of Engineering
IS Valley, Madurai Main Road
Manikandam, Trichy-620 012

141. VIBRATIONAL POWER GENERATION ON HIGH WAYS USING PIEZOELECTRIC CRYSTAL

Dr.G. Malathy [1]AMUDHA. M[2], ANANAD. V[3]

[1] Professor, [2,3] UG Students [123]Indra Ganesan College of Engineering, Manikandam, Trichy

Abstract:

This paper presents a technical simulation-based system to support the concept of generating energy from road traffic using piezoelectric materials. The simulation-based system design replicates a real-life system implementation. It investigates practicality and feasibility using a real-time simulation platform known as *MATLAB-Simulink*. The system design structure was proposed considering factors involved with the field of material sciences for piezoelectric generator modeling and field of power electronics for additional components in producing a realist outcome. It also ensures ease of vehicle performance, as this system utilizes energy source derived as kinetic energy released from vehicles into electrical power output, that is, obtained by harnessing kinetic energy due to strain of vehicles over asphalt road surface. Due to the real-time simulation platform, the system simulation predicts the effective global carbon footprint. In addition to evaluating technical viability, a techno economical business analysis provides a strategic perspective. By using the simulation-based power generation results, an estimation of implementation cost and payback time in real life *(for United Arab Emirates)* was derived, hence validating and predicting real-time economic outcome. This is followed by a comparative study with other sources of renewable energy based on *levelized energy cost* factor that justifies the performance of the proposed system over other renewable energy sources, in support of providing an economical solution on reducing global carbon footprint.

Keyword : Piezoelectric Crystal

142. GAIN SCHEDULING PROPORTIONAL INTEGRAL FOR STANDALONE WIND ENERGY SYSTEM

Dr.G. Malathy [1] Balachandran. M[2], Bhuvaneshwari A[3]

[1] Professor, [2,3] UG Students [3]Indra Ganesan College of Engineering, Manikandam, Trichy

Abstract:

The isolated location in developing countries like India where grid is not readily accessible, the standalone system with renewable or with conventional source is inevitable. Due to the ample availability of solar and wind energy, they are the most suitable and affordable energy sources in the standalone mode. The fixed gain proportional integral controller is usually obtained in such system. These controllers are tuned for specific conditions to obtain the voltage regulation, so optimal tuning of these controller is necessary to acquire desired operation of the overall system. This can be done by scheduling the gain dynamically. This paper focuses on the incorporation of gain scheduling proportional integral controller applied to the standalone wind energy conversion system with change in wind speed conditions. The real data for the wind speeds are taken for the location of Ahmedabad, Gujarat, India to check the performance of wind energy system connected with DC load and analysis is done at average wind speed.

Keyword : Wind Energy System

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

143. PERFORMANCE OF RELAYS AND PROTECTION EQUIPMENT UNDER VIBRATION ENVIRONMENT

Dr.G. Malathy [1] Deepa Ragavi.M [2], Fathima Selvi C [3]

[1] Professor, [2,3] UG Students [123]Indra Ganesan College of Engineering, Manikandam, Trichy

\ **Abstract:**

Relays are the protection and switching devices in most of the control processes or equipment. Relays respond to one or more electrical quantities like voltage or current such that they open or close the contacts or circuits. Relays are subjected to vibration and mechanical shock due to operating environment, transportation, mishandling and earthquake. Operating environmental vibration and shock may result in spurious operation of relays. Understanding cause and effect of vibration on relay performance is paramount to ensure reliable functioning of relays. Relays should be designed for the anticipated operating environmental vibration and shock levels. Vibration and shock qualification is performed to determine if a product can withstand the rigors of its intended use environment, to insure the final design will not fall apart during shipping, for environmental stress screening and to weed out production defects. CPRI is equipped with state-of-the-art facilities to qualify equipment and components for vibration and shock conditions. Performance of relay under vibration environment is discussed in this paper.

Keyword's: Relay, Environment

144. INSULATION COORDINATION OF A UHV AC TRANSMISSION LINE CONSIDERING THE SWITCHINGOVERVOLTAGE WAVESHAPE

Mr.O. Karthikeyan [1] GAJALAKSHMI. B [2], GAYATHRI. R [3]

[1] Assistant Professor, [2,3] UG Students [123]Indra Ganesan College of Engineering, Manikandam, Trichy

Abstract:

This paper presents the determination of insulation coordination for phase-to-ground switching over voltages by a practical method in which the effect of the switching overvoltage waveshape, especially the impact of the time to crest on insulation strength is considered. This work is carried out on the world's first 1200 kV transmission line by modelling it in PSCAD.

Keywords: Insulation Coordination, Voltage Waveshape

145. SHORT CIRCUIT MODELLING AND ANALYSIS OF PV INVERTERS IN LARGE SOLAR FARMS

Mr.O. Karthikeyan [1] GOMATHI. S [2], GOMATHY.M [3]

[1] Assistant Professor, [2,3] UG Students [123]Indra Ganesan College of Engineering, Manikandam, Trichy

Abstract:

The short circuit behaviour of solar farms are different from conventional generating stations. These generating resources are static in nature and have a rich power electronic interface witha grid, limiting these solar farms' short circuit capabilities. The solar inverter voltage versusshort circuit current characteristics is modelled to supply the fault current within inverter designed ratings. In this research paper, a large number of solar power investors are groupedto pool their power into the grid. Short circuit studies are carried out for a 500 MW solar farm with string inverters rating of 3125 kW per IEC 60909. The protective relaying coordinationis performed as per IEEE C37.90 and IEC 60255-1 relaying standard.

Keyword: PV Inverters

146. DESIGN REVIEW OF GAS INSULATED AND HYBRIDGAS INSULATED SWITCHGEAR

Mr.O. Karthikeyan [1] GOPINATH. R, [2], GUNASEELAN .M [3]
[1] Assistant Professor, [2,3] UG Students [123]Indra Ganesan College of Engineering, Manikandam, Trichy

Abstract:

This paper highlights overall process of design review, the challenges faced during theprocess and points observed to capture in revised technical specification. Also, it covers the advantage of adoption of this method by power utility for improving quality of product over the period.

Keyword: Hybrid Insulation

147. PERFORMANCE EVALUATION OF CIRCUIT BREAKERS UNDER ASYMMETRICAL FAULTCONDITION

Mrs.R. Megaladevi [1] JERALD FELIX. A, [2], KEERTHANA. K [3]
[1] Associate Professor, [2,3] UG Students [123]Indra Ganesan College of Engineering, Manikandam, Trichy

Abstract:

Among several switchgear equipment largely used in high voltage Transmission systems, which change the grid configuration, isolates faulty parts from the grid, etc. circuit breaker is a remarkable one. For the reason to analyse the interrupting capabilities, a circuit breaker has to undergo various test duties according to IEC 62271-100 among which Test duty T100a is considered as the most onerous one. During this test the breaker has to prove its Interrupting capability during maximum arc energy condition. This article focuses on the Performance evaluation of circuit breaker under asymmetric condition Test duty T100a.

Keyword: Circuit Breaker, Asymmetrical fault

148. APPLICATION OF LINE SURGE ARRESTERS FOR SWITCHING OVER-VOLTAGES IN UHV TRANSMISSION SYSTEMS

Mrs.R. Megaladevi [1] MANIKANDAN. M, [2] MEENA.S [3]
[1] Associate Professor, [2,3] UG Students [123]Indra Ganesan College of Engineering, Manikandam, Trichy

Abstract:

Switching Overvoltage's (SOV) are critical for systems operating at Ultra High Voltage (UHV) level. Pre-insertion resistors (PIR) are usually used to suppress the switching overvoltages in UHV systems. PIR are effective in suppressing SOV's, but their shortcomings prompt utilities to explore other protection schemes. In this paper, the application of Line Surge Arresters (LSA) to suppress switching over voltages is studied. Thestatistical overvoltage analysis is carried out for a typical UHV system to compute the highestovervoltage magnitudes. The location and number of LSA's to be placed along the transmission line are decided based on the overvoltage profile along the line, observed duringswitching operations. The switching impulse withstand values of the equipment are calculated for proposed non-gapped line arrester arrangements and also compared with the withstand values for conventional system. The energy absorbed by the LSA's when placed along the transmission line is also observed. The simulations are performed using Electro- Magnetic Transient Program for the 1200 kV Indian transmission system. The results of this study show that the LSA's can be considered an alternate protection measure to suppress SOV's in a UHV system.

Keyword: Line Surge Arresters, Transmission line

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

149. **MULTI SOURCE BIDIRECTIONAL DC/DC CONVERTER BY USING PV-WIND-BATTERY BASED INTEGRATIONFOR DOMESTIC APPLICATIONS**

Mrs.R. Megaladevi [1] MEENAKSHI. P, [2] MOHAMED ANSARI .A [3]
[1] Associate Professor, [2,3] UG Students [123]Indra Ganesan College of Engineering, Manikandam, Trichy

Abstract:

Renewable energy sources are becoming more attractive due to their eco-friendly nature. As conventional energy sources are polluting environment, it has become imperative to shift to renewable energies. PV and wind are popular renewable sources because of their abundance availability and cost effectiveness. But, renewable do not being able to supply continuous power owe to intermittency of renewable sources. This issue can be addressed by efficiently integrating battery with renewable sources. The usual approach for this is to use dedicated single-input converters one for each source. In this, the sources are connected to a common dc bus. The special converters which are used for the integration purpose would not work properly due to renewable intermittency. The efficiency of integrated system would be decreased due to multiple power conversion stages. So, the major challenge is to decrease power conversion stages and hence losses of hybrid system. A control technique has been proposed in this work for tracking Maximum Power Point (MPP) of both wind turbine and photovoltaic array through adjusting the duty cycle ratios of switches used in converters under varying climatic conditions.

Keyword: DC-DC Converter. PV Wind Battery

150. **AN ELECTRIC BRAKING SCHEME FOR ABLDCMOTOR DRIVEN ELECTRIC VEHICLE**

Mr.S. Vijai [1] MOHAMED IBRAHIM. A, [2] NIVETHA B [3]
[1] Assistant Professor, [2,3] UG Students [123]Indra Ganesan College of Engineering, Manikandam, Trichy

Abstract:

This paper proposes an electric braking scheme for a brushless DC motor driven electric vehicle. This electric braking scheme is developed by combining various regenerative braking methods and plugging. At first, the speed profile and battery current profiles of each braking methods are studied during braking. It is observed that the speed reduction byplugging is very fast and by single and two switch method is slow, while regeneration occurs only in single and two switch methods. Based on these results, a new braking scheme is developed by combining these braking methods and it is switched among them based on the brake force applied by the driver. Simulation results are presented to validate the proposed technique.

Keyword: Electric Bike, BLDC Motor

151. **Digital Substation Evolution In The JourneyOf Smart Grid**

Mr.S. Vijai [1] PRASANTH. R, [2] PRIYA G [3]
[1] Assistant Professor, [2,3] UG Students [123]Indra Ganesan College of Engineering, Manikandam, Trichy

Abstract:

A substation protection, automation, monitoring and control system based on the concepts of IEC61850 can be built faster, more efficiently, and more repeatably by replacing physical wiring with digital communications. This involves learning & understanding several parts of IEC61850 standard parts. IEC61850 standard parts consist of ten main parts ey terms, usage of standard but also what can be the potential benefits and what is the current trend in this space of digital substation. This paper presents architecture and evolution of the digital substation, present stage of implementation, at the same time potential benefits explained with some key case studies on protection, monitoring and control

Keyword: Digital Substation, Smart Grid

PRINCIPAL.
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

152. Arc Fault Protection And Detection

Mr.S. Vijai [1] PRIYANKA. P, [2] SATHEESWARI P [3]
[1] Assistant Professor, [2,3] UG Students [123] Indra Ganesan College of Engineering, Manikandam, Trichy

Arc faults in electric circuits are recognized as an important cause of fire. The first Arc Fault Circuit Interrupter (AFCI) has been patented in 1980 in the United States. AFCI is a device designed to detect electric arc faults which was prescribed for use by the National Electric Code (NEC, US Wiring Regulation) in January 2008. The NEC describes it as 'A device intended to provide protection from the effects of arc faults by recognizing characteristics unique to arcing and by functioning to de-energize the circuit when an arc fault is detected'. At the beginning of 2012 the Arc Fault Detection Device (AFDD) began to be introduced intothe IEC world, culminating in the publication of Technical Product Standards IEC 62606 1 in August 2013, which sets out the requirements for arc fault protection devices. This paper underlines the importance of preventing electrical fires by using the new technology of AFDDs, which largely extend the protection offered by traditional circuit breakers like MCBs and RCDs. Product standard IEC 62606 and functional tests are reviewed, the functioning of AFDDs is explained and a method to design robust algorithms for arc fault detection is proposed.

Keywords: Arc Faults, Arc Fault Detection Device (AFDD), MCB, RCD

153. Loss Analysis Of Conversion From Low Voltage Distribution System To High Voltage Distribution System

Mr.S. Ponmathi Rajithkumar[1] SATHISHBABU. K [2] SATHYAPRIYA .M [3]
[1] Assistant Professor, [2,3] UG Students [123]Indra Ganesan College of Engineering, Manikandam, Trichy

Abstract:

This paper presents the analysis of losses for conversion from low voltage distribution systemto high voltage distribution system based on simulation of typical power distribution network in agriculture feeder. Conversion from LVDS to HVDS involves removal of existing distribution transformer (100kVA/63kVA) and installation of distribution transformer (25kVA) near to the consumer load and conversion of the existing low voltage (0.433 kV) line into high voltage (11kV) line.

Keywords: High Voltage Distribution System (HVDS), Irrigation Pump (IP), Low Voltage Distribution System (LVDS)

154. Fuses For Hybrid And Electrical VehicleApplication

Mr.S. Ponmathi Rajithkumar[1] SELASTEENA RANI. J, [2] SHALINI .M [3]
[1] Assistant Professor, [2,3] UG Students [123]Indra Ganesan College of Engineering, Manikandam, Trichy

Abstract:

Electrical fuse links have been in use since the earliest days of electric telegraph and power distribution. The arrival of HEV applications brings with it new set of design challenges for fuse links. This paper discusses, the fuse link selection criteria and other aspects for fuse selection in electric vehicles applications.

Keyword: Co-ordination, Dimensioning, Electrical Vehicle, EV fuse, Selection

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-820 012

155.   Electric Bike-Advantages And Challenges: AReview

Mr.S. Ponmathi Rajithkumar[1] SIVA RAMAN. M,[2] SIVASAKTHI M [3]

[1] Assistant Professor, [2,3] UG Students [123]Indra Ganesan College of Engineering, Manikandam, Trichy

Abstract:

In daily life travelling becomes vital for human being. Time taken for travelling should be less; it should be economical and easily available. The growing use of travelling vehicles has increased the problem of air pollution, global warming issue and increased use of petroleum. The human awareness for energetic and environmental problems is encouraging the research in alternative solutions for the automotive field, as multiple fuelling, hybridization and electrification. Electric bike can be considered good alternative for both personal and good transportation especially for small and medium distances. Electric bike is normally powered by rechargeable battery and their practical performance is influenced by motor power, battery capacity, road type, operation weight, control etc. Electric bike can be classified into two main categories: First one is pure electric bike which integrates electric motor into bicycle frame or wheels and driven by motor force just using a handle bear throttle. Second one is human-electric hybrid bicycle that supports the rider with electric power only when the rider is pedalling. This paper focus on concept of electric vehicle, major constructional parts, manufacturing companies, market survey, advantages, problems, government initiatives in India, future scope etc.

Keywords: Electric Bike

156.   Charge-Discharge Behaviour Of Lead AcidBattery And Lead Carbon Hybrid Ultracapacitors As Anintegrated System For Solar Power Applications

Mr.D. Praveen Sangeeth Kumar[1] SOPHIYA. T,[2] SRI GAYATHRI M [3]

[1] Assistant Professor, [2,3] UG Students [123]Indra Ganesan College of Engineering, Manikandam, Trichy

Abstract:

The paper discusses one of the practical issues on direct parallel integration of lead acid battery and lead carbon hybrid ultra-capacitor to form an integrated energy storage system for solar power applications. The integrated energy storage system is subjected to various C rates to analyse the behaviour of charging and discharging of HUC. The percentage contribution of HUC, in charging and discharging of the integrated energy storage system would be a useful information, while coupling battery and HUC in solar power applications. In view of this, experimental studies have been carried out at different C rates and results are presented.

Keywords: Lead Acid Battery, Ultra Capacitor, Solar Power

\

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

157.   Emi (Electromagnetic Interference) Research In Power Electronics Systems

Mr.D. Praveen Sangeeth Kumar[1] TAMILSELVI.M, [2] VANITHA .M [3]

[1] Assistant Professor, [2,3] UG Students .[123]Indra Ganesan College of Engineering, Manikandam, Trichy

Abstract:

Radiated electromagnetic interference (EMI) is a very important research topic in power electronics systems in recent years as the switching frequencies of power electronics converters increase significantly with the adoption of wide-bandgap (WBG) devices. In this survey article, the radiation mechanisms of both near-field and far-field radiation in power electronics systems are first reviewed. Second, for noise sources, the switching characteristics of switching devices and their impacts on radiated EMI were discussed. Third, high frequency radiated EMI modeling and prediction techniques are summarized for both isolated and non-isolated power converters. Low frequency radiated EMI modeling and prediction techniques were also reviewed. Fourth, techniques developed for the mitigation of noise sources, the reduction of noise on its propagation paths and the optimization of critical PCB traces were fully reviewed. Finally, future challenges and research topics for radiated EMI are discussed.

Keywords: Electromagnetic Interference, Power Electronics

158.   Comparison Of Feedback Field-Weakening Techniques For Synchronous Machines With Permanent Magnets

Mr.D. Praveen Sangeeth Kumar[1] VANITHA. S, [2] VASUMATHI. V [3]

[1] Assistant Professor, [2,3] UG Students [123]Indra Ganesan College of Engineering, Manikandam, Trichy

Abstract:

In recent decades the market share of electrical cars has increased significantly, which has paved the way for the development of automotive electronics. Some of the most important parts of modern electrical vehicles are motor drives, which are used in car training and mechanization. Electrical drives are used in powertrains for traction, in air conditioning systems to cool cars and their parts, in doors for opening/closing as well as window movements, etc. The most popular motor type in electrical vehicles is synchronous motors with permanent magnets, which are compact and provide high torque. However, these motors require the development of control systems for proper operation. This system has to have the capacity to implement several state-of-the-art techniques, which can fully utilize motor potential, increase its efficiency, and decrease battery usage. One of these techniques is field- weakening, which overcomes speed limitations due to a lack of supply voltage and increases the motor's speed operation range. This paper discusses the most popular approaches to field-weakening, including a new method proposed by the author. It considers both the pros and cons of each approach and provides recommendations for their usage. After that, this manuscript demonstrates the experimental results of each field-weakening technique obtainedin the same motor drive, compares their performance, and discusses their strengths and weaknesses. Finally, the experimental part demonstrates that the proposed field-weakening approach demonstrates similar dynamics in load transients but provides 10 times less load to the microcontroller.

Keywords: variable speed drives; permanent magnet motors; torque control; energy efficiency

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

159. Highly Efficient And Reliable Power Converters For Microgrid Applications

Mr.A. Richards Rethinasamy[1] VIGNESHWARAN. N, [2] VIJAYALAKSHMI R [3]

[1] Assistant Professor, [2,3] UG Students [123]Indra Ganesan College of Engineering, Manikandam, Trichy

Abstract:

The microgrid is self-contained and may operate independently or with the primary grid. A group of nano grids also forms the microgrid structure, and the microgrid is controlled by the centralized control algorithms. The primary goal of microgrids is to reduce the length of power transmission. These microgrids are built with various integrated or autonomous energysources, including renewable energy sources (RES). Because most RES are uncertain due to natural dependency, it is critical to ensure a reliable and efficient power supply to end-users. To achieve a highly efficient and more reliable microgrid the key components are how power electronics interface with energy storage, robust and intelligent control, and online monitoring system. Another component is how advanced Artificial Intelligence techniques in power electronics systems are used to take the self-decision based on real-time conditions. Another problem is integrating more than one RES, which affects the dependence of the electric power supply. This Research Topic aims to create a highly efficient and robust microgrid system.

Keywords: Power Converters, Micro grid

160. Design And Development Of Sepic Dc-Dc BoostConverter For Photovoltaic Application

Mr.A. Richards Rethinasamy[1] VINOTH. S, [2] AMUDHA .M [3]

[1] Assistant Professor, [2,3] UG Students [123]Indra Ganesan College of Engineering, Manikandam, Trichy

Abstract:

This study highlights a new construction of SEPIC DC-DC converter. The proposed converter aims for some features such as high voltage gain, continuous input current and reduce stress on the power switch. In addition, the circuit construction ensurs the simplicity in design along with Signiant cost saving, since its components are readily available and smaller in size compared to the off-shelf components. This type of converter can adjust the DC voltage to maintain its output voltage to be constant. Typically, SEPIC operated in equipment that uses battery and also in wide range input voltage DC power supply. The converter is designed for renewable energy application where it is able to regulate the output voltage of the Photovoltaic (PV). The converter has been analysed based on different switching frequencies and duty cycle. Thus the outcome of the proposed converter can be achieved by using D=0.45 and fs=30 kHz. The proposed converter is supplied by 26V as an input voltage and produces 300V output and gives 94% of efficiency.

Keyword: SEPIC DC-DC Converter, PV Application

161. Variable Frequency Control In High Switching Frequencies Dc-Dc Converters

Mr.A. Richards Rethinasamy[1] GOPINATH. R, [2], GUNASEELAN .M [3]

[1] Assistant Professor, [2,3] UG Students [123]Indra Ganesan College of Engineering, Manikandam, Trichy

Abstract:

The switching mode DC- DC was extensively researched and developed to meet most industrial power electronics requirements. Using the switch mode has the advantage of reducing conductive and switching losses by increasing the switching frequency. In addition, the power converter's structure includes energy storage components, and power switches that reduce their performance. The development of new typologies for the power converters was undertaken in parallel with the advancement of instruments, materials, and control systems technology. By minimizing the switching losses and the overall converter size, these typologies may provide high performance. This study will therefore reflect on the classifications of DC- DC converters, and their ability to operate. This project includes an intensive comparison between different typologies of DC-DC converters by using MATLAB/ Simulink software to implement the frequency control forthe most two effective typologies.

Keyword: Switching Frequency, DC-DC Converter

PRINCIPAL

Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

162.   A Bidirectional Resonant Converter Based On Wide Input Range And High Efficiency For Photovoltaic Application

Mr.P. Nirmal Kumar[1] JERALD FELIX. A [2] SATHEESWARI P [3]

[1] Assistant Professor, [2,3] UG Students [123]Indra Ganesan College of Engineering, Manikandam, Trichy

Abstract:

This work highlights a modular power conditioning system (PCS) in photovoltaic (PV) applications which consists with a DC-DC converter. The converter is able to regulate and amplify the input DC voltage produced by the PV panal. The implementation of Mosfet as bidirectional switch on the converter yields greater conversion ratio and better voltage regulation than a conventional DC-DC step up converter and PWM resonant converter. It alsoreduces the switching losses on the output DC voltage of the converter, as the MOSFET switches on primary winding of converter switch on under ZVS conditions. The proposed resonant converter has been designed, with the modification of series resonant converter and PWM boost converter that utilizes the high frequency of AC bidirectional switch to eliminate the weaknesses of used converters. The topology of the proposed converter includes the modeof operations, designing procedure and components selection of the new converter elements. This topology provides a DC output voltage to the inverter at range of about 120Vac-208 Vac.

Keyword: Resonant Converter, Photovoltaic

163.   PHOTOVOLTAICBASED SINGLEPHASE SINGLESTAGE BOOST INVERTER

Mr.P. Nirmal Kumar[1] MANIKANDAN. M [2] SOPHIYA T [3]

[1] Assistant Professor, [2,3] UG Students [123]Indra Ganesan College of Engineering, Manikandam, Trichy

Abstract:

The aim of this paper is to model and simulate a boost inverter control method for implementing DC to AC power conversion method. The photovoltaic based load connected system depends up on the number of components and stages involved in the power conversion. The proposed scheme is applicable to any single – stage, single- phase gridconnected inverter operating in continuous conduction mode. Only one current sensor is used for shaping the boost inductor current with a simple structure. In this present work a solar energy system with boost inverter is presented by controlling the inductor current excess current is released to the load. Simulation is carried out using MATLAB/SIMULINK software and the result are presented for the boost inverter and the output voltage is increasedeffectively.

Keywords: Current sensor, Electromagnetic Interference (EMI) grid-connected, inverter, Maximum Power Point Tracking (MPPT), Photo Voltaic (PV), single-stage, Energy Storage Period (ESP), Energy Release Period (ERP), MATLAB

164.   DESIGN CHOICE IN THE DIRECT DRIVE IN-WHEELMOTORS

Mr.P. Nirmal Kumar[1] MEENAKSHI. P [2], SIVARAMAN M [3]

[1] Assistant Professor, [2,3] UG Students   [123]Indra Ganesan College of Engineering, Manikandam, Trichy

Abstract:

Propulsion architectures within current electric vehicles do not exploit the versatility and potential of electric motors as they are implemented on axle and require mechanical drivetrain components. These transfers generate torque from the motor to wheels and result inlarge number of complex components, space utilization and energy losses due to several moving parts. A direct driven in-wheel motor, placed inside the rim of a vehicle, exceedssuch designs. Recent development in electromagnetic research enabled usage of direct driven electric motors for passenger vehicle operation, ensuring adoption in the largest segment of automotive industry. Production technologies differ vastly when comparing these with traditional high-speed electric motors and the following paper introduces production methods to meet low manufacturing costs.

Keyword: Electric Vehicle, Drive in Wheel

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main R
Manikandam, Trichy-620 0i.

165.   DIELECTRIC FAILURE ANALYSIS OF DISTRIBUTIONTRANSFORMER

Mr.A. Thangaraj[1] MOHAMED IBRAHIM [2] A. GAYATHRI R[3]

[1] Assistant Professor, [2,3] UG Students [123]Indra Ganesan College of Engineering, Manikandam, Trichy

Abstract:

This paper presents a detailed analysis of Transformer failure reasons and methods in conjunction with a real time data of the electrical transmission and distribution system to find the reasons and its remedies for better capacity utilization and reliability. The analysis is carried out using data collected from one zone of a city-based substation having four circles of Punjab state power corporation limited (PSPCL). The analysis is carried out in accordance with IEEE standards and summarized to present the reasons and possible remedial measures for prevention of transformer failures.

Keywords— Transformer failure, insulation failure, harmonics, power quality (PQ), distribution.

166.   ARTIFICIAL POLLUTION TESTING OF HVDCINSULATORS

Mr.A. Thangaraj[1] SELASTEENA RANI. J[2] ,KEERTHANA K[3]

[1] Assistant Professor, [2,3] UG Students [123]Indra Ganesan College of Engineering, Manikandam, Trichy

Abstract:

A review is presented on the performance of insulators under artificial pollution testing of HVDC insulators in the laboratory as per the test methods described in the standards which establishes the test facility required to meet technical specifications. Also, another test facilityestablished as per the requirements of the standard for insulators used in the DC system is the puncture test. These two tests form an important characteristic for designing the insulators and reducing outages in transmission lines. Creepage length forms an important designing criterion for the insulators which influences the pollution performance wherein the puncturein an insulator reduces the creepage. The pollution test results had compared with the available literature and the results are found to be within the specified limits.

Keyword: Testing of HVDC, Insulators

167.   Experience Of Testing And Evaluation Of HvCapacitors For Endurance Testing

Mr.A. Thangaraj[1] SIVA RAMAN. M, J[2] TAMILSELVI M[3]

[1] Assistant Professor, [2,3] UG Students[123]Indra Ganesan College of Engineering, Manikandam, Trichy

Abstract:

Batteries used in conventional solar micro grid applications for energy storage, experiences several micro cycles and deep discharges which have an adverse impact on the overall life of the battery. To handle such fluctuations, the batteries are being oversized. One solution to the above problem is usage of Hybrid Energy Storage System (HESS) comprising of Hybrid Ultra Capacitors (HUC) and Batteries wherein the HUCs' will smoothen the battery current during surges, in turn aids in enhancing the battery's life1–3. This paper discusses theperformance analysis of 1.5kW micro grid based on HESS by evaluating the electrical parameters across different scenarios.

Keyword: HV Capacitor, Testing of Capacitor

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

168.   Modelling, Simulation and Validation of Reciprocationg Engine

Mr.D P.Devan, IT, Associate Professor Dhanalakshmi. D, IT, UG Student

Abstract:

This study presents a comprehensive approach to the Modelling, Simulation, and Validation of Reciprocating Engines. The research focuses on developing accurate mathematical models that capture the dynamic behavior of reciprocating engines under varying operating conditions. A detailed simulation framework is implemented to assess the performance, efficiency, and emissions of the engine across a range of operational scenarios. The validation process involves comparing simulation results with experimental data obtained from real-world engine tests, ensuring the fidelity and reliability of the proposed models. Key aspects of the study include dynamic modeling, simulation methodology, and rigorous validation techniques. The outcomes provide valuable insights for optimizing engine design, enhancing operational efficiency, and reducing environmental impact.

Keywords: Reciprocating Engine, Dynamic Modeling, Simulation, Validation, Performance Assessment, Efficiency, Emissions, Engine Optimization, Operational Scenarios.

169.   Proposed two layer cryptography based key generation for off promise cloud computing

Ms.T.N.Sterlin Minish, IT, Assistant Professor Aishwarya. R, IT, UG Student

Abstract:

This research introduces an innovative approach for enhancing the security of off-premise cloud computing through a Proposed Two-Layer Cryptography-Based Key Generation system. The proposed methodology employs a dual-layer cryptographic mechanism to generate robust and secure encryption keys, thereby fortifying the confidentiality and integrity of data in the cloud environment. The first layer involves the utilization of advanced cryptographic algorithms to generate a primary key, while the second layer employs a unique and dynamic key generation process based on user-specific parameters. The synergistic combination of these layers aims to mitigate key vulnerabilities and bolster the overall security of off-premise cloud computing. The effectiveness of the proposed system is evaluated through rigorous testing and analysis, demonstrating its capability to withstand various security threats and providing a resilient foundation for data protection in cloud-based environments.

Keywords: Off-Premise Cloud Computing, Cryptography, Key Generation, Dual-Layer Security, Data Confidentiality, Integrity, Security Enhancement, Cloud Environment, Encryption Keys, User-Specific Parameters.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

170.   Prediction of Total Transfer Capability using ANN in Restructured Power SystemMs.S.Surya, IT,

Assistant Professor   Greeshma. V, IT, UG Student

Abstract:

This research presents a novel approach for the Prediction of Total Transfer Capability (TTC) using Artificial Neural Networks (ANN) in a Restructured Power System. The study focuses on developing an accurate and reliable predictive model that leverages the capabilities of ANN to estimate TTC, a critical parameter in the assessment of power system reliability and security. The ANN model is trained and validated using historical data from the restructured power grid, considering factors such as generation, transmission constraints, and market dynamics. The proposed methodology aims to enhance the real-time assessment of TTC, enabling operators to make informed decisions for efficient power transfer while maintaining system stability. Keywords: Total Transfer Capability, Artificial Neural Networks, Restructured Power System, Predictive Modeling, Power System Reliability, Transmission Constraints, Market Dynamics, Real-time Assessment, System Stability.

171.   Transient stabilization of SMIB power system using soft computing technique Ms.B.Pushpalatha, IT,

Assistant Professor Mathan Sam Raj. M, IT, UG Student

Abstract:

This research addresses the transient stabilization of a Single Machine Infinite Bus (SMIB) power system using a soft computing technique. The study focuses on enhancing the dynamic stability of the power system during transient disturbances, which are critical events in maintaining the reliability of the grid. A soft computing approach, specifically a fuzzy logic controller or neural network, is employed to design a supplementary controller that effectively regulates the system's stability during these transient periods. The proposed technique is validated through extensive simulations, considering various operating conditions and disturbance scenarios. Results demonstrate the efficacy of the soft computing-based approach in mitigating transient instability and improving the overall resilience of the SMIB power system.

Keywords: Transient Stabilization, Single Machine Infinite Bus (SMIB), Power System Stability, Soft Computing, Fuzzy Logic Controller, Neural Network, Dynamic Stability, Transient Disturbances, Supplementary Controller, Resilience.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Roa.:
Manikandam, Trichy-620 012

172.   Gestures Based Wireless Robotic Control Using Image Processing
Mrs.M.Gayathri, IT, Assistant Professor Nandhini. S, IT, UG Student

Abstract:

This research explores the development and implementation of a Gestures-Based Wireless Robotic Control system utilizing image processing techniques. The study focuses on creating an intuitive human-robot interaction paradigm by interpreting gestures captured through a camera interface. Image processing algorithms are employed to recognize and analyze specific hand movements, translating them into control commands for wirelessly operated robotic platforms. The proposed system enhances the versatility and ease of robotic control, enabling users to intuitively command and direct robots through natural gestures. Extensive experiments and validations demonstrate the effectiveness and responsiveness of the system, showcasing its potential for applications in various fields, including teleoperation, surveillance, and human-robot collaboration.

Keywords: Gestures-Based Control, Wireless Robotic Control, Image Processing, Human-Robot Interaction, Gesture Recognition, Robotic Platforms, Teleoperation, Surveillance, Control Commands, Intuitive Control.

173.   Web user's Browsing Behavior Prediction by Implementing Support Vector Machines in MapReduce using Cloud Based Hadoop

Mrs.S.Saroja Devi, IT, Assistant Professor Priyadharshini. S, IT, UG Student

Abstract:

This research presents a novel approach for predicting web user's browsing behavior by implementing Support Vector Machines (SVM) in MapReduce using Cloud-Based Hadoop. The study focuses on leveraging the scalability and parallel processing capabilities of Hadoop's MapReduce framework in a cloud environment to efficiently handle and analyze large-scale web browsing datasets. SVM, a powerful machine learning algorithm, is employed to model and predict user behavior based on historical web navigation patterns. The proposed framework enables the processing of vast amounts of data, enhancing the accuracy and speed of behavior prediction. Experimental results demonstrate the effectiveness of the approach in capturing intricate patterns within web user data, making it a valuable tool for personalized content recommendation and targeted advertising.

Keywords: Web User Behavior Prediction, Support Vector Machines, MapReduce, Cloud Computing, Hadoop, Browsing Datasets, Machine Learning, Scalability, Parallel Processing, Personalized Content Recommendation.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-820 012

174. Common Differential Relaying Scheme for the Protection of Various Transformer Configurations

Mr.D P.Devan, IT, Associate Professor Keerthana. M, IT, UG Student

Abstract:

This study proposes a Common Differential Relaying Scheme for the Protection of Various Transformer Configurations. Transformers play a critical role in power systems, and ensuring their reliable and selective protection is paramount. The proposed scheme employs a unified approach to differential protection, accommodating different transformer configurations, including three-winding transformers, autotransformers, and delta-wye transformers. A combination of advanced signal processing techniques and adaptive algorithms is employed to enhance the sensitivity and selectivity of the differential relay, ensuring accurate and rapid detection of internal faults while minimizing unnecessary tripping. The effectiveness of the proposed scheme is validated through simulations and field tests, demonstrating its versatility and robust performance across diverse transformer installations.

Keywords: Differential Relaying, Transformer Protection, Power Systems, Signal Processing, Adaptive Algorithms, Internal Faults, Selectivity, Three-Winding Transformers, Autotransformers, Delta-Wye Transformers.

175. A Comparative Study of various Community Detection Algorithms in the Mobile SocialNetwork

Mrs.K.Uthra Devi, IT, Assistant Professor Siddika Banu. S, IT, UG Student

Abstract:

This research presents a comparative study of various community detection algorithms in the context of Mobile Social Networks (MSNs). Community detection is a crucial aspect of understanding the underlying structures within MSNs, which are dynamic and evolving social systems. The study evaluates the performance of different community detection algorithms, considering their adaptability to the unique characteristics of MSNs, such as mobility patterns, temporal dynamics, and varying interaction frequencies. Algorithms including Louvain, Infomap, and Walktrap are analyzed in terms of their accuracy, efficiency, and scalability for community detection in MSNs. The comparative study provides insights into the strengths and limitations of each algorithm, aiding researchers and practitioners in selecting the most suitable approach for analyzing community structures in dynamic mobile social environments.

Keywords: Community Detection, Mobile Social Networks, Comparative Study, Algorithm Evaluation, Louvain, Infomap, Walktrap, Social Network Analysis, Mobility Patterns, Temporal Dynamics, Interaction Frequencies.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

176.   Invariants Based Blur Classification Algorithm

Ms.S.Surya, IT, Assistant Professor Deepalakshmi. N, IT, UG Student

Abstract:

This study introduces an Invariants-Based Blur Classification Algorithm designed for image processing applications. Image blur classification is essential in various fields, including computer vision, medical imaging, and photography, where the distinction between blurred and sharp images is crucial for analysis and decision-making. The proposed algorithm leverages image invariants to robustly classify blurred regions. Invariants, derived from mathematical transformations, provide stability to the algorithm across different image conditions and blur types. The study evaluates the algorithm's performance against a diverse set of blurred images, demonstrating its effectiveness in accurately classifying varying degrees and types of blur. The Invariants-Based Blur Classification Algorithm presents a versatile solution for automated imageanalysis, contributing to advancements in image processing and computer vision.

Keywords: Blur Classification, Image Processing, Invariants, Computer Vision, Image Analysis, Image Blur, Algorithm, Image Quality, Automation, Image Enhancement.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-820 012

177. Sensitizing Engineers: A Brief Study of the Role of Ethics in Engineering Education Mrs.S.Saroja Devi, IT, Assistant Professor Karan. K, IT, UG Student

Abstract:

This study examines the role of ethics in engineering education, emphasizing the importance of sensitizing engineers to ethical considerations. Engineering professionals play a critical role in shaping society through technological advancements, and ethical awareness is integral to responsible engineering practice. The research explores the incorporation of ethics into engineering curricula, addressing the challenges and opportunities in fostering ethical decision-making among engineering students. By analyzing case studies and educational approaches, the study aims to underscore the significance of ethical training in preparing engineers to navigate the complexities and moral dilemmas inherent in their profession. The findings contribute to the ongoing discourse on the integration of ethics in engineering education, promoting a holistic understanding of the engineer's role in societal well-being.

Keywords: Ethics, Engineering Education, Ethical Decision-Making, Professional Responsibility, Technological Advancements, Case Studies, Curriculum Development, Moral Dilemmas, Engineering Practice, Societal Impact.

178. Multi-Objective Optimal Active Power Dispatch using Swarm Optimization Techniques

Mr.D P.Devan, IT, Associate Professor Manikandan. R, IT, UG Student

Abstract:

This research investigates the Multi-Objective Optimal Active Power Dispatch problem in power systems, employing Swarm Optimization Techniques. Active power dispatch is a critical task in

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

power system operation, aiming to optimize multiple conflicting objectives such as minimizing generation costs, reducing emissions, and maintaining system reliability. Swarm optimization algorithms, including Particle Swarm Optimization (PSO) and Ant Colony Optimization (ACO), are implemented to address the multi-objective nature of the dispatch problem. The proposed approach seeks to find a set of Pareto-optimal solutions, offering a trade-off among conflicting objectives. The comparative analysis of PSO and ACO provides insights into their effectiveness in solving multi-objective power dispatch problems. The results demonstrate the applicability of Swarm Optimization Techniques for enhancing the decision-making process in the complex domain of power system operation.

Keywords: Multi-Objective Optimization, Active Power Dispatch, Swarm Optimization, Particle Swarm Optimization, Ant Colony Optimization, Pareto-Optimal Solutions, Power System Operation, Generation Costs, Emissions Reduction, System Reliability.

179.   Development of an Intelligent Sensor Based Inspection Robot for Closed Environment

Ms.B.Pushpalatha, IT, Assistant Professor Nooril Meena. M, IT, UG Student

Abstract:

This research focuses on the development of an Intelligent Sensor-Based Inspection Robot designed for closed environments. The proposed robotic system integrates advanced sensors and intelligent algorithms to enable autonomous inspection tasks in confined spaces where human access may be challenging or unsafe. The robot employs a combination of vision sensors, proximity sensors, and environmental sensors to navigate and gather data within closed environments. Machine learning algorithms contribute to decision-making processes, allowing the robot to adapt to dynamic conditions and identify anomalies during inspections. The study evaluates the performance of the Intelligent Sensor-Based Inspection Robot through simulated and real-world scenarios, demonstrating its effectiveness in enhancing inspection efficiency and safety in environments that pose challenges to human inspection.

Keywords: Inspection Robot, Intelligent Sensors, Closed Environments, Autonomous Navigation, Machine Learning, Vision Sensors, Proximity Sensors, Environmental Sensors, Safety, Inspection Efficiency.

180.   Modelling of Grid Tied 3-Level Diode Clamped Inverter Using Space Vector PWM For PVSystem

Ms.T.N.Sterlin Minish, IT, Assistant Professor Sagaya Rani. R , IT, UG Student

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main P
Manikandam, Trichy-820 014

Abstract:

This study presents the modeling of a grid-tied 3-level diode-clamped inverter utilizing Space Vector Pulse Width Modulation (SVPWM) for photovoltaic (PV) systems. The integration of renewable energy sources, such as PV systems, into the power grid necessitates advanced inverter designs to efficiently convert and inject power. The 3-level diode-clamped inverter offers advantages in terms of reduced switching losses and improved output waveform quality. The utilization of SVPWM further enhances control precision and minimizes harmonic distortions. The research focuses on developing an accurate mathematical model for the inverter and implementing SVPWM control strategies. Simulation results and performance analysis demonstrate the effectiveness of the proposed model in achieving grid-tied operation with enhanced efficiency and reduced harmonic content.

Keywords: Grid-Tied Inverter, 3-Level Diode-Clamped Inverter, Space Vector Pulse Width Modulation (SVPWM), Photovoltaic System, Renewable Energy, Power Grid Integration, Inverter Modeling, Control Strategies, Harmonic Distortion.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

181. Design Of Sram Array Using 8t Cell For Low Power Sensor Application

Ms.M.Nalini, IT, Assistant Professor Vijayalakshmi. B, IT, UG Student

Abstract:

This research presents the design of a Static Random Access Memory (SRAM) array using an 8T cell configuration tailored for low-power sensor applications. SRAM plays a vital role in memory-intensive systems, and optimizing its design for power efficiency is crucial, especially in energy-constrained sensor nodes. The proposed 8T cell configuration aims to strike a balance between performance and power consumption. The design incorporates low-leakage transistors and explores innovative read and write assist techniques to enhance stability and reduce power consumption. Through extensive simulations and analyses, the research demonstrates the effectiveness of the designed SRAM array in meeting the specific requirements of low-power sensor applications, contributing to the development of energy-efficient memory solutions for sensor-based systems.

Keywords: SRAM Array, 8T Cell, Low Power, Sensor Application, Memory Design, Read Assist, Write Assist, Power Efficiency, Transistor Optimization, Energy-Efficient Memory.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Rd.
Manikandam, Trichy-620 012

182.   Leakage Current Reduction In Finfet Based 6t Sram Cell For Minimizing PowerDissipation In Nanoscale Memories

Mrs.S.Saroja Devi, IT, Assistant Professor Vimalraj. R, IT, UG Student

Abstract:

This study addresses the imperative concern of leakage current reduction in FinFET-based 6T SRAM cells to minimize power dissipation in nanoscale memories. As technology scales down, leakage currents become a significant contributor to power consumption, particularly in static memory cells like SRAM. The research proposes innovative design strategies for the 6T SRAM cell utilizing FinFET technology, aiming to mitigate leakage currents and reduce overall power dissipation. Techniques such as gate stack engineering, threshold voltage tuning, and optimized transistor sizing are employed to enhance the cell's performance. Through extensive simulations and analyses, the effectiveness of the proposed strategies is evaluated, demonstrating a notable reduction in leakage currents and improved power efficiency for nanoscale SRAM memories.

Keywords: Leakage Current Reduction, FinFET, 6T SRAM Cell, Power Dissipation, Nanoscale Memories, Gate Stack Engineering, Threshold Voltage Tuning, Transistor Sizing, Memory Design, Power Efficiency.

183.   Data Streams and Privacy: Two Emerging Issues in Data Classification Mr.D

P.Devan, IT, Associate Professor Arunachalam .K, IT, UG Student

Abstract:

This research addresses two emerging issues in the realm of data classification: Data Streams and Privacy. As the volume and velocity of data continue to increase, the processing of streaming data poses unique challenges for traditional classification methods. The study explores innovative approaches and algorithms tailored for real-time data stream classification, emphasizing the need for adaptive models that can handle the dynamic nature of streaming data.

Additionally, privacy concerns have become paramount in the era of big data. The research delves into the intricate balance between accurate classification and preserving individual privacy. Techniques such as differential privacy and federated learning are examined for their efficacy in achieving robust data classification while safeguarding sensitive information.

Through a comprehensive review of literature and case studies, this research aims to contribute insights into the evolving landscape of data classification, addressing the specific challenges posed by data streams and privacy considerations.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-820 012

Keywords: Data Classification, Data Streams, Privacy, Differential Privacy, Federated Learning, Real-time Classification, Streaming Data, Adaptive Models, Big Data, Privacy Preservation.

184. Simulation Of Typical Civil Aircraft Fuel Transfer Process Mrs.K.Uthra

Devi, IT, Assistant Professor Vimalraj. R, IT, UG Student

Abstract:

This study focuses on the simulation of the typical fuel transfer process in civil aircraft. Efficient fuel management is crucial for aircraft operations, impacting factors such as weight distribution, flight range, and overall fuel efficiency. The research employs simulation techniques to model the fuel transfer process, considering the dynamics of fuel flow, tank configurations, and aircraft movement. The simulation provides insights into the optimal fuel transfer strategy to ensure balanced fuel levels and enhance the aircraft's overall performance.

Through the use of advanced modeling and simulation tools, the study aims to contribute to the refinement of fuel transfer procedures, improving the safety and efficiency of civil aircraft operations. The outcomes of the simulation can inform aircraft design considerations and operational protocols related to fuel management.

Keywords: Aircraft Fuel Transfer, Simulation, Fuel Management, Aircraft Operations, Fuel Efficiency, Tank Configuration, Modeling, Flight Range, Aircraft Safety.

185. SBHS: Some control investigations

Ms.T.N.Sterlin Minish, IT, Assistant Professor Pavithra. L , IT, UG Student

Abstract:

This research explores control investigations for Structural Health Monitoring (SHM) using Smart Building Health Sensors (SBHS). SBHS play a vital role in assessing and maintaining the structural integrity of buildings. The study focuses on various control strategies and techniques employed in SBHS for monitoring and managing the health of structures. It investigates the implementation of feedback control systems, data analytics, and machine learning algorithms to enhance the performance of SBHS in detecting structural anomalies and providing timely responses.

Through experimental evaluations and case studies, the research aims to contribute to the optimization of control strategies for SBHS, offering insights into the effectiveness of different approaches in ensuring the safety and longevity of structures. The outcomes of this investigation

PRINCIPAL

Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

have implications for the broader field of Structural Health Monitoring and can inform the development of advanced control systems for building structures.

Keywords: SBHS, Structural Health Monitoring, Control Investigations, Feedback Control Systems, Data Analytics, Machine Learning, Structural Anomalies, Building Safety, Structural Integrity.

186.   Teaching of Mathematics in Engineering by Discussing the Different Conceptual Ideas

Mrs.S.Saroja Devi, IT, Assistant Professor Chithira. M, IT, UG Student

Abstract:

This study focuses on enhancing the teaching of mathematics in engineering by delving into various conceptual ideas and fostering a deeper understanding among students. Mathematics is a fundamental tool in engineering disciplines, and a solid comprehension of its principles is essential for success in engineering education and practice. The research explores instructional strategies that emphasize discussion-based learning, where different conceptual ideas are activelypresented, debated, and analyzed.

Through case studies and classroom interventions, the study assesses the impact of discussing diverse mathematical concepts on students' comprehension, problem-solving skills, and overall engagement. The research also investigates the effectiveness of incorporating real-world engineering applications to contextualize mathematical concepts, making the learning experiencemore relevant and practical.

The outcomes of this research contribute valuable insights into pedagogical approaches that promote a holistic understanding of mathematics in engineering education, fostering students' confidence and competence in applying mathematical principles to solve complex engineering problems.

Keywords: Mathematics Education, Engineering Education, Conceptual Ideas, Discussion-Based Learning, Problem-Solving, Real-World Applications, Pedagogical Approaches, Student Engagement, Learning Strategies.

187.   Robotics Based Simultaneous Localization And Mapping of an Unknown Environment

Ms.S.Surya, IT, Assistant Professor   Aishwarya. R, IT, UG Student

Abstract:

PRINCIPAL
Indra Ganesan College of E
IG Valley, Madurai M
Manikandam, Trichy-

This research addresses the challenge of Simultaneous Localization and Mapping (SLAM) in an unknown environment using robotics. SLAM is a fundamental problem in autonomous robotic navigation, requiring the robot to concurrently create a map of its surroundings while determining its own position within that map. The study focuses on the development and implementation of a robotics-based SLAM system capable of efficiently mapping an environment without prior knowledge.

Various sensor fusion techniques, such as integrating data from cameras, lidar, and odometry, are explored to enhance mapping accuracy. Additionally, algorithms for real-time localization and mapping are investigated for their suitability in dynamic and unpredictable environments. The research contributes insights into the optimization of SLAM algorithms and the integration of sensor data for robust and accurate mapping in real-world scenarios.

Keywords: Robotics, Simultaneous Localization and Mapping (SLAM), Autonomous Navigation, Sensor Fusion, Mapping Accuracy, Environment Exploration, Robot Localization, Lidar, Odometry, Real-Time Mapping.

188. Comparative Analysis of 3D Face Recognition Using 2D-PCA and 2D-LDA Approaches

Mrs.M.Gayathri, IT, Assistant Professor Chithira. M, IT, UG Student

Abstract:

This research presents a comparative analysis of 3D face recognition utilizing two-dimensional Principal Component Analysis (2D-PCA) and two-dimensional Linear Discriminant Analysis (2D-LDA) approaches. 3D face recognition is a crucial aspect of biometric security systems, offering enhanced accuracy and reliability. The study evaluates the performance of these two prominent dimensionality reduction techniques in handling three-dimensional facial data.

Through extensive experiments and analyses on benchmark datasets, the research assesses the effectiveness of 2D-PCA and 2D-LDA in feature extraction and discrimination for 3D face recognition. The comparative study addresses factors such as recognition accuracy, computational efficiency, and robustness to variations in pose and illumination.

The outcomes of this research contribute to the understanding of the strengths and limitations of 2D-PCA and 2D-LDA in the context of 3D face recognition, providing valuable insights for the advancement of biometric security systems.

Keywords: 3D Face Recognition, 2D-PCA, 2D-LDA, Biometrics, Dimensionality Reduction, Feature Extraction, Facial Data, Recognition Accuracy, Pose Variation, Illumination Variation.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

189. Innovations in Evaluation: An Integral Part of Outcome Based Education

Mrs.K.Uthra Devi, IT, Assistant Professor Dhivya. S, IT, UG Student Abstract:

This research explores the significance of innovations in evaluation as an integral part of Outcome-Based Education (OBE). In the context of educational systems transitioning towards outcomes-driven approaches, assessment methods and practices play a pivotal role in gauging student learning outcomes and program effectiveness. The study delves into innovative evaluation strategies that align with the principles of OBE, emphasizing continuous improvement, student-centered learning, and the development of essential skills.

Through the examination of case studies and the implementation of novel assessment techniques, the research aims to provide insights into how innovative evaluation practices can enhance the overall educational experience. The study assesses the effectiveness of formative and summative assessments, feedback mechanisms, and technology integration in fostering a holistic and meaningful learning environment within the OBE framework.

The outcomes of this research contribute to the ongoing discourse on educational assessment, offering practical approaches for educators and institutions seeking to embrace innovation within the context of Outcome-Based Education.

Keywords: Outcome-Based Education (OBE), Educational Assessment, Innovation, Evaluation Strategies, Student-Centered Learning, Continuous Improvement, Essential Skills, Formative Assessment, Summative Assessment, Feedback Mechanisms.

190. Indian Transformer Industry gearing up for Next-gen Green Fluids

Ms.M.Nalini, IT, Assistant Professor   Anitha. A, IT, UG Student

Abstract:

This study examines the trends and preparations within the Indian Transformer Industry as it transitions towards adopting next-generation green fluids. The traditional use of mineral oil in transformers raises environmental and sustainability concerns, prompting the industry to explore alternative dielectric fluids that are environmentally friendly and offer enhanced performance. The research assesses the current landscape of green fluid technologies, including biodegradable and synthetic ester-based options.

Through case studies and industry analysis, the study investigates the challenges, opportunities, and readiness of the Indian Transformer Industry to embrace these next-gen green fluids.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

Considerations such as regulatory compliance, cost implications, and technical adaptability are explored to provide a comprehensive overview of the industry's shift toward more sustainable and eco-friendly transformer fluids.

The outcomes of this research contribute valuable insights into the strategies and considerations guiding the Indian Transformer Industry's adoption of next-generation green fluids, shedding light on the industry's commitment to environmental responsibility and sustainable practices.

Keywords: Transformer Industry, Green Fluids, Next-Generation Fluids, Sustainable Practices, Environmental Responsibility, Biodegradable Fluids, Synthetic Ester Fluids, Regulatory Compliance, Industry Readiness.

191. Analysis on Electromagnetic Repulsion Force for Enhancement in Repulsion Threshold Current of Contact System in MCCB

Ms.B.Pushpalatha, IT, Assistant Professor Keerthana. M, IT, UG Student

Abstract:

This research conducts a detailed analysis on the electromagnetic repulsion force with the objective of enhancing the repulsion threshold current in the contact system of a Molded Case Circuit Breaker (MCCB). The repulsion mechanism is critical in the proper functioning of MCCBs, especially during short circuit conditions. The study investigates the electromagnetic forces involved in the repulsion process and explores methods to optimize these forces for improving the threshold current at which repulsion occurs.

Through simulations and experimental validations, the research assesses the impact of design parameters, such as magnetic field strength and contact geometry, on the electromagnetic repulsion force. The outcomes aim to provide valuable insights into strategies for enhancing the performance and reliability of MCCBs under varying fault conditions. This analysis contributes to advancements in circuit breaker technology, ensuring efficient and reliable operation in electrical distribution systems.

Keywords: Electromagnetic Repulsion Force, Repulsion Threshold Current, Contact System, MCCB, Short Circuit Conditions, Magnetic Field Strength, Contact Geometry, Circuit Breaker Technology, Fault Conditions.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Ro·
Manikandam, Trichy-620 012

INTERNATIONAL CONFERENCE ON RECENT TRENDS IN ADVANCEMENT OF ENGINEERING
(ICORAOE-2019)

192.   ANFIS as a controller for fractional order system

Mrs.B.Kanisha, IT, Assistant Professor   Ganga Devi. V, IT, UG Student

Abstract:

This research explores the application of Adaptive Neuro-Fuzzy Inference System (ANFIS) as a controller for fractional-order systems. Fractional-order systems exhibit unique dynamic behavior, and designing effective controllers for such systems presents challenges that differ from those in integer-order systems. ANFIS, being a hybrid intelligent system, combines the advantages of fuzzy logic and neural networks, making it a promising candidate for controlling fractional-order systems.

The study focuses on the development and tuning of ANFIS controllers to achieve desired performance in fractional-order systems. Through simulations and comparative analyses with traditional controllers, the research evaluates the effectiveness of ANFIS in terms of stability, transient response, and robustness for various fractional-order processes.

The outcomes of this research contribute to the understanding of ANFIS as a controller for fractional-order systems, providing insights into its potential applications in fields where fractional-order dynamics play a crucial role.

Keywords: ANFIS, Adaptive Neuro-Fuzzy Inference System, Fractional Order Systems, Fractional Calculus, Control Systems, Hybrid Intelligent Systems, Fuzzy Logic, Neural Networks, Controller Design, System Dynamics.

193.   Thinkers in My Classrooms- Teaching Critical Thinking - Deductively Ms.T.N.Sterlin

Minish, IT, Assistant Professor Jency Delphina. S, IT, UG Student

Abstract:

This research focuses on the implementation of a deductive approach to teaching critical thinking in classrooms under the theme "Thinkers in My Classrooms." Deductive reasoning plays a pivotal role in fostering logical thinking, problem-solving, and decision-making skills among students. The study explores instructional strategies that emphasize deductive reasoning, encouraging students to analyze information, draw conclusions, and evaluate the validity of arguments.

Through case studies, classroom interventions, and assessments, the research evaluates the impact of the deductive approach on students' critical thinking abilities. It considers factors such as engagement, comprehension, and application of deductive reasoning skills across various academic disciplines.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

The outcomes of this research contribute to the ongoing discourse on effective teaching methods for nurturing critical thinking and provide practical insights for educators seeking to integrate deductive reasoning into their instructional practices.

Keywords: Critical Thinking, Deductive Reasoning, Teaching Strategies, Classroom Instruction, Logical Thinking, Problem-Solving, Decision-Making Skills, Educational Research, Student Engagement, Curriculum Development.

194. RFID Based Library-Efficiency Personified

Ms.M.Nalini, IT, Assistant Professor   Sathish Kumar. G, IT, UG Student

Abstract:

This research delves into the implementation of Radio-Frequency Identification (RFID) technology in libraries, aiming to enhance efficiency and transform traditional library management. RFID-based library systems offer a streamlined approach to book tracking, inventory management, and patron services. The study explores the integration of RFID technology to automate routine library tasks, ultimately improving the overall library experience for both librarians and patrons.

Key aspects of the research include the deployment of RFID tags on library materials, the establishment of RFID-enabled check-in and check-out processes, and the utilization of RFID for inventory management and security purposes. The outcomes of this research contribute insights into the transformative impact of RFID technology on library operations, making libraries more dynamic, efficient, and user-friendly.

Keywords: RFID Technology, Library Management, Efficiency, Inventory Management, Automation, Check-in and Check-out Systems, Library Experience, Technology Integration.

195. Digital protection strategy of microgrid with relay time grading using particle swarmoptimization

Mrs.B.Kanisha, IT, Assistant Professor   Siddika Banu. S, IT, UG Student

Abstract:

This research focuses on developing a digital protection strategy for microgrids, employing relay time grading through Particle Swarm Optimization (PSO). Microgrids, being complex distributed energy systems, require robust protection schemes to ensure reliability and stability during various fault scenarios. The study proposes a relay coordination strategy based on PSO, optimizing the relay operating times to achieve effective fault discrimination and selective isolation.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

Through simulation studies and performance evaluations, the research analyzes the impact of the PSO-based relay time grading strategy on the digital protection of microgrids. The outcomes aim to demonstrate the effectiveness of the proposed approach in enhancing the coordination and responsiveness of protective relays, ultimately improving the reliability and resilience of microgrid systems.

Keywords: Microgrid, Digital Protection, Relay Time Grading, Particle Swarm Optimization, Protective Relays, Fault Discrimination, Selective Isolation, Reliability, Resilience, Simulation Studies.

196. Surveying Stock Market Portfolio Optimization TechniquesMrs.M.Gayathri, IT, Assistant Professor Vimalraj. R, IT, UG Student

Abstract:

This research conducts a comprehensive survey of stock market portfolio optimization techniques, exploring various methodologies and strategies employed for maximizing returns while managing risk. Portfolio optimization is a crucial aspect of investment management, and the study aims to provide an overview of the diverse approaches and models utilized in the financial industry.

The survey encompasses traditional mean-variance optimization, modern portfolio theory, and advanced techniques such as factor models, machine learning algorithms, and evolutionary algorithms. The research examines the strengths, limitations, and applications of each method, considering factors such as market conditions, investor preferences, and computational efficiency.

By synthesizing existing literature and analyzing case studies, this survey contributes to the understanding of the evolving landscape of portfolio optimization techniques, offering insights for investors, financial analysts, and researchers seeking to navigate the complexities of stock market investments.

Keywords: Portfolio Optimization, Stock Market, Investment Management, Mean-Variance Optimization, Modern Portfolio Theory, Factor Models, Machine Learning, Evolutionary Algorithms, Financial Analysis, Risk Management.

197. USB based High Speed Data Acquisition System Ms.B.Pushpalatha, IT, Assistant Professor Gayathri. B, IT, UG Student

Abstract:

This research focuses on the development of a USB-based high-speed data acquisition system,aiming to provide a versatile and efficient solution for collecting and processing data in real-time. The USB interface offers advantages in terms of portability, ease of use, and high data transfer rates, making it an ideal choice for applications requiring rapid and reliable data acquisition.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012
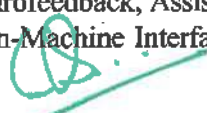
The study explores the design and implementation of the data acquisition system, encompassing aspects such as sensor integration, signal conditioning, and USB communication protocols. The research also evaluates the system's performance in terms of data accuracy, speed, and usability across various applications.

The outcomes of this research contribute to the advancement of high-speed data acquisition technologies, offering a practical and accessible solution for researchers, engineers, and professionals in fields such as scientific experimentation, industrial monitoring, and test and measurement applications.

Keywords: Data Acquisition System, USB Interface, High-Speed Data, Signal Conditioning, Real-Time Processing, Sensor Integration, Data Accuracy, Usability, Transfer Rates, Test and Measurement.

198. Brain Computer Interface: A Review

Mrs.K.Uthra Devi, IT, Assistant Professor Aishwarya. R, IT, UG StudentAbstract:

Abstract:

The study explores the design and implementation of the data acquisition system, encompassing aspects such as sensor integration, signal conditioning, and USB communication protocols. The research also evaluates the system's performance in terms of data accuracy, speed, and usability across various applications.

The outcomes of this research contribute to the advancement of high-speed data acquisition technologies, offering a practical and accessible solution for researchers, engineers, and professionals in fields such as scientific experimentation, industrial monitoring, and test and measurement applications.

Keywords: Data Acquisition System, USB Interface, High-Speed Data, Signal Conditioning, Real-Time Processing, Sensor Integration, Data Accuracy, Usability, Transfer Rates, Test and Measurement.

Keywords: Brain-Computer Interface, BCI, EEG, Signal Processing, Neurofeedback, Assistive Technology, Machine Learning, Invasive BCI, Non-Invasive BCI, Brain-Machine Interface.

PRINCIPAL
Indra Ganesan College of I
IG Valley, Madurai M.
Manikandam, Trichy-620 012

199.   Cogging Torque Minimization by Magnet Edge Inset Variation Technique in Radial FluxSurfaceMounted Permanent Magnet Brushless DC (PMBLDC) Motor

Mrs.B.Kanisha, IT, Assistant Professor Anbuselvi. R, IT, UG Student

Abstract:

This research addresses the cogging torque minimization in Radial Flux Surface Mounted Permanent Magnet Brushless DC (PMBLDC) motors using the Magnet Edge Inset Variation Technique. Cogging torque, an undesired pulsating torque in PMBLDC motors, can lead to performance degradation and operational inefficiencies. The study proposes a novel approach involving variations in magnet edge insets to mitigate cogging torque effects and enhance motor performance.

The research explores the impact of different magnet edge inset configurations on cogging torque reduction through simulations and experimental validation. The outcomes aim to demonstrate the effectiveness of the Magnet Edge Inset Variation Technique in achieving smoother motor operation and improved overall efficiency in Radial Flux PMBLDC motors.

Keywords: Cogging Torque, PMBLDC Motor, Magnet Edge Inset Variation, Radial Flux Motor, Motor Performance, Torque Minimization, Permanent Magnet Motors, Brushless DC Motors.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

200. **Analysis of Satisfaction Level of Employees in the Telecom Sector.**

Dr.Thiagarajan B, Head of Department, Department of Management Studies, Indra Ganesan College of
Engineering, Trichy.
Ms. Abinaya M, II Year-MBA, Indra Ganesan College of Engineering, Trichy.Ms. Akalya
M, IIYear-MBA, Indra Ganesan College of Engineering, Trichy.

Abstract

*The report shows a view of the tasks done during the period of Project in detail. The project aimsto analysis of
Employee Satisfaction in the Telecommunication Industry. This project helps us to learn about the importance of
job satisfaction which can be used in the future.*

Keywords

Telecommunication Industry, Employees Satisfactions Level, Human Resources Gained Knowledge,
Job Satisfaction.

Introduction

In simple terms, Job satisfaction refers to a person's feeling of satisfaction on the job, which acts as a motivation
to work. It is not the self-satisfaction, happiness or self contentment but the satisfaction on the job.

Job satisfaction survey can give the most valuable information the perceptions and causes.
For

satisfaction/dissatisfaction among the employees' attitude towards job satisfaction may be either positive or
negative. This positive feeling can be re-in forced and negative feelings can be rectified. This survey can be
treated as the most effective and efficient way, which makes the workers to express their inner and real feelings
undoubtedly.

Job satisfaction is one of the major interests to the field of organizational behaviour and practice of HRM. It
reflects employee's attitudes towards their job and commitment to an organization. Job satisfaction refers to one's
feelings or state of mind regarding the nature of their work. It describes how content an individual is with his or
her job.

Job satisfaction refers to a person's feeling of satisfaction on the job, which acts as a motivationto work. It is
not self-satisfaction, happiness or sell contentment but satisfaction on the job.

Job satisfaction is defined as the pleasurable emotional state resulting from the appraisal of one's job as
achieving or facilitating the achievement of one's job values. Job satisfaction is not the same as motivation It is
linked to productivity, motivation. absentees, waste accidents, mental health physical health and general life
satisfaction.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai
Manikandam, Trichy-

201. **A Study on Productivity and Efficiency Management in Agro Based Industry**

Ms.Minipriya N, Assistant Professor, Department Of Management Studies, Indra Ganesan College of Engineering, Trichy
Mr. Ajithkumar S, IYear-MBA, Indra Ganesan College of Engineering, Trichy.
Mr. Gopalakrishnan A, I Year-MBA, Indra Ganesan College of Engineering, Trichy.

ABSTRACT:
This article evaluated the agricultural performance of 31 states and union territories (UTs) in India from 2012 to 2017. The best agricultural productivity states and UTs in India wereobtained using Malmquist based DEA technique and the efficiency s core f or e ach y ear w as found using CCR model. The input parameter is taken as annual rainfall, total population, GDP, Workers, and net cultivated area, and the output parameter is taken as production of rice, wheat,coarse cereals, pulses, oil seeds, and sugarcane. The productivity of the states and UTs are compared, as well as the increase or decrease in productivity is calculated. Total productivity change was calculated using cumulative Malmquist index (CMI). As a result, Punjab, Rajasthan, Sikkim, and Uttar Pradesh are the most efficient states throughout the year, while Kerala and Goa are the least efficient. Maximum states and UTs advanced 61.25 % in 2015-16, whereas maximum states and UTs declined 62.52 % in 2012-13. The overall productivity change in Madhya Pradesh increases perfectly while Nagaland's is almost decreasing. Other factors that may have an influence on state and UTs agriculture productivity include capital investment and fertiliser use. Additional social and environmental performance criteria, such as contribution to local community development and harmful emission mea-surement, can be integrated as output criteria for sustainability performance analysis

Keywords: Data Envelopment Analysis, Malmquist Index, Cumulative Malmquist Index, Productivity Analysis, Agricultural Efficiency.

Introduction:
India is a growing agricultural country, with agriculture functioning as a fundamental basis for economic development, social improvement, and industrial structure adjustment and 60% of the Indian population is directly dependent on the agriculture sector and they contributed 20.19% of India's GDP in 2020-21.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-820 012

202.   A STUDY ON ANALYSIS OF WORKING CAPITAL MANAGEMENT IN BHEL, TRICHY

Ms.Nisha Martina L , Assistant Professor, Department Of Management Studies, Indra Ganesan College of Engineering, Trichy

Mr. Vignesh M, II Year-MBA, Indra Ganesan College of Engineering, Trichy.

Mr. Selvakumar K M, II Year-MBA, Indra Ganesan College of Engineering, Trichy.

ABSTRACT:

This study focused on the working capital management of the Bharat Heavy Electricals Limited (BHEL) company which is located in Trichy. The day to day expenses is most important aspects in any business, a company will maintain the fluctuation related to their sales because excess working capital causes no profit and the shortage of working capital cause rate of return on investment. The paper is used to determine how the working capital is maintain, to know how theworking capital is being financed and understanding how efficiently it managed, to identify five years of the debtor, creditor, inventory and working capital turnover ratio and finally make the recommendation and suggestion for the better working capital management in BHEL. These are the things are attached as below for improving the organization and moving without any distraction or deviation towards the goal.

Keywords—Awareness, Cash Management, Goodwill, Inventory Management, Profit, Working Capital Management.

INTRODUCTION

BHEL produce a transmission equipments and electric power generation. BHEL, a public-sector industry under in the country. The industry manufacturing power generating equipment under one roof. Existing technology should upgrade by this industry but now taking turnkey contract for export market. Performance of the power sector and the development of the Indian heavy electrical machinery linked together in India. To growth of the industry is depends upon the better power supply. If focus on the capacity expansion in the power sector is increase, then the heavy electrical machinery manufacturing industry also expanding. Working capital managementis the most important aspects of the financial statements. It means managing all the aspects of the working capital (i.e., current assets and current liabilities).

It is process of planning, directing and controlling the current assets of the industry and also it involves managing the relationship between the industries short term assets and short term liabilities. Working capital management helps to maintain the solvency of the business. Solvencyis an ability of a firm to meet its long term financial statements. Working capital makes a security environment, create a confidence and also the overall efficiency of the business. It can arrange the loans from bank and make others on easy and favorable terms.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

203.   A Study of Customer Buying Behaviour for FMCG between Rural and Urban Customers

Dr.Thiagarajan B, Head of Department, Department of Management Studies, Indra Ganesan College of Engineering, Trichy.
Ms. Vinothini S, II Year-MBA, Indra Ganesan College of Engineering, Trichy.Ms. Vasuki S,
IIYear-MBA, Indra Ganesan College of Engineering, Trichy.

Abstract:
Urbanisation, a high literacy rate, rising rural consumer income, and an increment in the awareness level of consumers change the consumer buying behaviour of Tiruvallur district. This district has a huge population. The contribution of people's buying is less in this district. This aspect induces the researcher to investigate the buying behaviour of consumers in the district. The aim of the study is to find out the factors influencing the rural consumer to shop for FMCG products in Tiruvallur. The factors are measured through quantitative research methods. The samples are FMCG consumers from Tiruvallur, Tirutani, and Ponneri. These samples are picked out through a convenience sampling method. The opinions of samples are assessed with the help of inferential statistics. All the variables (product, price, and psychological aspects) are associated with buying behaviour. Of the three attributes, prices are having the greatest effect onbuying behaviour. If prices change, consumption in the rural market may decrease.

Keywords: Rural consumer, behaviour, product, price and psychological attributes

INTRODUCTION

In India, most rural consumers are illiterate. This illiteracy makes consumers unable to identify the basic brand differences and read the text in the packages. Rural consumers are leading their lives in poverty. The poverty is due to the vagaries of the monsoon that preceded the purchasing power, which was unpredictable. For these consumers, manufacturers are selling the products at a low volume and making the products available at a reasonable cost. The main reason for doing such things is that the consumers are different (in terms of economic, psychological, and social aspects) from urban consumers. Rural consumers are price sensitive.

Though most rural consumers in India are illiterate, the average literacy rate of Tiruvallur districtis 88.67%. This education has upgraded the lifestyles of rural consumers, which in turn necessitates significant changes in the products they purchase. Urbanisation is also one of the reasons for having a better lifestyle in the rural areas. In addition, the empowerment of Tiruvallurdistrict is increasing due to a higher literacy rate, rising income, and awareness level, which change the consumption patterns of consumers

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

204.   A Study On Effectiveness Of Reward System On Employee Motivation In Bpo Sector

Ms.Minipriya N, Assistant Professor, Department Of Management Studies, Indra Ganesan College of Engineering, Trichy.
Ms. Yogeswari T, II Year-MBA, Indra Ganesan College of Engineering, Trichy. Ms.Vasuki S, II Year-MBA, Indra Ganesan College of Engineering, Trichy.

Abstract:

In the age of global competition, obtaining the right work force and retaining it turns into the most essential assignment of all organization. To get the most from those resources , employees should be motivated. Managers must think of new ways to hold an employee's attention and interest in BPO sector. The primary data is collected from 100 participants. The questionnaire survey method is used to collect the primary data. From the analysis, it is found that the majority of the respondents are satisfied with effectiveness of reward system on employee motivation. The reason on why the study is vital is it helps to understand why reward system is important within the organization so the organization can adopt better ways to encourage workers through a goodreward system to increase worker productivity.

Keywords: Reward system , Employee motivation, Attitude, Employee productivity.

INTRODUCTION

Reward system is a very important management tool which is used to motivate workers. In different words, reward system attract people to join the organization and also helps to reduce turnover intention of employees. It will encourage them to work, and motivate them to perform good. The factors that motivates and affect employee performance are rewards which can be monetary, job security, working conditions, employer-employee relationship, autonomy, relationship with colleagues, training and development opportunities, employee recognition and company's rules and policies for rewarding employees. Among all these factors, motivation that comes with rewards becomes important factor which increases the exceptional contribution by employees.

An organization should satisfy its obligations to stakeholders, its top management must build a bond between the organization and its employees that will fulfill the needs of both the parties. The organization expects employees to perform the duties which is assigned to them and at the standards set for them, and to follow the policies that have been established to govern the workplace.

PRINCIPAL
Indra Ganesan College of E
IG Valley, Madurai M
Manikandam, Trichy-620 v

205.   Importance of Recognition For Employees In Rewards System.

Ms.Thazhali B, Assistant Professor, Department Of Management Studies, Indra Ganesan Collegeof Engineering, Trichy.
Ms. Sujitha R, II Year-MBA, Indra Ganesan College of Engineering, Trichy.
Ms.Monisha A, II Year-MBA, Indra Ganesan College of Engineering, Trichy.

Abstract:

The general objective of the research was to study the impact of rewards and recognition on employee motivation. And the specific objectives were to identify the most effective means of rewards and recognition, to study the behavioral differences between appreciated and non- appreciated employees, to understand the extent to which motivation enhances employee's performance, to identify if the motivation has an effect on individual and organizational growth and to study if rewards and recognition results in emotional conflicts between employees. The descriptive research design was adopted for this study. Various employees from the companies were the respondents. It is evident from the study that a variety of factors influence employee motivation and satisfaction. It was also significant to discover that there is a direct and positive relationship between rewards and recognition and job satisfaction and motivation. Hence, if rewards and recognition offered to employees were to be altered, then there would be a corresponding change in work motivation and satisfaction. The direct translation of this could bethat the better the rewards and recognition, the higher the levels of motivation and satisfaction, and possibly, therefore, the greater the levels of performance and productivity. In the event of major inconsistencies, especially for emotional conflicts between performers and nonperformers, the organization should make an effort to re-assess and rectify this situation. In the event that theorganization does not re-assess this situation, it could have a resultant negative impact on job performance and productivity as well as on the retention of minorities. In accordance with Maslow's hierarchy of needs, the lower level needs such as salary and benefits must first be met before the higher level needs, which impacts motivation can be satisfied. The research study has shown that managers can employ different strategies to motivate employees, but that it is important that managers keep in mind that different strategies would have a different motivational impact on different people. To get optimum results from a motivational strategy, themanager has to realize and understand issues, which requires recognition of each individual's unique values, beliefs, and practices.

Keywords: Rewards, Recognition, Employee, motivation

INTRODUCTION
As manpower constitute the core of any business and ultimately employees are the main focus ofhuman resource management, with the constant changes occurring in the world today, especially with regards to technology and innovation, there is a need for companies to reassess the manner in which they communicate to their employees, which would increase their morale and will act as a driving force towards an integrated workforce. Thus, apart from financial compensations, there are other means to reward employees, some of which include the praise that employees are able to acquire from their managers, the opportunity to take on important projects or tasks, and

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

even leadership attention which helps them climb Maslow's pyramid of needs to attainmotivation for better performance.

206.   Study of HRIS implementation challenges and solution : An overview

Ms. Cynthia Sheeba Cathrin R, Assistant Professor, Department Of Management Studies, IndraGanesan College of Engineering, Trichy.
Ms. Nisha Martina L, Assistant Professor, Department Of Management Studies, Indra Ganesan College of Engineering, Trichy.

Abstract:

Human resource information system comprises of people, forms, procedures and date which is used to gather, store and distribute human resource information. There are bulk of studies in the area of Human resource information system. The Human Resource Information System, briefly known as HRIS is online means for the data entry, data tracking, and data information needs of the Human Resources, payroll, management, and accounting functions within a business. Basically, this system offers management of all employee information, reporting and analysis of employee information, company-related documents such as employee handbooks, emergency evacuation procedures, and safety guidelines. The prime intent of Human resource information system is to provide correct information to take good human resource decisions. This system is adopted to lessen manual work of human resource expertise and help to abandon paper work as all information is stored in database. It also enhances data integrity. With suitable HRIS, Human Resources managers facilitate employees to do their own benefits updates and address changes, thus release human resource staff for more strategic functions.

Keywords: Human Resource Information System, Organization, Implementation

INTRODUCTION

A HRIS, which is also known as a human resource information system or human resource management system (HRMS), is basically an intersection of human resources and information technology through HR software. This allows HR activities and processes to occur electronically. To put it another way, a HRIS may be viewed as a way, through software, for businesses big and small to take care of a number of activities, including those related to human resources, accounting, management, and payroll. A HRIS allows a company to plan its HR costs more effectively, as well as to manage them and control them without needing to allocate too many resources toward them.

In most situations, a HRIS will also lead to increases in efficiency when it comes to making decisions in HR. The decisions made should also increase in quality and as a result, the productivity of both employees and managers should increase and become more effective.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

207. **A Study on Online shopping habits of working Professionals**

Ms. Nisha Martina L, Assistant Professor, Department Of Management Studies, Indra Ganesan College of Engineering, Trichy.
Ms. Kanimozhi K, II Year-MBA, Indra Ganesan College of Engineering, Trichy.Ms. Parkavi A, II Year-MBA, Indra Ganesan College of Engineering, Trichy.

Abstract:

Online shopping is a form of electric commerce which allows customers to directly purchase the product or service from the seller over the internet using web browser. Growing number of customers shop in online to purchase product and services to gather information about the product to know the trends in the market and even for entertainment purpose. This helps in studying the purchase behaviour of the customers with different occupation background like student, professional workers, self- employees, salaried persons and their purchase desiccation based on their gender, age and other demographic factors. And the other factors which affect their purchase decision in online .The factors were analysed by collecting the source of data from the respondents and analysing by using different strategic tools. Where online shopping saves the time also which helps in comparing the price and features of the product .And the occupation and frequency of the purchasing the product from online has an significant connection and the growth of the online selling is growing and its shows the future of online selling and online purchasing decision of customers

Keywords: Online shopping, Purchase behaviour,Demographic factors, factor analyzing

INTRODUCTION
Online shooping is a form of electronic commerce whitch allows the customers to dirictly buythe product from the seller through internet using broweser or through an application .Throught online shopping customers can buy the product from different sellers and compare the price difference and the quality difference of the product .In this eara people use to buy products form online sites using different range of computer devices like detope computers, laptop, mobile phones ect
Customers can also purchase the physical product like paper, electonic items and even food in online and also digital products such as audio file of a song, software ect the e-tailer send the the file through internet to the customer

PRINCIPAL
Indra Ganesan College of (
IG Valley, Madurai
Manikandam, Trichy-

208.   A Study on Online shopping habits of working Professionals

Ms. Thazhali B, Assistant Professor, Department Of Management Studies, Indra Ganesan College of
Engineering, Trichy.
Mr. Kirubakaran M, Assistant Professor, Department Of Management Studies, Indra Ganesan College of
Engineering, Trichy.

Abstract:

*In current era, online advertising has grown rapidly and has come a long way today. Online advertisement uses
the internet facilities to deliver diverse promotional marketing ads to online consumers. It mainly includes email
advertising, search engine advertising, social media advertising, display advertising and mobile advertising.
This study seeks to explore the impact of online advertisements on online consumers buying behavior and
purchase decision making. The study is based on primary data collected from online consumers by sending an
online structured questionnaire on various online platforms. The data collected by 100 respondents were
systematically sorted, organized, analyzed and final figures were interpreted to draw conclusion. The study
reveals that there is significant impact of online advertising on online consumers. The online advertisement has
great impact on buying behavior and purchase decision making on online consumers. The present fast
progressing and technologically advancing era, is witnessing a revolutionary change in the trend of advertising.*

Keywords: Online Advertising, Types of online advertisements, online consumer.

INTRODUCTION

In present era of fast technological advancements, online advertising has grown rapidly in the last decade. The
rise of new media platforms and communication channels has tremendously changed the advertisement business
scenario throughout the world. Online advertisement is becoming one of the most preferred medium of
advertisement and having extreme potential for growth. Online advertising is latest and fastest growing means of
advertisement in currentmodern era .The growing dependency of people on internet as ultimate source of diverse
information and communication medium, has made online channels as leading advertisement platform. It
presents new and fast paced experience for online customers.

Online advertising refers to advertisements delivered over internet to online users via webpages, e-mails, ad-
supported software and internet-enabled cell phones. Online advertising mainly includes contextual ads on
search engine result pages, banner ads, rich Media Ads, social media advertising, online classified advertising,
mobile advertising, display advertising, web banner advertising and e-mail advertising.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

209.   A Study on Online shopping habits of working Professionals

Mr. Guna VS, Assistant Professor, Department Of Management Studies, Indra Ganesan Collegeof Engineering, Trichy.
Ms. Mariyammal K, II Year-MBA, Indra Ganesan College of Engineering, Trichy. Mr.
Priyadharshini M, IIYear-MBA, Indra Ganesan College of Engineering, Trichy.

Abstract:

Healthcare has become India's one of the largest sectors in the last decade. The Indian healthcare sector is growing at a sharp pace. The toothpaste market of India is about Rs. 750 Crore in the financial year 2020-21. Toothpaste is a regular purchasing item on the grocery shopping list. There are so many brands of toothpaste available in India. The research paper analyzes the buying behavior of toothpaste consumers in Navsari city. Primary data collection has been used in the study and the major finding of the study reveals that Colgate is one of the most trusted and popular brands in India.

Key Words: Toothpaste, Oral care, dental, brand name, quality, price.

INTRODUCTION

Toothpaste is one of the fastest-growing segments of FMCG in India. India is on the second rank in the world in population. The toothpaste market in India is very attractive due to its huge population in India. Toothpaste is a regular purchasing item on the grocery shopping list. There are so many brands of toothpaste available in India. Many multinational companies have targeted the Indian toothpaste market. Different companies have different marketing ideas and tactics. Companies focus on various aspects for manufacturing and selling toothpaste-like flavor, color, taste, dental care, protection, herbal elements, etc. People having different types of toothbrushing habits. The researcher has tried to collect the data from the people of Navsari District and analyze it by using various types of statistical and graphical tools.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

210.   Study of Executive perception on training & development system in an organization

Ms. Cynthia Sheeba Cathrin R, Assistant Professor, Department Of Management Studies, IndraGanesan College of Engineering, Trichy.
Ms. Revathi R, II Year-MBA, Indra Ganesan College of Engineering, Trichy. Mr.
Sandhiya R, IIYear-MBA, Indra Ganesan College of Engineering, Trichy.

Abstract:

Training in one way or the other, has been playing a very important role in man's Growth, development ever since Adam and Eve landed on this planet, In fact, what the Human beings today is, it has been only because of training in many patterns and indication, Changing their outline and the setups according to developing needs of a particular time and Period in the history of human advancement. This Realization has led to the development of theories, models and strategies of managerial and Organizations effectiveness in public sector electronic units. The present study aimed to explore Perceptions of executive towards Training and Development in Public banking sector (State bank of India and Punjab national bank). This study has finality in term of Training and development method, objectives and analysis which may finally give insight in developing some particular and realistic rules and forecasting to improve the managerial Effectiveness, organizations performance, managerial performance, and methods of training and development. The findings of study shows that the effect of training on Bank Employees in different banking skills, before and after training Was analyzed Out of various skill development programs it was observed that at State Bank Of India basic PC Based program was23% 23% where is at Punjab National Bank it was 29% interactive multimedia using pica- Based CD ROM style was appreciated by 25% at State Bank Of India web based training programs for Appreciated at State Bank Of India by 20% of people where Punjab National Bank it was only 11%. Training should receive the maximum Support from top management at the emotional level, in such a way that training system should be involved in solving organizational problems.

Key Words: Training,Development,Perception.

INTRODUCTION

Training and Development ensures improved learning and change in behavior if provided in structured format. Companies with pays high attention on Training of its Employee's indicates high market capitalization as their human resource are able to deliver effective results to the customers. This implies that Training results in effective performance of an individual. Training also enables an Employee to improve both its Technical as well as Managerial skills. Training Develops effective and productive work habits, provides appropriate skill set to perform modified jobs, avoids unnecessary absenteeism and chance of accidents; thus increasing employee's loyalty and confidence. It is a specialized function of the organizational development. Training is different form Education because it is particularly formal Education. Training is a process of learning a sequence of programmed behavior. It is an application of knowledge and gives people an awareness, rule and regulation about the particularly field, but the aims of Training are increasing knowledge and time to time changing attitudes and

211. A Study on The Various Employee Welfare Schemes at FMCG

Ms.Minipriya N, Assistant Professor, Department Of Management Studies, Indra Ganesan College of
Engineering, Trichy.
Ms. Yosiya sahayarani A, I Year-MBA, Indra Ganesan College of Engineering, Trichy. Ms.Shobana.A, I Year-
MBA, Indra Ganesan College of Engineering, Trichy.

ABSTRACT

*This article is aimed at examine the effectiveness of employee welfare measures in Hindustan Unilever Limited,
Dowlaiswaram. Employee welfare measure is a concept from human resources management. Organization
provides its workers with welfare services to sustain high levels of encouragement. The main purpose of the
study is to assess employee satisfaction with welfare facilities and to recommend such steps to improve welfare
measures in organizations. In the company's industrial output, the employee plays an important role. The
company should also work with the workers to improve productivity and gain higher profits. Employee benefits
represent the main income and protection vehicle. It also helps to assess the workers' relationships. The
organization's foundation is workers at Hindustan Unilever Limited, Dolaiswaram. The present study has
thrown major concentration in employee welfare and measures. An objective of the study includes the
relationship between the employees and the management is sound.*

The primary data collected through questionnaire and opinion survey method.

*Secondary data collected through books, company website, internet. All respondents are enjoying the benefits of
welfare measures and other facilities also that are provided by the Hindustan Unilever Limited.*

Key words: Welfare measures, incentives, human resource, management.

INTRODUCTION

 Human resource management is the organizational function that deals with issues related to people such as
compensation, hiring, performance management, organization development, safety, wellness, benefits, employee
motivation, communication, administration and training. Human resources are the most valuable and unique
assets of an organization. The successful management of an organization's human resources are an exciting
dynamic and challenging task especially at a time when the world has become a global village and economies are
in a state, management have been explained using contemporary examples form Indian companies.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Rc
Manikandam, Trichy-620 012

212.   Study of Executive perception on training & development system in an organization

Mr. Kirubakaran M, Assistant Professor, Department Of Management Studies, Indra Ganesan College of
Engineering, Trichy.
Ms. Rohini M, II Year-MBA, Indra Ganesan College of Engineering, Trichy. Mr.
Sivasankari P, IIYear-MBA, Indra Ganesan College of Engineering, Trichy.

Abstract:

*New generation employees are employees who value flexibility in their work. Therefore, work- life balance is
one of the factors that can affect the attitude of new employees in the company. Job satisfaction is an
employee's perspective on his work to see how far the company has met employee expectations. A work-life
balance makes employees feel job satisfaction because they can work well while in the office; therefore they do
not need to be burdened with problems outside of work. In addition, good quality of work-life balance will
increase employee retention so that the company can avoid problems related to employee retention. This
research aimed to explore the effect of work-life balance on job satisfaction and employee retention of the new
generation employees in the city. One of the managerial implications of the research results that can be
implemented is organization should provide a good work environment and facilities to increase the motivation
of the employees.*

KEYWORDS: Work life-balance, job satisfaction, employee retention.

INTRODUCTION

In the current era of globalisation, competition between companies is increasing along with the pace of global
economic growth. Companies demand that the human resources involved in it must be able to compete, survive
and win the competition (Ganapathi, 2016). To achieve the targets that have been given, in general, currently
many companies have been implemented work life balance. According to Frame and Hartog in Moedy (2013),
work-life balance (WLB) means that employees are free to use their working hours flexibly and balance their
work with other commitments. By implementing work-life balance programs in the company, employees will not
spend their time doing their works only. However, they can still have a life outside the works, forexample, their
families, and their social works, therefore it creates a balance that will make employees happier and more
satisfied to do their work life. Work-life balance is   typically defined as the amount of time you spend doing
your job versus the amount of time you spend with loved ones or pursuing personal interests and hobbies. When
work demands more of your time or attention, you will have less time to handle your other responsibilities or
passions.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Ro
Manikandam, Trichy-620 012

213. Study on Employee Motivation in an Organization

Ms. Cynthia Sheeba Cathrin R, Assistant Professor, Department Of Management Studies, IndraGanesan College of Engineering, Trichy.
Ms. Stella Mary F, II Year-MBA, Indra Ganesan College of Engineering, Trichy.Mr. Usha K,
IIYear-MBA, Indra Ganesan College of Engineering, Trichy.

Abstract:

The purpose of this study is to investigate the impact of motivating the front line employees of retail stores in Jordan on the organizational commitment. The study is aim to appraise the existing literatures and build up the conceptual framework as well as hypotheses. The research was conducted with a convenience sample. A total of 97 respondents from C-Town retail stores and Sameh Mall have participated in this research survey. Analysis of data and the discussion isincluded. Data collected were analyzed by the application of statistical tests i.e., Cronbach's alpha reliability, Pearson correlation and Simple Linear Regression using SPSS 20.0. Results showed that significant impact from employee motivation of front line employees on organizational commitment (affective, normative and continuance). Some important recommendations are also derived from the study.

KEYWORDS: Employee Motivation, Organizational Commitment, Affective Organizational Commitment, Continuance Organizational Commitment, Normative Organizational Commitment.

INTRODUCTION

An issue which usually generates a great deal of attention from most managers, administrators and those involved in Human Resources Management is the issue of how to successfully motivate employee. While it is true that aspects like staff recruitment, controlling, managing, leading, and many more are of great importance to the success of an organization, Employee Motivation is generally considered a core element in running a successful business. In the organizational setting the word "Motivation" is used to describe the drive that impels an individual to work. A truly motivated person is one who "wants" to work .Both employees and employers are interested in understanding motivation if employees know what strengthens and what weakens their motivation, they can often perform more effectively to find more satisfaction in their job. Employers want to know what motivates their employees so that they can get them to work harder.

PRINCIPAL
Indra Ganesan College of Engineering,
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

214. A Study On Employee Motivation W.R.F To Bsnl

Mr. Guna VS, Assistant Professor, Department Of Management Studies, Indra Ganesan Collegeof Engineering,
Trichy.
Mr. Arul Jothi V, II Year-MBA, Indra Ganesan College of Engineering, Trichy.Mr. Gokul R,
II Year-MBA, Indra Ganesan College of Engineering, Trichy.

Abstract:

Employee motivation at work place is an important area in human resource management that contributes to the performance of the employees. Many organizations are planning new strategies and ways in order to safeguard their employees. Better motivators at work place makes the employees feel satisfied and put more efforts to increase the productivity and profitability of the company. The study analyses the opinion of employees on motivational factorsat work place and basing on the response, the statistical tools like factor analysis and chi-square test are applied. The results of the study are very useful to every company which needs to manage its employees and make them satisfied at work place. The study helps in retaining the employees in the company for a long time.

KEYWORDS: Motivation; Performance; Productivity; Rewards; Workplace and Satisfaction.

INTRODUCTION

The only way to get people to work hard is to motivate them. Today, people must understand why they're working hard. Every individual in an organization is motivated by some different way. When talking in term of employee motivation, it can be simply defined as "a reflection of the level of energy, commitment, and creativity that a company's workers bring to their jobs." The job of a manager in the workplace is to get things done through employees. To do this the manager should be able to motivate employees. But that's easier said than done! Motivation practice and theory are difficult subjects, touching on several disciplines.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main
Manikandam, Trichy-620 0..

215.   A Study on Planning, Controlling and Budgeting at Small Scale Snack Industry

Dr. Soundar Rajan C, Associate Professor, Department Of Management Studies, Indra Ganesan College of Engineering, Trichy.
Ms. Geetha M, II Year-MBA, Indra Ganesan College of Engineering, Trichy.Mr. Nivetha
K, II Year-MBA, Indra Ganesan College of Engineering, Trichy.

Abstract:
The study examines the effects of the application of budget and budgetary control on theperformance of Small and Medium-Sized Enterprises (SMEs) in Ghana. The study adopted a quantitative descriptive research strategy to address the objectives. Primary data was collected from 200 SME managers/owners/senior staff using a structured questionnaire. The study adopted descriptive techniques for data analysis using techniques such as mean and standard deviation. The results of the study were presented in charts and tables. The response rate recorded was 96.5% and the reliability statistics recorded a Cronbach's Alpha Coefficient of 0.680 for budget Planning, 0.744 for budget coordination, and 0.755 for budgetary control indicating the internal consistency of the questionnaires. To answer the research hypothesis, the study found out that businesses with some level of budget planning, budget coordination and budgetary control application in their operations get to experience some level of growth in their performance. Hence, concluding that there is a strong (R-value= 66.30%) relationship between SME performance and budget planning, budget coordination, and budgetary control with 42.7% of the total variation in the performance of SME's being explained by the predictor variables. Further, the study concluded that budget planning, budget coordination, and budgetary control have a statistically significant positive effect on the performance of SME businesses

KEYWORDS: budget planning, budget coordination, budget control, performance

216.   A study on need of Financial advisor for Mutual Fund Investor

Mr. Guna VS, Assistant Professor, Department Of Management Studies, Indra Ganesan Collegeof Engineering, Trichy.
Dr. Soundar Rajan C, Associate Professor, Department Of Management Studies, Indra Ganesan College of Engineering, Trichy.

Abstract:
It is very difficult to understand the behavior of the investor for Mutual Fund companies in India. To remain competitive in the market it is necessary to understand and to influence the behaviorof the investor. Behavior of the investor is influenced by many factors like return, safety,liquidity, convenience etc. Investor selects the funds based on their information available to themand the future growth prospects. Investment in Mutual Fund products is not yet so familiar in Indian financial markets. So to make them aware about Mutual Fund investment and to make them motivatedfinancial advisor plays an important role. They understand the financial need of the investor and suggest them the product which better fits to their need. The present study focuses on understanding impact of various factors on choice of different fund categories in Mutual Fund. The study will also analyze the role of financial advisor in influencing the behavior of the investor. From previous studies researcher has identified certain factors and constructed a questionnaire to analyze it. The data was collected from the respondents in Agra region and analyzed using Correlation Analysis, Analysis of Variance etc. The study will be helpful in identifying different factors and to understand the role of financial advisor in influencing the behavior of the individual investor. Study shows that Mutual Fund companies should provide constant training to their financial advisor and should launch various investor education programs.

KEYWORDS: Choice of Fund,Financial Advisor,Financial Literacy.Investor Behavior,MutualFund.

217.   Analysis of Employee Training Needs in Banking Sector

Dr.Thiagarajan B, Head of Department, Department of Management Studies, Indra Ganesan College of Engineering, Trichy.
Mr. Vignesh M, II Year-MBA, Indra Ganesan College of Engineering, Trichy. Mr. Dineshkumar G, IIYear-MBA, Indra Ganesan College of Engineering, Trichy.

ABSTRACT

Increasing competence and effectiveness of manpower through training and development has become very important for present business scenario to make sure success in banking sector. Training and development of HRM in industries have been considered as a vital instrument for the expansion of enviable motive and perception for both the manager and employees. Training serves as a significant way for the progress efficient work practices and techniques of employment and thus develops career performance, diminish waste and catastrophes, organize persons for customized occupations avoid avoidable turnover, improvement of product andservice quality.

This research project is undertaken to identify the effectiveness of Training Need Analysis adopted in Indian banks. Before training design challenges are concerned, a cautious need analysis is needed to expand organized information of where and when training is required, what need to be trained, who will be trained and most significantly how will the training be carried out. Unless this need assessments have been sufficiently performed it might be difficult torationally validate offering training.

Identifying training need and measure the effect of the training solutions are changing transforming with the modern technologies, globalization and strategies; therefore, it is very significant to continuously share and update ourselves with the latest methods adopted in identifying training need and in measuring their returns in banking sector.

The findings revealed that the reasons for the declining performance of bankers are directly related with the lack of positive attitude about the jobs in the banking sector, lack of motivation and dissatisfaction involved with these. T&D will cause higher satisfaction level in employees and they will accomplish their duties with a lot of accountability with best performance. Results also showed that only a few needs assessment techniques, such as, management audit, interview customers and employees, written tests, assessment centre, survey, and individual development plans are used by the banks to assess the training needs in India.

Key Words: Training, Training Need Analysis, Banking sector, employees

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

218. **A Study on Futures and Options Market in India**

Dr.Soundar Rajan C Associate Professor, Department Of Management Studies, Indra Ganesan College of Engineering, Trichy.
Mr.Kirubakaran M,Assistant Professor, Department Of Management Studies, Indra Ganesan College of Engineering, Trichy.

Abstract

Derivatives are risk management instruments, which derive their value from an underlying asset. The underlying asset can be index, share, bonds, currency, and interest etc. Banks, securities firms, companies and investors to hedge risks to gain access to cheaper money and to makeprofit by using derivatives. Derivatives are likely to grow even at a faster rate in future.Financial derivatives enable parties to trade specific financial risks (such as interest rate risk, currency, equity and commodity price risk, and credit risk, etc.) to other entities who are more willing, or better suited, to take or manage these risks— typically, but not always, without trading in a primary asset or commodity. The risk embodied in a derivatives contract can be traded either by trading the contract itself, such as with options, or by creating a new contract which embodies risk characteristics that match, in a countervailing manner, those of the existing contract owned. This paper aims to know the various contracts, instruments in derivativesmarket for investment to the investors.

Keywords: Derivative, Futures, Options, Bermudan.

Introduction

The emergence of the market for derivatives products, most notably forwards, futures andoptions, can be traced back to the willingness of risk-averse economic agents to guard themselves against uncertainties arising out of fluctuations in asset prices. By their very nature, the financial markets are marked by a very high degree of volatility. Through the use ofderivative products, it is possible to partially or fully transfer price risks by locking-in asset prices. As instruments of risk management, these generally do not influence the fluctuations in the underlying asset prices. However, by locking-in asset prices, derivative product minimizes the impact of fluctuations in asset prices on the profitability and cash flow situation of risk averseinvestors.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

219.   A Study on Gold as Investable Commodity

Dr.Soundar Rajan C Associate Professor, Department Of Management Studies, Indra Ganesan College of Engineering, Trichy.
Mr. Ajeesh M, II Year-MBA, Indra Ganesan College of Engineering, Trichy.
Mr. Alex Pandian T, II Year-MBA, Indra Ganesan College of Engineering, Trichy.

Abstract

Commodity markets are markets where raw or primary products are exchanged. These raw commodities are traded on regulated commodities exchanges, in which they are bought and sold in standardized contracts. The commodities market consists of the trading of forward contractsor future contracts. Forward contracts are contractual agreements to buy/sell any commoditybet there in two entities while futures contracts are market agreements to buy/sell very specific commodities bet there in two entities over a recognized commodities exchange. It is a physical virtual market place for buying and selling of raw or primary products. For investors' purposes there are currently about 50 major commodity markets worldwide that facilitate investment trade in nearly 100 primary commodities. Commodities are split into two types: hard and soft commodities. Hard commodities are typically natural resistless that must be mined or extracted (gold, rubber, oil, etc.), whereas soft commodities are agricultural products or livestock (corn, wheat, coffee, sugar, soybeans, pork, etc.)

Keywords: Commodity Market

Introduction

Commodity markets are markets where raw or primary products are exchanged. These raw commodities are traded on regulated commodities exchanges, in which they are bought and sold in standardized contracts. Commodity market is an important constituent of the financial marketsof any country. It is the market where a wide range of products, viz., precious metals, base metals, crude oil, energy and soft commodities like palm oil, coffee etc. are traded. Commoditiescan be divided in to three types: Base metal: Gold, Silver. Energy: WTI Crude oil, Brent Crude oil, Furnace oil. ⊐ Agricultural commodity: kappa's, menthol, soy oil, ǀ maser, castor seed, chilli, china, guar gum, guar seed, guar, jeer, juice raw, maize, pepper, RM seed, Sugar, Soya been, Tar, Ural, Turmeric, Wheat.

Need for the Study

Commodity market is a market where raw or primary products are exchanged. Commodity market is of two types i.e., Hard (Non-Agricultural) and Soft (Agricultural) commodities. Here hard commodities are typically Nonagricultural or natural resources (Gold, Silver, Copper, and Natural Gas) and Soft Commodities are the agricultural commodities (Coffee, Corn, Wheat, Sugar.

220. **A Study on Impact of Corruption on FDI Inflows in India**

Mr.Kirubakaran M,Assistant Professor, Department Of Management Studies, Indra Ganesan College of Engineering, Trichy.
Ms.Renuka M ,I Year-MBA, Indra Ganesan College of Engineering, Trichy.
Ms.Pushpanjali B,IYear-MBA, Indra Ganesan College of Engineering, Trichy.

Abstract

The aim of this paper is to investigate the impact of corruption on the inflow of foreign direct investment (FDI). The data, taken from official sources, Transparency International and the Heritage Foundation, have been treated in a special program "Deductor Studio Academic" by the method of Machine Learning (cluster analysis using Kohonen Self-Organizing Maps). There was composed a Kohonen map, in which the countries were divided into 4 clusters: countries with low levels of corruption and high level of FDI inflow, countries with low level of corruption and FDI above average, countries with average level of corruption and the average level of FDI,and countries with high level of corruption and low level of FDI. The research has shown that corruption influences the investment attractiveness of the host country. This means that in countries where the level of corruption is low and economic environment is attractive, the level of foreign direct investment is high, and in those countries where the level of corruption is high and and economic attractiveness is low -- the level of investment is low. However, the study identified countries which have high level of corruption and high FDI inflow - China, India, Brazil and Russia (BRIC countries). These countries are the exception from the rule due to the wide domestic market, cheap labour, the wealth of natural resources - all these factors increase the investment attractiveness of these countries. It was found that corruption in BRIC countries has similarity being a controlled and predictable phenomenon. This allows calculating the cost of corruption for accounting it in business projects.

Keywords: Foreign direct investment, corruption, Corruption Perception Index, Machine Learning, Kohonen Self Organizing Maps, cluster analysis, attractive economic environment, BRIC.

Introduction

The modern world economy is characterized by the movement between countries of production factors such as capital, labour, scientific and technical achievements. Companies that wish to successfully do business in a particular market abroad increasingly begin to focus not only on theexport of manufactured goods, but also on the organization of its own production in a foreign country or purchasing the shares of local companies - this is a foreign direct investment (FDI). Regardless the level of economic development, each country is seeking to attract foreign capitals to obtain a positive effect for the economy. The reasons for the export and import of foreign direct investment are very diverse, but the most important ones are the desire to place the capital in the country and industry, where it will bring the maximum profit with minimal level of taxation.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

221.   Title : A study on training and development of executive in the Ayurvedic Pharmaceuticals.

Ms. Thazhali B, Assistant Professor, Department Of Management Studies, Indra Ganesan College of Engineering, Trichy.
Ms. Neelambari L, I Year-MBA, Indra Ganesan College of Engineering, Trichy. Ms. Juliana
Mary S, I Year-MBA, Indra Ganesan College of Engineering, Trichy.

Abstract

Training is a latent tool that can be used to bridge the gap between one's potential andperformance. Training has gained importance in the last few decades due to ISO observation and the fear of companies caused by the entry of multinationals. The Himalaya Drug Company isa leading pharmaceutical company. Pharmaceuticals, personal care goods, healthcare products, and animal health products are all sold by Himalaya. This project deals with the study of training and development of executives aim to find out the efficiency of employees before and after the training program. The training is identified through performance appraisal data. The data was collected through a questionnaire. The simple percentage approach, as well as other tools, were employed to conduct the analysis. single proportion test and correlation. The suggestions were, that training should be conducted once a year and there should be a proper training calendar, which has to be followed by the executives.

Keywords: Manufacturing, Marketing, Finance, HR & Administration

Introduction

Training And development. programs are aimed to assist new employees. ineffectively adjusting.to the job. They also include corporations' and other organizations' formal continuing efforts to promote employee performance and self-fulfillment through a range of approaches and initiatives.

Training. and development. have arisen. as formal corporate roles, vital components of corporate strategy, and acknowledged. As professions with separate. Theories. and approaches, as corporations increasingly recognize the basic relevance of employee growth. and development, as well as the requirement. of a highly competent workforce, to increase success and efficiency. of their organizations.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main R
Manikandam, Trichy-620 012

222.   Employee attrition and retention strategies in BPO industry

Mr.Kirubakaran M,Assistant Professor, Department Of Management Studies, Indra Ganesan College of
Engineering, Trichy.

Ms.Minipriya N, Assistant Professor, Department Of Management Studies, Indra Ganesan College of
Engineering, Trichy.

Abstract
*Changes in business conditions, demographics and globalization have created new opportunities for the HR
function. These changes have raised the need to understand and manage the dynamics of talent, from sourcing
to resource management to recognition systems. To prosper in this new environment, HR professionals need to
take a more strategic perspective on their services and capabilities. Simply being effective in dealing with
administrative issues is no longer the yardstick by which the value of the HR function will be evaluated. Rather,
value will lie in using a fact-based, analytic approach to solve problem of retention of employees of BPO inIndia.
This is responsibility of management to provide a longer, more futuristic viewpointregarding how the business
needs to adjust to environmental changes. Employee retentionmatters, as, organizational issues such as training
time and investment, costly candidate search etc., are involved. Hence, failing to retain a key employee is a
costly proposition for any organization. Various estimates suggest that losing a middle manager in most
organizations, translates to a loss of up to five times his salary. This might be worse for BPO companies where
fresh talent is intensively trained and inducted and then further groomed to the successive stages. The HR
strategy should evolve from a transactional support role to partnering in the organizations business strategy. HR
must take steps to be aware of employee problems and try tosolve them, creatively for BPOs in India.*

Keywords: BPO: Business Process Outsourcing, HR: Human Resource, Employee Retention

PRINCIPAL
Indra Ganesan College of Engineer...
IG Valley, Madurai Main Roa...
Manikandam, Trichy-620 012

223.   Study of Future Trends in Recruitment- India and Overseas

Ms.Nisha Martina L, Assistant Professor, Department Of Management Studies, Indra GanesanCollege of Engineering, Trichy
Ms.Cynthia Sheeba Cathrin R, Assistant Professor, Department Of Management Studies, Indra Ganesan College of Engineering, Trichy.

ABSTRACT:
In today's competitive business environment, personnel in the organisationsare a source of competitive advantage. It is very crucial for businesses to hire the right people, for the right job, at the right time with the right knowledge and skills. The recruitment and selection process has become one of the key processes determining the success of an organisation. This paper examines the emerging trends concerning recruitment and selection. Keywords: Recruitment, Selection, Emerging trends.

Keywords: BPO: Business Process Outsourcing, HR: Human Resource, Employee Retention

224. Evaluation of machining behaviour of Al MMC

[1]Mr. Ramesh Babu R, [2]Mr. Faizal, [3]Mr. Mohammed Isaq,
[1]Assistant professor, [2,3] II year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering.

Abstract:

Aluminum Metal Matrix Composites (Al MMC) have gained substantial attention due to their exceptional mechanical properties. However, their complex microstructure poses challenges in machining operations. This study investigates the machining behavior of Al MMC, focusing on understanding the effects of reinforcement particles on the machinability and exploring suitable machining parameters for optimal performance. The research employs a systematic approach, including experimental investigations and analysis of machining forces, surface roughness, tool wear, and chip morphology. Various machining techniques such as turning, milling, and drilling are evaluated to comprehend the diverse responses of Al MMC to different cutting conditions. Results reveal that the presence of reinforcement particles significantly influences the machinability of Al MMC, affecting tool wear rates and surface integrity. Furthermore, the study identifies specific cutting parameters, tool geometries, and machining strategies that enhance the efficiency and quality of machining processes for Al MMC. Insights from this research contribute to a deeper understanding of the machining behavior of Al MMC, providing valuable guidance for industries seeking to optimize manufacturing processes involving these advanced materials.

Keywords: Aluminum Metal Matrix Composites, Machining Behavior, Reinforcement Particles, Tool Wear, Surface Integrity, Machining Parameters

225. Optimization of drilling parameters of SS304 by Taguchi method

[1]Mr. Ramesh Babu R, [2]Mr. Naveen Raj, [3]Mr. S. Revanth,
[1]Assistant professor, [2,3] II year Students, Department of Mechanical Engineering, Indra Ganesan College of Engineering.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main R...
Manikandam, Trichy-820 014

efficiency. The optimized parameters identified through the Taguchi method showcase a substantial improvement in drilling performance, achieving enhanced productivity and minimizing tool wear in the machining of SS304. This research contributes valuable insights into the effective optimization of drilling parameters for SS304, providing a systematic methodology that can be applied in industrial settings to improve drilling operations on similar materials.

Keywords: Drilling Parameters, SS304, Taguchi Method, Optimization, Tool Wear, Machining Efficiency

226. Experimental investigation of mechanical properties of bagasse fiber with bagasse powders composite material

[1]Mr. Ramesh Babu R, [2]Mr. Mohammed Burose, [3]Mr. M. Aravinth,
[1]Assistant professor, [2,3] II year Students, Department of Mechanical Engineering, Indra Ganesan College of Engineering.

Abstract:

Bagasse, a byproduct of sugarcane processing, has gained attention as a potential reinforcing agent in composite materials due to its abundance and eco-friendly nature. This study presents an experimental investigation aimed at characterizing the mechanical properties of composite materials composed of bagasse fiber and bagasse powder. The research involves the fabrication of composite specimens using varying compositions of bagasse fiber and bagasse powder. The specimens are subjected to comprehensive mechanical testing, including tensile, flexural, and impact tests, to evaluate their strength, stiffness, toughness, and other relevant mechanical properties. The effects of different ratios of bagasse fiber to bagasse powder on the mechanical behavior of the composite material are systematically analyzed. Scanning electron microscopy (SEM) is utilized to examine the microstructure and interface bonding between the components of the composite. The results reveal insights into the mechanical performance of the bagasse fiber and bagasse powder composite material. The study identifies optimal compositions that exhibit superior mechanical properties, highlighting the potential of these composites for structural applications in various industries. This research contributes to a deeper understanding of the mechanical behavior of composite materials derived from bagasse components, offering valuable information for the development of sustainable and cost-effective materials with favorable mechanical characteristics.

Keywords: Bagasse Fiber, Bagasse Powder, Composite Material, Mechanical Properties, Tensile Testing, Flexural Testing, Impact Testing, Microstructure Analysis

227. Fabrication and study of mechanical properties of bamboo fibre reinforced bio composites.

[1]Mr. Ramesh Babu R, [2]Mr. I.S. Joyal, [3]Mr. R. Parthiban,
[1]Assistant professor, [2,3] II year Students, Department of Mechanical Engineering, Indra Ganesan College of Engineering.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

Abstract:

Bamboo fibers, recognized for their renewable and eco-friendly nature, have emerged as promising reinforcements in biocomposite materials. This study focuses on the fabrication and comprehensive investigation of the mechanical properties of bamboo fiber-reinforced biocomposites.

The research involves the fabrication of biocomposite specimens by incorporating bamboo fibers into a biodegradable matrix material. Various fabrication techniques and fiber orientations are explored to understand their influence on the mechanical performance of the resulting composites.

A series of mechanical tests, including tensile, flexural, and impact tests, are conducted to evaluate the strength, stiffness, toughness, and other key mechanical properties of the biocomposite materials. Additionally, scanning electron microscopy (SEM) is employed to analyze the interfacial bonding and microstructure of the composites.

The experimental results elucidate the effects of bamboo fiber content, orientation, and processing techniques on the mechanical behavior of the biocomposite materials. Optimal combinations that exhibit enhanced mechanical properties are identified, showcasing the potential of bamboo fiber-reinforced biocomposites for structural applications.

This research contributes valuable insights into the fabrication methodologies and mechanical characteristics of bamboo fiber-reinforced biocomposites, offering a sustainable and eco-friendly alternative for various industries seeking durable and environmentally conscious materials.

Keywords: Bamboo Fiber, Biocomposites, Mechanical Properties, Tensile Testing, Flexural Testing, Impact Testing, Microstructure Analysis, Renewable Materials, Sustainable Composites

228. Simulation and optimization of laser cutting machine and its parameters.

[1]Mr. Ramesh Babu R, [2]Mr. M Ramachindran, [3]Mr. A Ramakkannan,
[1]Assistant professor, [2,3] II year Students, Department of Mechanical Engineering,
Indra Ganesan College of Engineering.

Abstract:

Laser cutting has evolved as a versatile and efficient manufacturing process, but its performance greatly depends on the selection and optimization of cutting parameters. This study focuses on the simulation and optimization of laser cutting machine parameters to enhance efficiency and precision in the cutting process. Utilizing advanced simulation software, a comprehensive model of the laser cutting process is developed, considering various parameters such as laser power, cutting speed, focal length, assist gas pressure, and nozzle diameter. The simulation model is validated through experimental data to ensure its accuracy in representing real-world cutting

PRINCIPAL
Indra Ganesan College of Engine...
IG Valley, Madurai Main Re.
Manikandam, Trichy-620 ...

scenarios. A systematic optimization methodology, possibly employing techniques like Response Surface Methodology (RSM) or Taguchi method, is applied to determine the optimal combination of cutting parameters. The objective is to maximize cutting speed while ensuring minimal heat-affected zone, kerf width, and material distortion. The study investigates the effects of individual parameters and their interactions on the quality and efficiency of laser cutting. Insights from the simulation and optimization process provide guidelines for selecting the most favorable parameter settings to achieve precise and efficient laser cutting operations. The findings from this research contribute to advancing the understanding of laser cutting machine parameters' influence on cutting quality and productivity. This knowledge aids in optimizing laser cutting processes for various materials and thicknesses, offering improved efficiency and cost-effectiveness in manufacturing applications.

Keywords: Laser Cutting, Simulation, Optimization, Cutting Parameters, Laser Power, Cutting Speed, Focal Length, Assist Gas Pressure, Material Processing.

229. Optimization of drilling parameters of ss304 by taguchi method

[1]Dr. BHARATHI RAJA S, [2]Mr. R Saravanan, [3]Mr. C Prasanth,
[1]Professor, [2,3] II year Students, Department of Mechanical Engineering, IndraGanesan College of Engineering.

Abstract:

Drilling of stainless steel SS304 demands precision and efficiency due to its high work hardening and low thermal conductivity properties. This research focuses on optimizingdrilling parameters for SS304 using the Taguchi method to enhance machining effectiveness and minimize tool wear. An experimental setup based on the Taguchi orthogonal array design is employed to conduct drilling trials with varied combinations of cutting speed, feed rate, and drill diameter. The aim is to analyze the individual and combined effects of these parameters on crucial drilling outcomes, including tool wear, hole quality, and machining time. Through statistical analysis such as Analysis of Variance (ANOVA) and the Taguchi signal-to-noise ratio, optimal drilling parameter settings are determined. The study emphasizes identifying the most influential parameters and their optimal levels that lead to improved drilling performance on SS304. The results elucidate the significant impact of drilling parameters on tool wear, surface finish, and drilling efficiency. The optimized parameter settings identified through the Taguchi method showcase substantial enhancements in drilling performance, providing a more efficient and economical approach to machining SS304. This study's findings offer valuable insights into optimizing drilling parameters for SS304, aiding in the development of guidelines for industrial applications to enhance productivity and reduce machining costs in drilling operations on stainless steel materials.

Keywords: Drilling Parameters, SS304, Taguchi Method, Optimization, Tool Wear,Machining Efficiency

230. Experimental Investigation On Machining Behaviour Of Garnet AbrassiveWater Jet Machining In AA6083, Zro2 And Graphite

[1]Dr. BHARATHI RAJA S, [2]Mr. R Chelladurai, [3]Mr. R Gunaseelan,
[1]Professor, [2,3] II year Students, Department of Mechanical Engineering, Indra Ganesan College of Engineering.

Abstract:

Abrasive water jet machining (AWJM) utilizing garnet abrasives has gained prominence for its versatility in machining various materials. This study focuses on the experimental investigation of the machining behavior of AA6083 aluminum alloy, ZrO2 (Zirconia), and graphite using garnet abrasive water jet machining. The research involves systematic experimentation involving varying process parameters such as abrasive flowrate, standoff distance, and traverse speed. The aim is to comprehensively analyze the effects of these parameters on material removal rate, surface quality, and other relevant machining characteristics for each material. The study evaluates the specific responses of AA6083, ZrO2, and graphite to garnet abrasive water jet machining, considering their varying properties and structures. Detailed examinations include surface roughness measurements, material microstructure analysis, and edge quality assessments post- machining. Results from the experimentation reveal the influence of process parameters on machining characteristics for each material. The study identifies optimal parameter combinations that maximize material removal rates while maintaining acceptable surface quality and dimensional accuracy for AA6083, ZrO2, and graphite. Insights gained from this research contribute valuable knowledge for optimizing garnet abrasive water jet machining processes on these materials, facilitating advancements in manufacturing technology and providing guidelines for industrial applications requiringprecise and efficient machining of diverse materials.

Keywords: Abrasive Water Jet Machining, Garnet Abrasive, Machining Behavior, AA6083 Aluminum Alloy, Zirconia (ZrO2), Graphite, Material Removal Rate, Surface Quality, Process Parameters

231. De-hydration of agro products using tunnel type solar dryer for fruits andvegetables

[1]Dr. BHARATHI RAJA S, [2]Mr. M Karthik, [3]Mr. D Muthurasu,
[1]Professor, [2,3] II year Students, Department of Mechanical Engineering, IndraGanesan College of Engineering.

Abstract:

The dehydration of fruits and vegetables is a critical process in preserving their quality and extending shelf life. This study focuses on the utilization of a tunnel-type solar dryer for the dehydration of various agro products, specifically targeting fruits and vegetables. The research involves the design, construction, and testing of a tunnel-type solar dryer optimized for efficient dehydration. The system harnesses solar energy to create an environment conducive to gentle and uniform drying, thereby preserving the nutritional content and sensory attributes of the produce. Experiments are conducted using different types of fruits and vegetables, assessing the dryer's performance in terms of dehydration rate, moisture removal, and preservation of color, flavor, and

PRINCIPAL
Indra Ganesan College of E-
IG Valley, Madurai Ma.
Manikandam, Trichy-820 014

nutrient content. Parameters such as air temperature, humidity, and airflow within the dryer are monitored to understand their influence on the drying process. The results demonstrate the effectiveness of the tunnel-type solar dryer in dehydrating various agro products. The dryer shows promising performance in achieving substantial moisture removal while maintaining the quality attributes of the fruits and vegetables. This research contributes valuable insights into the practical application of solar drying technology for agro product dehydration. The utilization of a tunnel-type solar dryer showcases its potential as an eco-friendly and cost-effective method for preserving fruits and vegetables, especially in regions with abundant solar resources.

Keywords: Dehydration, Agro Products, Solar Dryer, Fruits, Vegetables, Preservation, Solar Energy, Drying Rate, Nutritional Content, Shelf Life

232. Influence of high velocity oxy fuel spray parameters on mechanical properties of Cr3 / nicr coating

[1]Dr. BHARATHI RAJA S, [2]Mr. N Pradeep, [3]Mr. P Sabarinathan,
[1]Professor, [2,3] II year Students, Department of Mechanical

In

Abstract:

High-velocity oxy fuel (HVOF) spraying is a prominent technique for depositing coatingsdue to its ability to create dense, high-quality coatings with enhanced mechanical properties. This study investigates the influence of HVOF spray parameters on the mechanical properties of Cr3/NiCr coatings. Experimental trials are conducted using varying HVOF spray parameters, including powder feed rate, oxygen-to-fuel ratio, and spray distance, to deposit Cr3/NiCr coatings onto a substrate material. The mechanical properties of the coatings, such as hardness, adhesion strength, wear resistance, and corrosion behavior, are systematically evaluated. Characterization techniques including microhardness testing, adhesion tests, wear testing, and corrosion resistance assessments are employed to analyze the impact of spray parameters on the mechanical performance of the coatings. Additionally, microstructural analysis using scanning electron microscopy (SEM) and X-ray diffraction (XRD) is conducted to understand the coating microstructure and phase composition. Results reveal the significant effects of HVOF spray parameters on the mechanical properties of Cr3/NiCr coatings. Optimal parameter combinations are identified, showcasing improved mechanical characteristics such as enhanced hardness, superior adhesion, increased wear resistance, and improved corrosion protection. This study contributes valuable insights into the correlation between HVOF spray parameters and the resulting mechanical properties of Cr3/NiCr coatings. The findings offer guidance for optimizing HVOF spraying processes to achieve coatings with superior mechanical performance, facilitating their application in various industrial sectors requiring durable and high- performance surface coatings.

Keywords: High-Velocity Oxy Fuel (HVOF) Spray, Cr3/NiCr Coating, Mechanical Properties, Powder Feed Rate, Oxygen-to-Fuel Ratio, Spray Distance, Hardness, Adhesion, Wear Resistance, Corrosion Behavior, Microstructure Analysis

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620

233. Investigation Of Mechanical Properties Of Glass Fiber Reinforcement EpoxyComposite.

[1]Dr. BHARATHI RAJA S, [2]Mr. R Shyam Sundar, [3]Mr. R Karthick,
[1]Professor, [2,3] II year Students, Department of Mechanical Engineering, Indra Ganesan College of Engineering.

Abstract:

Glass fiber-reinforced epoxy composites are widely recognized for their exceptional mechanical properties and versatility in various engineering applications. This study aims to comprehensively investigate the mechanical properties of glass fiber-reinforced epoxy composites through experimental analysis. The research involves the fabrication of composite specimens by incorporating varying weight fractions of glass fibers into anepoxy resin matrix. A series of mechanical tests, including tensile, flexural, and impact tests, are conducted to evaluate the composite's strength, stiffness, toughness, and otherkey mechanical properties. The influence of different fiber orientations and volume fractions on the mechanical behavior of the composite material is systematically examined. Additionally, scanning electron microscopy (SEM) is utilized to analyze the interfacial bonding between the fibers and the matrix, providing insights into the composite's microstructure. The experimental results elucidate the effects of glass fiber content, orientation, and distribution on the mechanical performance of the epoxy composite. Optimal combinations of fiber content and orientation that exhibit superior mechanical properties are identified, highlighting the potential of these composites for structural applications. This study contributes significant insights into the mechanical properties of glass fiber-reinforced epoxy composites, offering valuable information for material design and engineering applications. The findings provide a basis foroptimizing composite formulations to achieve desired mechanical characteristics tailored for specific industrial requirements.

Keywords: Glass Fiber, Epoxy Composite, Mechanical Properties, Tensile Testing, Flexural Testing, Impact Testing, Fiber Orientation, Interfacial Bonding, Microstructure Analysis, Composite Material

234. Optimization Of Cnc Turning Parameters Of Alsi Cp Metal Matrix CompositeBy Grey Relational Analysis

[1]Mr. SAMUEL M, [2]Mr. S Syed Kaja, [3]Mr. M Valarmathi,
[1]Associate Professor, [2,3] II year Students, Department of Mechanical Engineering, Indra Ganesan College of Engineering.

Abstract:

AlSi CP Metal Matrix Composites (MMC) exhibit promising mechanical properties, making them suitable for various industrial applications. This research focuses on optimizing CNC turning parameters for AlSi CP MMC using grey relational analysis to enhance machining efficiency and surface quality.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main
Manikandam, Trichy-6

235.   Borewell Rescue System

[1]Mr. SAMUEL M, [2]Mr. N Mahesh, [3]Mr. P Sugumaran,

Abstract:

The Borewell Rescue System (BRS) is a critical technology designed to address the alarming incidents of individuals, especially children, falling into open borewells, presenting life-threatening situations. This abstract outlines the conceptualization, design, and implementation of an automated Borewell Rescue System aimed at efficient and safe extrication of trapped individuals from these narrow and deep wells. The system comprises a robust framework integrating mechanical, electrical, and sensor-based components. At its core, the BRS employs a specially designed gripping mechanism, engineered to navigate through the narrow borewell dimensions while ensuring a secure hold on the trapped individual. The gripping mechanism is tethered to a high-strength cable that facilitates controlled ascent, ensuring the safety of the individual throughout the rescue operation. Advanced sensors and imaging technology form an integral part of the BRS, providing real-time data feedback to operators above ground. These sensors aid in mapping the borewell's interior, gauging the condition of the trapped individual, and guiding the automated gripping mechanism to optimize the rescue process. Furthermore, the system incorporates fail-safes and redundancies to mitigate risks and uncertainties associated with the complex rescue operations. Remote operation capabilities enable skilled rescue personnel to maneuver the system with

precision and expertise, ensuring a swift and safe extraction. The Borewell Rescue System stands as a testament to technological innovation, leveraging cutting-edge

with varied combinations of cutting parameters such as cutting speed, feed rate, and depth of cut during CNC turning of AlSi CP MMC. The machining responses including surface roughness, material removal rate, and tool wear are measured and recorded. Grey relational analysis is employed to establish the relationship between the CNC turning parameters and the machining responses. Through the analysis, the most influential parameters that significantly affect the machining performance of AlSi CP MMC are identified. Optimal parameter settings are determined based on grey relational grades to maximize material removal rate and minimize surface roughness and tool wear. The study emphasizes achieving an optimal balance between machining efficiency and surface quality. The findings illustrate the impact of CNC turning parameters on the machining performance of AlSi CP MMC, providing insights into selecting the most favorable parameter settings for enhanced machining efficiency and improved surface finish. This study contributes to advancing the understanding of CNC turning parameters for AlSi CP MMC through grey relational analysis, offering practical guidance for optimizing machining processes in industries dealing with metal matrix composites.

Keywords: CNC Turning, AlSi CP Metal Matrix Composite, Grey Relational Analysis, Machining Parameters, Surface Roughness, Material Removal Rate, Tool. Wear, Machining Efficiency

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

engineering to address humanitarian crises and mitigate the risks associated with borewell accidents. The successful implementation of this system promises not only enhanced rescue capabilities but also a significant reduction in response times during such emergencies, potentially saving precious lives.

Keywords: Borewell Rescue System, automated gripping mechanism, sensor technology, rescue operation, humanitarian crisis, technological innovation.

236.   Generation of hot water, hot air and desalinated water solar

[1]Mr. SAMUEL M, [2]Mr. T Arun Kumar, [3]Mr. A. Christian yesudass,
[1]Associate Professor, [2,3] II year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering.

Abstract:

This abstract presents a comprehensive approach to harnessing solar energy through a Solar Pond System (SPS) designed for the concurrent generation of hot water, hot air, and desalinated water. The system capitalizes on the principles of solar radiation absorption and thermal storage within a stratified pond, offering a sustainable and efficient solution for both energy and freshwater production. The Solar Pond System operates through distinct zones of varying salinity, leveraging the natural phenomenon of salinity gradients to trap and store solar energy. The top layer acts as a solar collector, absorbing sunlight and heating the water, while the lower layers maintain higher salinity levels, creating a thermal barrier and ensuring long-term heat retention. Through innovative heat exchange mechanisms, the SPS facilitates the extraction of hot water for domestic and industrial purposes, providing a consistent and renewable source of thermal energy. Concurrently, the system utilizes the stored thermal energy to drive air circulation, generating hot air for space heating or industrial applications. Moreover, the Solar Pond System integrates desalination processes into its functionality. By harnessing the temperature gradient within the pond, the system employs low-energy distillation methods, such as multi-stage flash distillation or membrane distillation, to produce desalinated water. This integration not only addresses the pressing need for freshwater in arid regions but also enhances the overall efficiency of the solar energy utilization. The synergistic operation of the Solar Pond System, catering to diverse energy needs and freshwater scarcity, highlights its potential as a sustainable and versatile solution for regions facing energy and water challenges. This abstract underscores the significance of this innovative approach in promoting renewable energy utilization and mitigating freshwater scarcity through an integrated solar-based system.

Keywords: Solar Pond System, solar energy, thermal energy, desalination, salinity gradient, renewable energy, freshwater production, sustainable technology.

237.   Development Solar Operated Electrical Two Wheeler
[1]Mr. SAMUEL M, [2]Mr. L Karthick, [3]Mr. P Solai Raj,

[1]Associate Professor, [2,3] II year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering.

Abstract:

This abstract presents the conceptualization, design, and realization of a Solar-Operated Electrical Two-Wheeler (SOET) aimed at addressing the growing demand for sustainable urban mobility solutions. The integration of solar power into the operation of an electric two-wheeler represents a novel approach toward reducing dependency on conventional energy sources and mitigating environmental impacts. The SOET system consists of an electric scooter/motorcycle equipped with a solar panel array seamlessly integrated into the vehicle's body. The solar panels are strategically positioned to maximize exposure to sunlight while ensuring aerodynamic efficiency. These panels harness solar energy and convert it into electrical power, supplementing the vehicle's onboard battery system. A sophisticated power management system orchestrates the flow of solar-generated electricity into the vehicle's battery, thereby extending the vehicle's range and reducing reliance on external charging stations. The integration of regenerative braking technology further enhances energy efficiency by capturing kineticenergy during braking and feeding it back into the battery. Additionally, the design incorporates lightweight and durable materials, optimizing energy efficiency without compromising the vehicle's performance or safety standards. The solar-powered electric two-wheeler offers commuters a sustainable, cost-effective, and environmentally friendly alternative for short to medium-range urban travel. This abstract underscores the potential of the Solar-Operated Electrical Two-Wheeler as a transformative solution in the realm of urban transportation, reducing greenhouse gas emissions and promoting renewable energy adoption in the automotive sector. The successful integration of solar power into electric two-wheelers presents a viable pathway toward sustainable mobility, aligning with global efforts towards a greener and more energy-efficient future.

Keywords: Solar-Operated Electrical Two-Wheeler, solar power integration, electric vehicles, sustainable mobility, renewable energy, urban transportation, energy-efficient vehicles.

238. Optimization of fsw process and tool parameter to attain maximum tensilestrength of al 7075-t6 al alloys by taguchi method

[1]Mr. SAMUEL M, [2]Mr. M K Kathiravan, [3]Mr. R Kumaran,
[1]Associate Professor, [2,3] II year Students, Department of Mechanical Engineering, Indra Ganesan College of Engineering.

Abstract:

This abstract outlines a study focused on optimizing the Friction Stir Welding (FSW) process parameters and tool configuration to achieve maximum tensile strength in Al 7075-T6 aluminum alloys. The FSW process, known for its ability to join high-strength alloys, requires precise control of various parameters to enhance mechanical properties, particularly tensile strength. The Taguchi optimization method is employed to systematically analyze and optimize the FSW process parameters, including rotational speed, traverse speed, axial force, and tool geometry. Through a series of

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

experimental trials based on Taguchi's orthogonal array design, the effects of these parameters on the tensile strength of the welded joints are systematically evaluated. The study investigates the interplay between process parameters and their impact on the microstructure and mechanical properties of the welds. Utilizing the Taguchi method, the optimal combination of parameters is determined to maximize tensile strength while ensuring weld quality and integrity. Furthermore, microstructural analysis techniques, such as optical microscopy and scanning electron microscopy, are employed to examine the grain structure, defects, and metallurgical changes within the welded zones. Correlating these findings with mechanical test results facilitates a comprehensive understanding of the relationship between process parameters, microstructure, and tensile strength. The outcomes of this study contribute to the advancement of FSW as a viable technique for joining high-strength aluminum alloys. The optimized process parameters and tool configuration identified through Taguchi optimization methodology serve as a valuable guide for achieving superior mechanical properties in Al 7075-T6 welded joints, crucial in industries demanding high-performance materials and structural integrity.

Keywords: Friction Stir Welding, Al 7075-T6 alloys, Taguchi method, optimization, tensile strength, process parameters, microstructure analysis, mechanical properties.

239.   Design And Analysis Of Chain Sprocket

[1]MR. GURUPRANESH P [2]Mr. N Manikandan, [3]Mr. R Muralidharan,
[1]Assistant Professor, [2,3] II year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering.

Abstract:

This abstract presents a comprehensive study focusing on the design and analysis of a chain sprocket, a critical component in power transmission systems. The primary objective is to optimize the sprocket's design parameters and evaluate its performance to enhance reliability, efficiency, and durability in various industrial applications. The design process involves meticulous consideration of factors such as tooth profile, pitch diameter, material selection, and manufacturing methods. Utilizing advanced CAD (Computer-Aided Design) software, different sprocket configurations are developed and analyzed for their mechanical properties and compatibility with specific chain types. Finite Element Analysis (FEA) serves as a pivotal tool in assessing the structural integrity and stress distribution within the sprocket under varying loads and operating conditions. By subjecting the sprocket to simulations replicating real-world scenarios, potential failure points and stress concentrations are identified, enabling refinement of the design to mitigate weaknesses and enhance overall performance. Furthermore, the study investigates the influence of material properties and surface treatments on wear resistance, fatigue life, and overall longevity of the sprocket. Through material testing and tribological analysis, optimal material choices and surface treatments are determined to ensure prolonged service life and reduced maintenance requirements. The findings from this study contribute to the development of a robust and efficient chain sprocket design, minimizing energy losses, improving power transmission efficiency, and reducing the risk of premature failure. The optimized sprocket design and analysis methodology presented in this study offer valuable insights for engineers

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-820 012

and industries seeking to enhance the reliability and performance of power transmission systems.

Keywords: Chain sprocket, design optimization, finite element analysis, mechanical properties, material selection, power transmission, durability, engineering analysis.

240. Optimization Of EDM Process Parameters On Al 7075 Using Different ToolProfile.

[1]MR. GURUPRANESH P [2]Mr. R Dinesh Kumar, [3]Mr. A.S. Jeyaranjan,
[1]Assistant Professor, [2,3] II year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering.

Abstract:

This abstract outlines a comprehensive investigation aimed at optimizing Electrical Discharge Machining (EDM) parameters on Al 7075 alloy using various tool profiles. EDM, a non-traditional machining process, is renowned for its precision in shaping hard and difficult-to-machine materials, making it particularly relevant in aerospace and manufacturing industries. The study focuses on exploring the influence of different tool profiles, such as cylindrical, conical, and spherical, on machining characteristics and surface quality of Al 7075 alloy. The EDM process parameters, including pulse on-time, pulse off-time, peak current, and tool feed rate, are systematically varied in accordance with an experimental design matrix. Utilizing statistical methods, specifically the Taguchi experimental design, the study analyzes the effects of these parameters and tool profiles on crucial output variables like material removal rate (MRR), surface roughness, and tool wear. The goal is to identify the optimal combination of EDM parameters and tool profiles that maximize MRR while minimizing surface roughness and tool wear. Moreover, microstructural analysis techniques, such as optical microscopy and scanning electron microscopy, are employed to investigate changes in the material's microstructure induced by the EDM process using different tool profiles. This analysis aids in understanding the effects of the machining process on the alloy's structural integrity and surface characteristics. The outcomes of this study provide insights into the most effective tool profile and EDM parameters for machining Al 7075 alloy, optimizing efficiency and surface quality. The findings contribute to advancing EDM as a viable method for precision machining of high-strength aluminum alloys, offering valuable guidance for industries seeking to improve machining processes and product quality.

Keywords: Electrical Discharge Machining, Al 7075 alloy, tool profile optimization, machining parameters, surface quality, material removal rate, microstructural analysis, non-traditional machining.

241. Characterisation Of Carbon Fibre Reinforced Polimer Matrix

[1]MR. GURUPRANESH P [2]Mr. K. Karthikayen, [3]Mr. S. Muthukumar,
[1]Assistant Professor, [2,3] II year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-820 012

Abstract:

This abstract presents a detailed investigation into the characterization of Carbon Fiber-Reinforced Polymer Matrix Composites (CFRP). CFRP composites are renowned fortheir exceptional strength-to-weight ratio and are extensively utilized in aerospace, automotive, and structural applications, demanding a comprehensive understanding of their mechanical properties and behavior. The study encompasses a multi-faceted approach to characterize CFRP composites, focusing on mechanical, thermal, and microstructural analyses. Mechanical properties, including tensile strength, flexural strength, and impact resistance, are evaluated through standardized testing procedures to assess the composite's load-bearing capabilities and durability. Thermal analysis techniques, such as differential scanning calorimetry (DSC) and thermogravimetric analysis (TGA), are employed to investigate the material's thermal stability, decomposition temperatures, and heat transfer characteristics. These analyses contribute to understanding the material's behavior under varying temperature conditions, critical for applications subjected to thermal stress. Moreover, microstructural characterization using scanning electron microscopy (SEM) and X-ray diffraction (XRD) provides insights into the composite's internal structure, fiber-matrix interaction, and potential defects. This microscopic analysis aids in identifying factors influencing the composite's mechanical properties and performance. The study integrates findings from these analyses to create a comprehensive profile of CFRP composites, elucidating the interplay between material composition, processing techniques, and resultant properties. The insights garnered from this characterization process offer valuable guidance for optimizing manufacturing processes, improving composite design, and enhancing performance in diverse applications. The outcomes of this research contribute to advancing the understanding of CFRP composites, facilitating informed decisions in material selection, design optimization, and engineering applications across various industries, thereby promoting the utilization of lightweight and high-strength materials for efficient and sustainable solutions.

Keywords: Carbon Fiber-Reinforced Polymer Composites, characterization, mechanical properties, thermal analysis, microstructural analysis, aerospace, automotive, material science.

242. Design And Analysis Of Horizantal Axis Wind Turbine Blade.

[1]MR. GURUPRANESH P [2]Mr. J Crown Meshak, [3]Mr. V Dinesh Kumar,
[1]Assistant Professor, [2,3] II year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering.

Abstract:

This abstract presents a comprehensive study focused on the design and analysis of blades for Horizontal Axis Wind Turbines (HAWT), aiming to optimize their performance, efficiency, and structural integrity. The design of wind turbine blades plays a pivotal role in harnessing wind energy effectively while ensuring long-term

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Mai-
Manikandam, Trichy-

reliability and durability. The study employs advanced computational tools and methodologies to design and analyze the aerodynamic and structural aspects of HAWT blades. Utilizing Computational Fluid Dynamics (CFD) simulations, various blade profiles and configurations are evaluated to optimize aerodynamic performance, minimizing drag and maximizing lift force generation. Furthermore, structural analysis techniques, including Finite Element Analysis (FEA), are employed to assess the mechanical behavior and stress distribution within the blades under different wind conditions. This analysis aids in optimizing the blade's structural design to withstand aerodynamic loads while maintaining structural integrity and fatigue resistance. The study also considers material selection, incorporating advanced composite materials and innovative manufacturing techniques to enhance the strength-to-weight ratio of the blades. The use of materials with superior fatigue characteristics and resistance to environmental factors contributes to prolonged operational life and reduced maintenance requirements. Additionally, experimental validation through wind tunnel testing and field trials corroborates the computational analyses, providing empirical evidence for the performance and efficiency of the designed turbine blades. The outcomes of this research contribute to advancing the design methodologies for HAWT blades, facilitating the development of more efficient, reliable, and cost-effective wind energy systems. The optimized blade design and analysis methodologies presented in this study offer valuable insights for the renewable energy sector, aiming to harness wind power more effectively and sustainably.

Keywords: Horizontal Axis Wind Turbine, blade design, aerodynamic analysis, structural analysis, computational simulations, material optimization, renewable energy, wind energy systems.

243. Optimization And Analysis Of Torsional Stiffness In FSAE Race Car FrameDesign

[1]MR. GURUPRANESH P [2]Mr. S Mathiyarasan, [3]Mr. M Mohandass,
[1]Assistant Professor, [2,3] II year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering.
Abstract:

This abstract outlines a comprehensive investigation focused on the design, optimization, and analysis of torsional stiffness in the frame of Formula SAE (FSAE) race cars. Torsional stiffness plays a crucial role in ensuring superior handling, stability, and overall performance of these high-performance racing vehicles. The study begins with a detailed exploration of various frame design configurations, considering materials, geometry, and structural layout. Utilizing Finite Element Analysis (FEA) and computational simulations, different frame designs are evaluated to optimize stiffness while minimizing weight, considering the dynamic forces experienced during racing maneuvers. Parametric studies are conducted to analyze the influence of key design parameters, such as frame geometry, material properties, and reinforcement techniques, on the torsional stiffness characteristics. These analyses aid in identifying the most effective design strategies to enhance torsional rigidity without compromising overall weight and structural integrity. Furthermore, experimental validation through

torsional stiffness testing provides empirical data to validate the computational models and simulations. The correlation between simulation results and real-world testing helps refine the design iterations, ensuring that the finalized frame design meets the stringent performance requirements of FSAE racing competitions. The outcomes of this research contribute to advancing the state-of-the-art in FSAE race car frame design, providing valuable insights for achieving an optimal balance between stiffness, weight, and performance. The optimized frame design and analysis methodologies presented in this study offer practical guidance for teams competing in FSAE competitions, aiming to construct agile, responsive, and competitive race cars.

Keywords: FSAE race car, frame design, torsional stiffness, Finite Element Analysis, computational simulations, parametric studies, structural optimization, racing vehicle dynamics.

244.   Design And Performance Analysis Of Centrifugal Pump Impeller ForEnhanced Efficiency

[1]MR. MADHAN J [2]Mr. M Praveen Kumar, [3]Mr. S.B. Saffar Hussain,
[1]Assistant Professor, [2,3]II year Students, Department of Mechanical Engineering,
Indra Ganesan College of Engineering.

Abstract:

This abstract encapsulates a detailed study focused on the design, analysis, and performance evaluation of a centrifugal pump impeller aimed at optimizing hydraulic efficiency and operational characteristics. The impeller, a critical component in centrifugal pumps, plays a pivotal role in fluid handling efficiency and overall pump performance. The study initiates with the design and optimization of the impeller geometry through computational fluid dynamics (CFD) simulations. Various impeller profiles, blade angles, and configurations are analyzed to achieve improved hydraulic performance, aiming to minimize losses due to turbulence and inefficiencies in fluid flow. Hydrodynamic analyses encompass assessments of parameters such as flow rate, pressure distribution, and velocity profiles within the impeller and pump casing. These analyses aid in optimizing the impeller design to enhance pump performance, maximize head, and minimize energy losses, leading to improved overall efficiency. Structural analysis techniques, including finite element analysis (FEA), are employed to evaluate the impeller's structural integrity under varying operating conditions, ensuring it can withstand hydraulic forces and rotational stresses without compromising reliability. Moreover, experimental validation through performance testing on prototype impellers provides empirical data to validate the computational models and simulations. This validation process enables refinement of the impeller design iterations, ensuring alignment between simulation predictions and real-world performance. The outcomes of this research contribute to advancing the design methodologies for centrifugal pump impellers, offering insights into optimizing hydraulic efficiency, reducing energy consumption, and enhancing overall pump performance. The optimized impeller design and analysis methodologies presented in this study offer valuable guidance for industries seeking to improve fluid handling systems and pump efficiency.

PRINCIPAL
Indra Ganesan College of Engineer'·⌐
IG Valley, Madurai Main Rc⌐
Manikandam, Trichy-620 012

Keywords: Centrifugal pump impeller, design optimization, computational fluid dynamics, hydraulic efficiency, performance analysis, structural integrity, fluid dynamics, pump systems.

245. Tribological Behavior Investigation Of Al7075 Alloy And Hybrid CompositeMaterials

[1]MR. MADHAN J [2]Mr. M Santhosh, [3]Mr. S Vincent Paul Raj,
[1]Assistant Professor, [2,3] II year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

Abstract:

This abstract presents a comprehensive study focused on investigating the tribological behavior of Al7075 alloy and hybrid composite materials, aiming to analyze their frictional, wear, and lubrication characteristics. Understanding the tribological properties of these materials is essential for enhancing their performance in various mechanical applications. The study involves the fabrication of hybrid composites by incorporating reinforcing materials, such as nanoparticles, fibers, or particles, into the Al7075 alloy matrix. Different compositions and configurations of these hybrid materials are synthesized to explore their tribological properties in comparison to the base Al7075 alloy. Tribological tests, including pin-on-disc, wear track analysis, and frictional studies, are conducted under varying operating conditions and loads. These tests aim to analyze the friction coefficient, wear rate, and surface damage mechanisms exhibited by both the Al7075 alloy and hybrid composite materials. Furthermore, the investigation includes analysis of the effect of lubricants and surface treatments on the tribological behavior of these materials. Various lubrication regimes and surface modifications are explored to assess their influence on reducing friction, minimizing wear, and enhancing the materials' durability. Microscopic analysis techniques, such as scanning electron microscopy (SEM) and profilometry, are employed to examine the surface morphology, wear mechanisms, and damage patterns resulting from tribological testing. These analyses aid in correlating the observed tribological behavior with the materials' microstructure and composition. The outcomes of this research contribute to advancing the understanding of the tribological properties of Al7075 alloy and hybrid composites, offering insights into optimizing their performance in mechanical applications. The findings from this study provide valuable guidance for industries seeking to improve materials' wear resistance, frictional characteristics, and durability in diverse engineering applications.

Keywords: Tribological behavior, Al7075 alloy, hybrid composite materials, friction, wear, lubrication, surface treatments, mechanical applications, material performance analysis.

246. Optimization of Process Parameters in Friction Welding of Al/SiCp Composite Materials

MR. MADHAN J [2]Mr. B. Dinesh Kumar, [3]Mr. P. Gopi,

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

[1]Assistant Professor, [2,3] II year Students, Department of Mechanical Engineering,Indra
Ganesan College of Engineering

Abstract:

This abstract presents an extensive study focused on the optimization of process parameters in the friction welding of Aluminum/Silicon Carbide Particulate (Al/SiCp) composite materials. Friction welding is a critical joining technique, and optimizing its parameters is vital for enhancing the quality and integrity of welded joints, particularly in composite materials. The study involves systematic experimentation and analysis to determine the optimal combination of friction welding parameters for Al/SiCp composites. Parameters such as rotational speed, axial pressure, frictional heating duration, and tool geometry are varied within specified ranges using a designed experimental setup. Through a comprehensive analysis using statistical tools like the Taguchi method, the influence of these parameters on welding characteristics is evaluated. The primary welding quality factors considered include joint strength, microstructural integrity, and interfacial bonding between the aluminum matrix and SiCparticles. Microstructural analysis techniques, including optical microscopy and scanning electron microscopy (SEM), are employed to examine the weld zone's structure, phase distribution, and potential defects resulting from different welding conditions. These analyses provide insights into the microstructural changes affecting the mechanical properties and integrity of the weld. Mechanical testing, such as tensile and hardness testing, is conducted to assess the strength and durability of the welded joints under varying process parameters. These tests aid in identifying the parameter combinations that yield optimal mechanical properties and structural integrity in the Al/SiCp friction-welded joints. The outcomes of this research contribute to advancing the understanding of friction welding in Al/SiCp composite materials, offering insights into optimizing process parameters for achieving robust and high-quality welds. The findings provide valuable guidance for industries seeking to enhance the performance and reliability of friction-welded joints in composite materials for diverse engineering applications.

Keywords: Friction welding, Al/SiCp composite materials, process parameter optimization, mechanical properties, microstructural analysis, welding quality,composite material joining.

247.   **Experimental Investigation of Enhanced Corrosion Resistance via Tin andSilver-Modified Galvanization**

[1]MR. MADHAN J [2]Mr. R. Karuppaiya   , [3]Mr. K Kristen Kennes,
[1]Assistant Professor, [2,3] II year Students, Department of Mechanical Engineering,Indra
Ganesan College of Engineering

Abstract:

This abstract presents an experimental investigation aimed at enhancing the corrosion res
is
    istance of galvanized surfaces through the integration of tin and silver. Galvanization
        widely adopted method for protecting metals against corrosion, and this study

PRINCIPAL
Indra Ganesan College of Engir ˙˙˙ˀˀ
IG Valley, Madurai Main R ·
Manikandam, Trichy-620 01₄

explores modifications to augment its protective properties using tin and silver additives. The research involves a systematic experimental setup to apply tin and silver as supplementary coatings or additives to traditional galvanized surfaces. Various techniques, including electroplating, alloying, and surface deposition, are employed to incorporate tin and silver into the galvanized layers. Corrosion testing procedures, including salt spray exposure, electrochemical impedance spectroscopy (EIS), and polarization studies, are conducted to evaluate the enhanced corrosion resistance of the modified galvanized surfaces. These tests simulate aggressive environmental conditions and measure the corrosion rate, surface integrity, and protective behaviour of the coatings against corrosive agents. Additionally, microscopic analysis techniques such as scanning electron microscopy (SEM) and X-ray diffraction (XRD) are employed to assess the morphological changes, elemental composition, and corrosion products formed on the surfaces post-exposure to corrosive environments. The experimental findings highlight the beneficial effects of tin and silver modifications in augmenting the corrosion resistance of galvanized surfaces. The results provide insights into the protective mechanisms and durability of the modified coatings, showcasing their potential for mitigating corrosion in various industrial applications. This research contributes to advancing the understanding of improved galvanization techniques usingtin and silver additives, offering valuable insights for industries seeking to enhance the longevity and durability of metal surfaces exposed to corrosive environments.
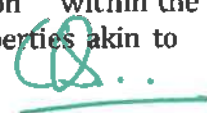
Keywords: Corrosion resistance, galvanization, tin and silver additives, surface coatings, corrosion testing, electrochemical analysis, protective mechanisms, metal surface protection.

248.   Bio Fabrication and Testing of Artificial Metacarpal Bone for Implantation

[1]MR. MADHAN J [2]Mr. P. Sundaraman   , [3]Mr. M Karuppaiyah,
[1]Assistant Professor, [2,3] II year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

Abstract:

The demand for efficient and reliable implants for metacarpal bone fractures has driven the exploration of biofabrication techniques in the field of orthopedics. This study presents the design, fabrication, and comprehensive testing of an artificial metacarpal bone intended for implantation purposes. Utilizing advanced biofabrication methods such as 3D printing and biomaterial engineering, a replica of the human metacarpal bone was constructed using biocompatible materials. The design aimed to replicate the structural and mechanical properties of the natural bone while ensuring compatibility with the human body. The fabricated artificial metacarpal bone underwent rigorous testing procedures to evaluate its mechanical strength, durability, and biocompatibility. Mechanical testing involved analyses of compressive strength, bending resistance, and torsional stability to ensure its ability to withstand physiological forces. Biological assessments included in vitro studies to analyze cell adhesion, proliferation, and cytocompatibility with human osteoblast cells. Additionally, in vivo experiments were conducted using animal models to assess tissue response and integration   within the host environment. Preliminary results indicate promising mechanical properties akin to

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

natural metacarpal bones, along with positive biocompatibility profiles. The findings suggest the potential for this artificial metacarpal bone to serve as a viable implant option for metacarpal bone fractures. This study contributes to the advancements in biofabrication techniques for orthopedic applications, offering a novel approach towards developing reliable and biocompatible implants for metacarpal bone injuries.

Keywords: Biofabrication, Artificial Metacarpal Bone, Implantation, Orthopedics, 3D Printing, Biocompatibility, Mechanical Testing, Biomaterials, Tissue Integration

249. Implementation of Swirl Flow Injection of Air-Fuel Mixture in SI

[1]MR. SARAVANAKUMAR C [2]Mr. M Sairaj, [3]Mr. G Tamilarasan,
[1]Assistant Professor, [2,3] II year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

Abstract:

This study investigates the implementation of swirl flow injection techniques for optimizing the air-fuel mixture in spark-ignition (SI) engines. Swirl flow, known for its ability to enhance combustion efficiency by improving mixture homogeneity, was employed as a method to augment the air-fuel mixture preparation process. Through computational simulations and experimental validation, various swirl flow injection strategies were analyzed and compared. Computational Fluid Dynamics (CFD) simulations were conducted to model the intake flow characteristics and combustion processes within the engine cylinder, evaluating different injection patterns and timings to achieve an optimal air-fuel distribution. Experimental tests were performed on an SI engine platform to validate the computational findings. Engine performance metrics, including combustion stability, fuel consumption, emissions, and torque output, were assessed under varying swirl flow injection configurations and engine operating conditions. The results demonstrate the influence of swirl flow injection on enhancing combustion efficiency and minimizing emissions in SI engines. Improved mixture homogeneity and combustion stability were observed with specific swirl flow patterns and injection timings, showcasing the potential for optimizing engine performance. This research contributes to advancing the understanding and application of swirl flow injection techniques in optimizing air-fuel mixture preparation for SI engines, emphasizing its potential to improve efficiency and reduce emissions in internal combustion engines.

Keywords: Swirl Flow Injection, Air-Fuel Mixture, Spark-Ignition Engines,Computational Fluid Dynamics (CFD), Combustion Efficiency, Engine Performance Optimization, Emissions Reduction

250. Design and Fabrication of Emergency Hybrid Two-Wheeler

[1]MR. SARAVANAKUMAR C [2]Mr. K Yogeshwaran, [3]Mr. V Sudharsan,
[1]Assistant Professor, [2,3] III year Students, Department of Mechanical Engineering,
Indra Ganesan College of Engineering

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main R
Manikandam, Trichy-820 012

Abstract:

This project aims to address emergency situations where conventional transportation systems might be disrupted, necessitating the development of a versatile hybrid two- wheeler. The design and fabrication process involved the integration of electric and manual propulsion systems to ensure reliable mobility in various crisis scenarios. The hybrid two-wheeler was conceptualized to operate in two modes: electrically powered and manually propelled. The electric system comprised a compact motor powered by rechargeable batteries, offering sustainable and efficient travel over short distances. Simultaneously, the manual propulsion system provided a backup mode for continued mobility even in the absence of electric charge. The design phase involved considerations for portability, maneuverability, and ease of assembly. Through iterative prototyping and testing, a lightweight yet sturdy frame was developed, accommodating both the electric propulsion components and the mechanisms for manual operation. Fabrication processes employed advanced materials and manufacturing techniques to ensure durability and efficiency while maintaining a lightweight structure. Rigorous testing was conducted to evaluate the performance, safety, and ergonomics of the hybrid two-wheeler in simulated emergency scenarios. Preliminary results indicate the successful integration of the hybrid propulsion systems, providing users with a reliable mode of transportation in challenging situations. The versatility of the design allows for easy adaptation to diverse terrains and user capabilities, enhancing its usability during emergencies. This project contributes to the development of innovative solutions for emergency transportation needs, offering a versatile and sustainable hybrid two- wheeler that combines electric and manual propulsion for enhanced mobility in crisis situations.

Keywords: Emergency Transportation, Hybrid Two-Wheeler, Electric Propulsion, Manual Operation, Design and Fabrication, Crisis Scenarios, Sustainable Mobility, Prototyping, Testing

251. Optimization of End Milling Process of MONEL 400 Using Grey RelationalAnalysis

1
1
MR. SARAVANAKUMAR C [2]Mr. S Hariharan, [3]Mr. J. Praveen Kumar,
Assistant Professor, [2,3] III year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

Abstract:

This study focuses on optimizing the end milling process parameters for MONEL 400, a nic
to
kel-copper alloy known for its challenging machinability characteristics. The aim is enhance machining efficiency and surface quality through the application of Grey Relational Analysis (GRA) to determine the most influential parameters in end milling operations. A series of experimental trials were conducted, varying key machining parameters such as cutting speed, feed rate, depth of cut, and tool geometry. Machining performance indicators including cutting forces, surface roughness, and tool wear were measured and recorded during the experiments. The obtained data was analyzed using Grey Relational Analysis to establish the relationships between the input parameters

PRINCIPAL
Indra Ganesan College of Engine...
IG Valley, Madurai Mair
Manikandam, Trichy-620 ს...

and the performance criteria. The grey relational grades were calculated to determine the optimal parameter settings that maximize machining performance while minimizing tool wear and surface roughness.

The results of the analysis revealed the significant influence of specific parameters on the machining performance of MONEL 400 during end milling operations. By employing GRA, the optimal combination of cutting parameters was identified, leading to improved machining efficiency and surface finish. This research contributes to the advancement of machining strategies for difficult-to-machine materials like MONEL 400, showcasing the efficacy of Grey Relational Analysis in optimizing end milling processes for enhanced productivity and surface quality.

Keywords: Optimization, End Milling, MONEL 400, Grey Relational Analysis, Machining Parameters, Surface Roughness, Cutting Forces, Tool Wear

252. Design and Analysis of Sound Isolation Case for Electric Motor

[1]MR. SARAVANAKUMAR C [2]Mr. R Premkumar, [3]Mr. M Ganesh,
[1]Assistant Professor, [2,3] III year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

Abstract:

This study focuses on the design and analysis of a sound isolation case tailored for electric motors, aiming to mitigate the noise generated during their operation. As electric propulsion systems gain prevalence in various applications, reducing their acoustic emissions becomes crucial for enhancing user experience and environmental comfort. The project encompasses a comprehensive design process integrating acoustic engineering principles with material science and structural analysis. Finite Element Analysis (FEA) simulations were employed to evaluate and optimize the acoustic performance of the proposed sound isolation case. Initial design iterations considered various factors such as geometrical shapes, material compositions, and structural configurations to effectively attenuate motor-generated noise. Acoustic simulation tools were utilized to predict sound transmission losses and identify resonance frequencies, guiding the refinement of the isolation case design. Experimental validation involved fabricating prototypes based on the optimized designs and conducting sound level measurements under controlled conditions. Comparative analyses between the baselinemotor operation and the motor housed within the sound isolation case were carried out to quantify the achieved noise reduction. The results demonstrate significant attenuation of acoustic emissions with the implemented sound isolation case, showcasing a substantial reduction in noise levels across various frequency spectra associated with electric motor operations. This research contributes to advancing the field of electric motor acoustic engineering by presenting an effective sound isolation solution. The designed case offers improved noise control and mitigation, facilitating quieter operation and enhancing the overall user experience in applications reliant on electric motors.

PRINCIPAL
Indra Ganesan College of Engineerin
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

Keywords: Sound Isolation, Electric Motors, Acoustic Engineering, Finite Element Analysis (FEA), Noise Reduction, Material Science, Structural Analysis, Acoustic Simulation, Prototyping, Noise Attenuation.

253. Optimization of Cutting Parameters in CNC Turning Machine UsingHarmony Search Algorithm

[1]MR. SARAVANAKUMAR C [2]Mr. R Sudhakar, [3]Mr. V Suseedran,
[1]Assistant Professor, [2,3] III year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

Abstract:

This study focuses on optimizing the cutting parameters in Computer Numerical Control (CNC) turning operations by employing the Harmony Search Algorithm (HSA). The objective is to enhance machining efficiency, surface quality, and tool life by identifying the most favorable combination of cutting parameters. The research methodology involved experimental trials varying cutting speed, feed rate, depth of cut, and tool material in CNC turning operations. Cutting forces, surface roughness, and tool wear were measured as performance indicators during these experiments. The Harmony Search Algorithm, inspired by the improvisation process of music players seeking a perfect state of harmony, was employed to search the multidimensional parameterspace efficiently. The algorithm was utilized to optimize the cutting parameters bygenerating new solutions iteratively, mimicking the improvisation process to converge towards an optimal solution. Simultaneously, mathematical models were developed to represent the relationships between the cutting parameters and machining performance criteria. These models were used within the Harmony Search Algorithm to guide the search towards parameter combinations that yield improved machining outcomes. The results demonstrate the effectiveness of the Harmony Search Algorithm in optimizing CNC turning parameters. The algorithm effectively identified optimal parameter sets that improved machining efficiency by minimizing cutting forces, reducing surface roughness, and enhancing tool life. This research contributes to the advancement of machining optimization techniques by showcasing the applicability and efficacy of the Harmony Search Algorithm in determining the optimal cutting parameters for CNC turning operations, facilitating enhanced machining performance and productivity.

Keywords: Optimization, Cutting Parameters, CNC Turning, Harmony Search Algorithm, Machining Efficiency, Surface Quality, Tool Life, Parameter Optimization, Mathematical Modeling, Machining Performance.

254. Friction Stir Welding of AA3103 Using High-Speed Steel (HSS)

1

Mr.JERRY ANDREWS FABIAN .S [2]Mr. G . Thanasekaran, [3]Mr. G. Venkatesh babu,

1

Assistant Professor, [2,3] III year Students, Department of Mechanical Engineering,Indra

(

anesan College of Engineering

PRINCIPAL
Indra Ganesan College of Engg.
IG Valley, Madurai Main Rea.
Manikandam, Trichy-620 012

Abstract:

This research investigates the feasibility and effectiveness of utilizing High-Speed Steel (HSS) as a tool material for Friction Stir Welding (FSW) of AA3103 aluminium alloy. FSW, known for its solid-state joining process, offers numerous advantages over conventional welding techniques, particularly in welding non-ferrous materials like aluminium alloys. The study involves experimental trials employing FSW on AA3103 aluminium alloy plates using HSS tools. Process parameters such as rotational speed, traverse speed, and tool geometry were systematically varied to assess their influence on weld quality, mechanical properties, and micro structural characteristics. Micro structural analyses were conducted using optical and electron microscopy techniques to investigate the evolution of the weld zone, including grain structure, presence of defects, and material flow patterns. Additionally, mechanical tests including tensile, micro hardness, and impact tests were performed to evaluate the mechanical integrity and performance of the welded joints. The results indicate the feasibility of employing HSS as a tool material for FSW of AA3103 aluminium alloy. Optimized process parameters yielded sound welds exhibiting fine microstructures, minimal defects, and mechanical properties comparable to or exceeding those of the base material. This research contributes to expanding the application of HSS in FSW processes for joining aluminium alloys, showcasing its potential as a viable tool material. The findings offer insights into optimizing FSW parameters for AA3103 aluminium alloy welding using HSS tools, facilitating enhanced weld quality and mechanical performance.

Keywords: Friction Stir Welding, AA3103 Aluminium Alloy, High-Speed Steel (HSS),Weld Quality, Micro structural Analysis, Mechanical Properties, Welded Joints, Process Optimization, Solid-State Joining.

255.   Investigation of Corrosion Behaviour of Zinc Aluminium Alloy-Graphite in Metal Matrix Composite

[1] Mr.JERRY ANDREWS FABIAN .S [2]Mr. S Selvakumar, [3]Mr. K Thamotharan, [1]Assistant Professor, [2,3] III year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

This research investigates the corrosion behaviour of Zinc Aluminium Alloy-Graphite (ZAAG) metal matrix composites, focusing on their susceptibility to corrosion in diverse environments. Metal matrix composites, especially those incorporating graphite as a reinforcing phase, offer enhanced mechanical properties but their corrosion resistance remains a critical aspect requiring thorough examination. The study involves the fabrication of ZAAG metal matrix composites through stir casting, varying the graphite content to create composite specimens with different compositions. These specimens were subjected to diverse corrosion tests including electrochemical polarization, immersion, and salt spray tests to evaluate their corrosion resistance in aggressive environments. Micro structural analyses using scanning electron microscopy (SEM) and elemental mapping techniques were employed to investigate the interfacial characteristics between the reinforcing graphite phase and the ZAAG matrix after

PRINCIPAL
Indra Ganesan College of Engineer...
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

exposure to corrosive environments. Corrosion mechanisms, including galvanic corrosion and localized attack, were studied to comprehend the degradation phenomena. The results elucidate the influence of graphite content on the corrosion behaviour of the ZAAG metal matrix composites. Lower graphite content was found to contribute to improved corrosion resistance, while higher graphite concentrations exhibited increased vulnerability to corrosion due to the formation of localized corrosion sites. This research contributes to understanding the complex interplay between composition, microstructure, and corrosion behaviour in ZAAG metal matrix composites. The findings offer insights into optimizing the composite composition to achieve a balance between mechanical properties and corrosion resistance, advancing their potential for diverse engineering applications.

Keywords: Corrosion Behaviour, Metal Matrix Composites, Zinc Aluminium Alloy-Graphite, Corrosion Tests, Micro structural Analysis, Galvanic Corrosion, Composite Optimization, Corrosion Mechanisms, Environmental Degradation.

256. Performance and Emission Studies of Bio-Diesel Fuelled Diesel Engine withEthanol as Additive

[1] Mr.JERRY ANDREWS FABIAN .S [2]Mr. P Depak, [3]Mr. K Wanten Berk,
[1]Assistant Professor, [2,3] III year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

Abstract:

This research investigates the effects of incorporating ethanol as an additive in biodiesel-fueled diesel engines, aiming to evaluate its impact on engine performance and emissions. With the growing emphasis on alternative fuels, biodiesel stands as a promising renewable option, and exploring additives like ethanol could further enhanceits properties for sustainable combustion. Experimental studies were conducted on a diesel engine fuelled with various blends of biodiesel and ethanol. The engine performance parameters including brake specific fuel consumption (BSFC), brake thermal efficiency (BTE), and engine emissions such as nitrogen oxides (NOx), carbon monoxide (CO), hydrocarbons (HC), and particulate matter (PM) were evaluated under different operating conditions. The results revealed significant improvements in certain engine performance parameters with the addition of ethanol to biodiesel blends. Specifically, the addition of ethanol exhibited favorable effects on combustion characteristics, leading to reduced emissions of NOx, CO, HC, and PM, while demonstrating enhancements in engine efficiency. Comprehensive analyses of combustion characteristics were conducted to elucidate the synergistic effects of biodiesel-ethanol blends on the combustion process within the engine cylinder. These analyses provided insights into the altered combustion kinetics and their correlation with emission reductions and improved engine performance. This research contributes valuable insights into the utilization of ethanol as an additive in biodiesel blends for diesel engines. The findings highlight the potential of these blended fuels to achieve lower emissions and enhanced engine efficiency, thereby paving the way for more environmentally sustainable and efficient fuel alternatives.

PRINCIPAL
Indra Ganesan College of Engi
IG Valley, Madurai Main
Manikandam, Trichy-620

Keywords: Biodiesel, Ethanol Additive, Diesel Engine, Engine Performance, Emission Reduction, Combustion Characteristics, Sustainable Fuels, Alternative Fuels, Engine Efficiency.

257. Experimental Investigation on Effects of Biodiesel Blends

[1]Mr.JERRY ANDREWS FABIAN .S [2]Mr. R Ram Prasath, [3]Mr. J Crown Meshak [1]Assistant Professor, [2,3] III year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

Abstract:

This study delves into the effects of biodiesel blends on the performance and emissions characteristics of internal combustion engines. With the escalating interest in renewable fuels, biodiesel has emerged as a promising alternative to conventional petroleum-based diesel. The research aims to comprehensively evaluate the impact of biodiesel blending on engine operation and exhaust emissions. Experimental investigations were conducted using various biodiesel blends, altering the composition ratios of biodiesel to conventional diesel fuel. A series of tests were carried out on a compression ignition engine to assess performance parameters such as brake specific fuel consumption (BSFC), brake thermal efficiency (BTE), and emissions including nitrogen oxides (NOx), carbon monoxide (CO), hydrocarbons (HC), and particulate matter (PM). The results highlighted the influence of biodiesel blending on engine performance and emissions characteristics. Specific blend ratios exhibited variations in combustion properties, with changes in ignition delay and combustion efficiency affecting the engine's operational behavior. Emission analyses revealed trends in the reduction of certain pollutants with increasing biodiesel content, albeit with variations across different engine load and speed conditions. These variations underscored the complex relationship between biodiesel blending ratios and emissions output. This research contributes valuable insights into the impact of biodiesel blends on engine performance and emissions, providing a basis for optimizing blend ratios to achieve a balance between improved environmental impact and engine efficiency.

Keywords: Biodiesel Blends, Internal Combustion Engines, Engine Performance, Emissions Characteristics, Renewable Fuels, Combustion Properties, Exhaust Emissions,Alternative Energy Sources.

258.   Comparative Study of Fiber Reinforced Polymer Sandwich Structures
[1]Mr.JERRY ANDREWS FABIAN .S [2]Mr. V Dinesh Kumar, [3]Mr. S Mathiyarasan [1]Assistant Professor, [2,3] III year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering
Abstract:

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

This research investigates and compares the mechanical properties, structural behavior, and performance characteristics of fiber reinforced polymer (FRP) sandwich structures. Sandwich structures, comprising a lightweight core material between two FRP facesheets, offer an exceptional strength-to-weight ratio and find diverse applications in aerospace, marine, and civil engineering industries. The study involves the fabrication and testing of FRP sandwich panels using various core materials such as foam, honeycomb, and balsa wood, combined with different types of FRP face sheets. Mechanical tests including flexural, compressive, and tensile tests were conducted to evaluate the stiffness, strength, and failure modes of these sandwich structures. Additionally, analyses were performed to investigate the behavior of these structures under different loading conditions, including static, dynamic, and fatigue loading. Computational simulations using finite element analysis (FEA) were employed to complement experimental findings and understand the stress distribution and failure mechanisms within the sandwich panels. The results provide insights into the comparative performance of FRP sandwich structures with different core materials and configurations. Variations in mechanical properties, failure modes, and deformation characteristics were observed, highlighting the influence of core material selection and its interaction with FRP face sheets. This research contributes to advancing the understanding of FRP sandwich structures, offering valuable information for optimizing design configurations based on specific application requirements. The findings aid in the selection and design of efficient and durable sandwich structures for various engineering applications.

Keywords: Fiber Reinforced Polymer (FRP), Sandwich Structures, Core Materials, Mechanical Properties, Structural Behavior, Failure Modes, Finite Element Analysis (FEA), Lightweight Structures, Engineering Applications.

259. Studies on "Cold Metal Transfer Welding" of Al Alloy using ER4043 &ER5356 Filler Metal

[1]Mr. S.MAHESHWARAN [2]Mr. S.B. Saffar Hussain, [3]Mr. M Santhosh
[1]Assistant Professor, [2,3] III year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering
Abstract:

This research investigates the application of Cold Metal Transfer (CMT) welding

technique for joining Aluminum (Al) alloys using ER4043 and ER5356 filler metals. CMT welding, known for its low heat input and precise control, offers promising advantages for welding aluminum alloys, reducing distortion and minimizing metallurgical defects. Experimental studies were conducted employing CMT welding on aluminum alloy plates using ER4043 and ER5356 filler metals. Process parameters such as wire feed speed, welding current, and arc length were systematically varied to optimize the welding conditions for each filler metal. Microstructural analyses using optical and electron microscopy techniques were employed to examine the weld zones and assess the microstructural characteristics, including grain structure, intermetallic formation, and porosity. Mechanical tests including tensile, hardness, and impact tests were performed to evaluate the mechanical properties and joint integrity. The results

PRINCIPAL
Indra Ganesan College of Engin:
IG Valley, Madurai Main Rd
Manikandam, Trichy-620 012

revealed distinctive microstructural variations and mechanical properties between welds created using ER4043 and ER5356 filler metals under optimized CMT welding parameters. ER4043 exhibited improved weld bead appearance and ductility, while ER5356 demonstrated higher tensile strength and hardness in the welded joints. Comprehensive analyses of the metallurgical and mechanical properties provided insights into the influence of filler metal selection on the welding outcomes. The findings contribute to understanding the suitability of ER4043 and ER5356 filler metals in CMT welding of aluminum alloys, aiding in the selection of appropriate filler materials for specific application requirements.

Keywords: Cold Metal Transfer Welding, Aluminum Alloy, ER4043 Filler Metal, ER5356 Filler Metal, Microstructural Analysis, Mechanical Properties, Joint Integrity, Metallurgical Defects, Welding Optimization.

260. Parameter Optimization of Al 6001 on EDM Machining Process using Grey Relational Analysis

[1]Mr. S.MAHESHWARAN [2]Mr. P. Gopi, [3]Mr. R. Karuppaiya
[1]Assistant Professor, [2,3] III year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

Abstract:

This study focuses on optimizing the machining parameters for Electrical Discharge Machining (EDM) of Aluminum 6001 alloy through the application of Grey Relational Analysis (GRA). EDM is a non-conventional machining process known for its precision in machining conductive materials, and the optimization of parameters is crucial for enhancing efficiency and quality in the manufacturing process. Experimental trials were conducted varying key machining parameters such as pulse-on time, pulse-off time, peak current, and electrode material during the EDM process of Aluminum 6001 alloy. Performance indicators including material removal rate (MRR), surface roughness (Ra), and tool wear rate were measured and recorded. Grey Relational Analysis was employed to evaluate the relationships between the input parameters and performance criteria, enabling the determination of the optimal parameter settings that maximize MRR while minimizing surface roughness and tool wear. The results highlighted the influence of specific EDM parameters on the machining performance of Aluminum 6001. Through GRA, the optimized parameter combination was identified, demonstrating improved MRR while maintaining acceptable levels of surface roughness and minimal tool wear. This research contributes to advancing the understanding of parameter optimization in EDM machining of Aluminum 6001 using Grey Relational Analysis. The findings offer insights into the significant parameters affecting machining performance,
facilitating the enhancement of process efficiency and quality in the manufacturing of aluminum components.

PRINCIPAL
Indra Ganesan College of Engineer:
IG Valley, Madurai Main Roa:
Manikandam, Trichy-620-012

This research investigates the integration of temperature storage systems to enhance the efficiency and performance of reheating solar heaters. Solar water heaters, while efficient under optimal conditions, often face challenges related to inconsistent heat supply, particularly during periods of fluctuating solar radiation or varying demand. The study explores the incorporation of temperature storage systems as a means to address these challenges, focusing on capturing excess thermal energy during peaksunlight hours and efficiently storing it for later use during periods of reduced solar input or increased demand. Experimental setups were developed to simulate and analyze the performance of solar heaters equipped with temperature storage systems. Various storage mediums and configurations, including phase change materials, sensible heat storage, and stratified storage tanks, were evaluated to assess their effectiveness in storing and releasing thermal energy. Performance metrics such as heat retention, temperature stability, and overall system efficiency were quantified under different operating conditions. Comparative analyses were conducted between conventional solar heaters and those integrated with temperature storage systems to elucidate the improvements achieved through storage-based reheating. The results demonstrated the efficacy of temperature storage systems in enhancing the performance and reliability of solar water heaters. The integration of these systems showcased increased energy utilization, improved heat retention, and enhanced system resilience to fluctuations in solar input and demand. This research contributes to advancing the design and efficiency of solar water heaters by proposing temperature storage systems as a viable solution to mitigate the intermittency issues associated with solar energy utilization, thereby enhancing their practicality and effectiveness in diverse environmental conditions.

Keywords: Reheating Solar Heaters, Temperature Storage Systems, Thermal EnergyStorage, Solar Energy Utilization, Heat Retention, System Efficiency, Phase Change Materials, Sustainable Heating.

263. Fabrication and Characterization of Al 7075 Hybrid Metal MatrixComposites

[1]Mr. S.MAHESHWARAN [2]Mr. J. Praveen Kumar, [3]Mr. R Premkumar
[1]Assistant Professor, [2,3] III year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

Abstract:

This research investigates the fabrication and characterization of hybrid metal matrix composites (MMCs) based on Al 7075 alloy reinforced with multiple reinforcements. Me

pro
tal matrix composites, known for their enhanced mechanical and functional perties, offer diverse applications in aerospace, automotive, and structural engineering industries. The study focuses on the development of hybrid composites by reinforcing the Al 7075 matrix with a combination of ceramic, metallic, or carbon-based reinforcements. Various reinforcement materials, such as silicon carbide (SiC), alumina (Al2O3), and carbon nanotubes (CNTs), were incorporated to achieve synergistic improvements in mechanical performance. Fabrication methods including stir casting, powder metallurgy, or liquid infiltration techniques were employed to produce the

PRINCIPAL
Indra Ganesan College of Engineering,
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

261. Optimization of Friction Welded Aluminium-Based Metal Matrix Composite Joints

[1]Mr. S.MAHESHWARAN [2]Mr. P Karuppaiyah, [3]Mr. R Ram Prasath
[1]Assistant Professor, [2,3] III year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

Abstract:

This research investigates the optimization of friction welding parameters to enhance the quality and mechanical properties of joints in aluminium-based metal matrix composites (MMCs). Friction welding stands as a promising method for joining MMCs due to its solid-state nature, offering potential benefits in structural integrity and performance. Experimental studies were conducted utilizing varying process parameters such as rotational speed, axial pressure, and dwell time during friction welding of aluminium-based MMCs. The MMC specimens, comprising aluminium reinforced with ceramic or metallic particles, were subjected to different welding conditions. Mechanical tests including tensile, fatigue, and microhardness examinations were performed to assess the strength, fatigue resistance, and hardness of the friction- welded joints. Microstructural analyses using microscopy techniques were conducted to investigate the weld interfaces and identify potential defects. Optimization techniques, including response surface methodology (RSM) or Taguchi methods, were applied to determine the most influential parameters and their optimal combination for achieving superior joint properties in the aluminium-based MMCs. The results showcased the influence of friction welding parameters on the mechanical properties and microstructural characteristics of the joints in aluminium-based MMCs. Through optimization, specific parameter combinations were identified, resulting in enhanced joint strength, fatigue resistance, and favorable microstructures at the weld interfaces. This study contributes to the advancement of friction welding techniques for aluminium-based MMCs, providing valuable insights into the optimal parameter settings for achieving robust and high-performance joints in these advanced materials.

262. Reheating Solar Heaters Using Temperature Storage System

[1]Mr. S.MAHESHWARAN [2]Mr. G Tamilarasan, [3]Mr. K Yogeshwaran
[1]Assistant Professor, [2,3] III year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

Abstract:

PRINCIPAL
Indra Ganesan College of Engineer
IG Valley, Madurai Main Ro.
Manikandam, Trichy-620 0.

hybrid MMCs. The manufactured composite specimens underwent a series of characterization tests to evaluate their microstructural, mechanical, and thermal properties. Microstructural analyses using microscopy techniques were conducted to examine the distribution, morphology, and interfacial bonding between the matrix and reinforcements. Mechanical tests including tensile, hardness, and wear resistance measurements were performed to assess the strength, hardness, and tribological behavior of the composites. The results highlighted the influence of various reinforcement combinations on the properties of Al 7075 hybrid composites. Synergistic effects were observed in mechanical properties, showcasing improvements in tensile strength, hardness, and wear resistance compared to the base alloy. This research contributes to advancing the understanding of hybrid metal matrix composites, offering insights into the fabrication techniques and performance characteristics of Al 7075-based composites reinforced with multiple materials. The findings provide a basis for optimizing composite formulations for specific applications requiring enhanced mechanical properties.

Keywords: Metal Matrix Composites, Al 7075 Alloy, Hybrid Composites, Reinforcement Materials, Fabrication Techniques, Mechanical Properties, Microstructural Analysis, Tribological Behavior, Aerospace Applications.

264. Friction Stir Welding of Al Plate and its Influence of Different Pins

[1]Mr. C.JEGATHEESAN [2]Mr. V Suseedran, [3]Mr. G . Thanasekaran
[1]Assistant Professor, [2,3] III year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

Abstract:

This study investigates the friction stir welding (FSW) process on aluminum (Al) plates using various pin tool configurations to assess their influence on weld quality and mechanical properties. FSW is recognized for its solid-state joining technique, particularly beneficial for aluminum alloys due to its ability to mitigate traditional fusion-based welding challenges. Experimental trials were conducted employing different pin tool designs and materials during FSW on Al plates. Process parameters such as rotational speed, traverse speed, and tool geometry were controlled to optimize welding conditions for each pin configuration. Microstructural analyses using optical and electron microscopy techniques were conducted to examine the weld zones, identifying microstructural changes, grain refinement, and defect formations. Mechanical tests, including tensile, hardness, and impact tests, were performed to evaluate the strength and ductility of the welded joints. The results highlighted distinct variations in microstructural features and mechanical properties influenced by different pin tool configurations. Pin geometries, such as threaded, tapered, or cylindrical pins, displayed varying effects on weld quality, heat generation, and material flow during the welding process. Comprehensive analyses of the microstructure-mechanical property relationship provided insights into the performance variations between different pin tool designs. Understanding the correlation between pin configurations and resultant weld characteristics aids in optimizing FSW parameters for Al plate welding applications. This study contributes to the advancement of FSW techniques for

aluminum plates, offering valuable insights into the effects of diverse pin tool configurations on weld quality and mechanical properties. The findings facilitate the selection and optimization of pin tool designs to achieve superior weld performance in aluminum FSW applications.

Keywords: Friction Stir Welding (FSW), Aluminum Plates, Pin Tool Configurations, Weld Quality, Microstructural Analysis, Mechanical Properties, Welded Joints, Solid-State Joining, Weld Optimization.

265. Comparison of Waste Organic Ash Bricks with Fly Ash Bricks

[1]Mr. C.JEGATHEESAN [2]Mr. K Thamotharan[3]Mr. P Depak
[1]Assistant Professor, [2,3] III year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

Abstract:

This study presents a comparative analysis between waste organic ash bricks and conventional fly ash bricks, aiming to evaluate their mechanical properties, environmental impact, and feasibility as sustainable construction materials. As the demand for eco-friendly building materials grows, exploring alternative sources forbrick production becomes imperative. Experimental investigations were conducted to fabricate bricks using waste organic ash, sourced from organic waste combustion or agricultural residues, alongside traditional fly ash bricks. Various tests including compressive strength, water absorption, durability, and environmental impact assessments were carried out on both types of bricks. Mechanical tests revealed the compressive strength, modulus of rupture, and resistance to water absorption of the waste organic ash bricks in comparison to fly ash bricks. Durability tests evaluated their performance under harsh environmental conditions, simulating weathering effects and prolonged exposure. Environmental impact assessments encompassed analyses of the energy consumption, carbon footprint, and emission profiles associated with the production processes of both types of bricks, aiming to understand their sustainability quotient. The results highlighted distinctive mechanical properties and environmental impacts between waste organic ash bricks and fly ash bricks. Waste organic ash bricks exhibited comparable or superior mechanical strength while showcasing a reduced environmental footprint in terms of energy consumption and emissions during production. This research contributes to the evaluation and understanding of waste organic ash as a potential alternative material for brick production, offering insights into its mechanical performance and sustainability compared to conventional fly ash bricks.

Keywords: Waste Organic Ash Bricks, Fly Ash Bricks, Sustainable Construction Materials, Mechanical Properties, Environmental Impact, Compressive Strength, Durability, Sustainability Assessment.

266. Generation of Hot Water, Hot Air, and Desalinated Water in Solar Pond

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

[1]Mr. C.JEGATHEESAN [2]Mr. Mohammed Isaq [3]Mr. Naveen Raj
[1]Assistant Professor, [2,3] III year Students, Department of Mechanical Engineering,Indra
Ganesan College of Engineering

Abstract:

This study explores the multifunctional applications of solar ponds for the generation of hot water, hot air, and desalinated water, aiming to harness renewable energy for diverse practical uses. Solar ponds, characterized by their ability to trap and store solar energy, offer a promising avenue for sustainable energy utilization and freshwater production. Experimental setups were designed to evaluate and optimize solar pond systems for multiple functionalities. The solar ponds were configured with appropriate materials and geometry to efficiently collect and store solar energy while facilitating distinct extraction methods for hot water, hot air, and desalination. The solar pond's heat collection and storage capabilities were assessed through temperature monitoring and heat transfer analyses. Heat exchangers and absorption systems were integrated to extract hot water for domestic or industrial purposes and hot air for space heating or drying applications. Desalination processes, including solar-driven distillation or membrane-based techniques, were employed to convert brackish or saline water into potable water utilizing the collected solar energy within the pond. The study conducted analyses on the efficiency, productivity, and economic viability of the multifunctional solar pond system. Assessments included thermal efficiency, desalination rates, and cost-benefit analyses to evaluate the system's practicality and sustainability for real- world applications. The results showcased the multifaceted capabilities of solar pondsin efficiently providing hot water, hot air, and desalinated water. Optimization of systemdesign and integration of multiple functionalities highlighted the potential for widespread adoption of solar pond technology in energy-efficient water production and space heating applications. This research contributes to advancing the utilization of solar ponds as multifunctional systems, providing renewable energy solutions for water heating, air heating, and desalination, thereby contributing to sustainable energy and water resource management.

Keywords: Solar Pond, Hot Water Generation, Hot Air Generation, Desalinated Water, Renewable Energy, Solar Energy Utilization, Multifunctional Systems, Sustainable WaterProduction, Heat Transfer.

267. Performance and Evaluation of a Mini Flash Dryer

[1]Mr. C.JEGATHEESAN [2]Mr. M. Aravinth [3]Mr. I.S. Joyal
[1]Assistant Professor, [2,3] III year Students, Department of Mechanical Engineering,Indra
Ganesan College of Engineering

Abstract:

This study presents the design, development, and performance evaluation of a mini

flash dryer tailored for small-scale drying applications. Flash drying, known for its rapid and efficient moisture removal from various materials, holds significance in diverse industries including agriculture, food processing, and waste management. The mini

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

flash dryer was designed and fabricated to accommodate small-scale drying requirements, utilizing hot air as the drying medium. The system's performance was evaluated by conducting experimental trials on different materials, including agricultural produce, food waste, and industrial by-products. Assessments of the dryer's performance involved analyses of drying rates, moisture removal efficiency, energyconsumption, and the quality of dried products. Operational parameters such as inlet air temperature, airflow rate, and residence time were varied to optimize drying conditionsand maximize efficiency. The study encompassed evaluations of the system's scalability, portability, and cost-effectiveness for small-scale applications. Comparative analyses with conventional drying methods were conducted to highlight the advantages of the mini flash dryer in terms of energy efficiency and drying time. The results demonstratedthe effectiveness of the mini flash dryer in efficiently removing moisture from diverse materials while maintaining product quality. Optimal operating parameters were identified, showcasing enhanced drying rates and energy efficiency compared to conventional drying techniques. The mini flash dryer's compact design, low energy consumption, and versatility in handling different materials underscored its suitability for small-scale drying operations in resource-constrained settings or niche applications. This research contributes to advancing drying technology by introducing a mini flash dryer tailored for small-scale applications. The findings emphasize its efficiency, portability, and potential for sustainable drying practices in various industries, thereby facilitating improved moisture removal and product preservation.

268. Investigation of Tribological Behavior of A356 and A356 Hybrid Composite

[1]Mr. C.JEGATHEESAN [2]Mr. A Ramakkannan [3]Mr. R Saravanan
[1]Assistant Professor, [2,3] III year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

Abstract:

This research investigates the tribological characteristics and wear behavior of A356 aluminum alloy and A356 hybrid composites, aiming to assess their suitability for applications requiring enhanced mechanical and tribological properties. Tribological studies play a crucial role in determining material performance in various engineering applications, especially in components subjected to sliding or frictional interactions. Experimental evaluations were conducted to analyze the tribological behavior of A356 aluminum alloy and A356 hybrid composites reinforced with different materials such as silicon carbide (SiC), graphite, or other particulate reinforcements. Tests included pin-on-disk, wear tests, and sliding wear analyses under varying loads, speeds, and environmental conditions. Microstructural examinations using microscopy techniques were employed to investigate the wear mechanisms, surface morphologies, and material transfer phenomena occurring during tribological interactions. Wear rate calculations and friction coefficient analyses were performed to quantify and compare the tribological performance of the materials. The results revealed distinct tribological

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

behaviors between A356 aluminum alloy and A356 hybrid composites. The hybrid composites exhibited altered wear characteristics, reduced wear rates, and improved frictional properties compared to the base alloy due to the reinforcing phases enhancing the material's resistance to wear. Comprehensive analyses of wear mechanisms, such as abrasion, adhesion, and fatigue, provided insights into the improved tribological performance observed in the A356 hybrid composites. Understanding these mechanisms aids in optimizing material compositions for specific tribological applications. This study contributes to advancing the understanding of A356 aluminum alloy and A356 hybrid composites' tribological behavior, providing valuable insights into their wear resistance and frictional properties. The findings offer guidance for optimizing material formulations for enhanced tribological performance in engineering applications.

Keywords: Tribological Behavior, A356 Aluminum Alloy, Hybrid Composites, Wear Characteristics, Frictional Properties, Wear Mechanisms, Microstructural Analysis, Material Optimization, Engineering Applications.

269. Design and Analysis of CO2 Scrubber for Boiler

[1]Mr. THIRUNAVUKARASU. R [2]Mr. R Gunaseelan [3]Mr. M Karthik
[1]Assistant Professor, [2,3] III year Students, Department of Mechanical Engineering, Indra Ganesan College of Engineering

Abstract:

This research focuses on the design, simulation, and analysis of a CO2 scrubber system tailored for boiler emissions, aiming to mitigate carbon dioxide (CO2) emissions in industrial settings. CO2 scrubbers, known for their capability to capture and reduce CO2 emissions, play a vital role in environmental sustainability and emission control strategies. The study involved the conceptualization and simulation of a CO2 scrubber system specifically integrated with boiler exhausts. Computational modeling and simulation techniques, including Computational Fluid Dynamics (CFD) simulations, were employed to optimize the scrubber's design for efficient CO2 capture. The CO2 scrubber system's design parameters, such as packing materials, scrubbing solution composition, and contactor configurations, were systematically varied and analyzed to maximize CO2 removal efficiency while minimizing energy consumption and operational costs. Simulations were conducted to evaluate the scrubber's performance under different operating conditions, including varying CO2 concentrations and flow rates, to assess its effectiveness in capturing CO2 emissions from boiler flue gases. The results demonstrated the efficacy of the designed CO2 scrubber system in effectively capturing CO2 from boiler emissions. Optimized design configurations showcased enhanced CO2 removal efficiency while ensuring minimal pressure drop and operational energy requirements. Comprehensive analyses were performed to assess the economic feasibility and environmental impact of implementing the CO2 scrubber system in industrial boiler settings. Cost-benefit analyses and environmental assessments were conducted to evaluate the system's practicality and contribution to

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

emission reduction efforts. This research contributes to advancing CO_2 capture technologies for industrial emissions, offering insights into the design and optimization of CO_2 scrubber systems tailored for boiler applications. The findings provide a basis for implementing efficient CO_2 capture solutions in industrial settings, aligning with sustainability goals and emission reduction targets.

Keywords: CO_2 Scrubber, Boiler Emissions, Carbon Dioxide Capture, Emission Control, Computational Fluid Dynamics (CFD), Environmental Sustainability, Design Optimization, Industrial Emissions.

270. Aluminum Metal Matrix Composite with Si3N4 and Mg Reinforcement

[1]Mr. THIRUNAVUKARASU. R [2]Mr. P Sabarinathan [3]Mr. R Shyam Sundar [1]Assistant Professor, [2,3] III year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

Abstract:

This study investigates the development and characterization of aluminum (Al) metal matrix composites (MMCs) reinforced with silicon nitride (Si3N4) and magnesium (Mg) particles, aiming to enhance the mechanical and functional properties of the base aluminum alloy. Metal matrix composites have garnered significant interest for their potential applications in aerospace, automotive, and structural engineering due to their improved performance over conventional alloys. The fabrication process involved the incorporation of Si3N4 and Mg particles into the Al matrix using powder metallurgy techniques. Various composite compositions and processing parameters were explored to achieve homogenous dispersion and desirable interfacial bonding between the matrix and reinforcements. The fabricated composites underwent comprehensive characterization employing a range of analyses. Microstructural examinations using microscopy techniques provided insights into the distribution, morphology, andinterfacial characteristics of the reinforced phases within the Al matrix. Mechanical tests including tensile, hardness, and impact tests were conducted to evaluate the strength, hardness, and toughness of the composites. Additionally, tribological analyses wereperformed to assess the wear resistance and frictional behavior of the reinforced Al matrix. The results demonstrated the influence of Si3N4 and Mg reinforcement on the mechanical and tribological properties of the Al matrix composites. The optimized compositions exhibited enhanced mechanical strength, improved hardness, and notable wear resistance compared to the base aluminum alloy. This research contributes to the advancement of aluminum-based composites, offering insights into the potential of Si3N4 and Mg reinforcement in improving the mechanical and tribological performance of Al matrices. The findings facilitate the development of tailored composites for specificengineering applications requiring superior mechanical properties and wear resistance.

Keywords: Aluminum Metal Matrix Composite, Si3N4 Reinforcement, Mg Reinforcement, Powder Metallurgy, Mechanical Properties, Tribological Behavior, Microstructural Analysis, Aerospace Applications.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

271. Forming Limit Diagram of Al 6061 using Single Point Incremental Method

[1]Mr. THIRUNAVUKARASU. R [2]Ms. M Valarmathi [3]Mr. N Mahesh
[1]Assistant Professor, [2,3] III year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

Abstract:

This study focuses on the determination and construction of the Forming Limit Diagram(FLD) for aluminum alloy 6061 utilizing the Single Point Incremental Forming (SPIF) method. FLDs are pivotal in predicting the limits of sheet metal deformation, aiding in the optimization of forming processes and the prevention of material failure during manufacturing. Experimental investigations were conducted using SPIF to deform aluminum alloy 6061 sheets into various geometries under controlled conditions. The deformation tests encompassed a range of strain paths, allowing for the characterization of critical strains at different forming conditions. Through accurate strain measurements and analysis, the critical strains leading to localized necking and fracture initiation were determined. The acquired data enabled the construction of the FLD for aluminum 6061, delineating the strain limits under which the material exhibited uniform deformation before onset of failure. Parametric studies involving tool geometries, feed rates, and forming temperatures were conducted to understand their influence on the FLD and to optimize the forming conditions to enhance formability and prevent failure. The results provided insights into the strain limits and formability of aluminum 6061 under SPIF conditions, yielding a comprehensive Forming Limit Diagram that depicts the material's behavior under various deformation scenarios. This research contributes to the understanding of aluminum 6061's formability using the SPIF method, offering valuable data for process optimization and reliable predictions of material behavior, ultimately enhancing the efficiency and reliability of sheet metal forming processes.

Keywords: Forming Limit Diagram (FLD), Single Point Incremental Forming (SPIF), Aluminum Alloy 6061, Sheet Metal Forming, Material Formability, Strain Analysis, Process Optimization.

272. Software Development for Optimal Selection of Cutting Parameters for Productive CNC Turning Operation

[1]Mr. THIRUNAVUKARASU. R [2]Mr. A. Christian yesudass [3]Mr. L Karthick [1]Assistant Professor, [2,3] III year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

Abstract:
This research focuses on the development of software aimed at facilitating the efficient selection of cutting parameters for Computer Numerical Control (CNC) turningoperations. CNC turning plays a pivotal role in modern manufacturing, and optimizing cutting parameters is crucial for achieving high productivity and quality in machining processes. The software system was designed to streamline the selection process of cutting parameters, encompassing variables such as cutting speed, feed rate, depth of cut, tool material, and workpiece material. The development integrated algorithms that consider material properties, tool geometry, and machining conditions to recommend optimal cutting parameter sets. The software's functionality was validated through simulations and experimental tests on CNC turning machines. Comparative analyses between traditionally chosen cutting parameters and those recommended by the software were conducted to evaluate performance metrics including tool life, surface finish, and machining accuracy. The software's user-friendly interface, coupled with its ability to consider various machining constraints and material-specific recommendations, proved instrumental in facilitating improved machining processes. The results demonstrated enhanced productivity, reduced tool wear, and improved surface finish by utilizing the software-recommended cutting parameters. Additionally, the software's adaptability to diverse machining scenarios and materials showcased its potential for broad applicability across different manufacturing sectors, providing valuable assistance in optimizing CNC turning operations for increased efficiency and cost-effectiveness. This research contributes to advancing CNC turning operations by offering a novel software tool for optimal cutting parameter selection. The software's ability to enhance productivity, tool life, and surface finish underscores its significance in modern machining practices, fostering more efficient and reliable manufacturingprocesses.

Keywords: CNC Turning, Cutting Parameters, Software Development, Machining Optimization, Tool Life, Surface Finish, Manufacturing Efficiency, Material-Specific Recommendations, Machining Software.

273. Formability Analysis of Al 5052 using Single Point Incremental Forming Method

[1]Mr. THIRUNAVUKARASU. R [2]Mr. R Kumaran [3]Mr. N Manikandan
[1]Assistant Professor, [2,3] III year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

Abstract:

This research investigates the formability characteristics and deformation behavior of aluminum alloy 5052 using the Single Point Incremental Forming (SPIF) method. Formability analysis is critical in understanding the limits and capabilities of sheet metal forming processes, influencing the design and manufacturing of various components in industries such as automotive and aerospace. Experimental studies were conducted employing SPIF to deform aluminum alloy 5052 sheets into complex geometries under controlled conditions. The deformation tests encompassed varying forming parameters such as toolpath strategies, tool diameters, and feed rates to analyze their impact on formability and deformation behavior. The analysis involved measuring and characterizing critical parameters such as wall thickness distribution,

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-820 012

thinning, and strains induced during the forming process. Detailed assessments of deformation modes, including wrinkling, necking, and fracture initiation, were conducted to determine the material's formability limits under different forming conditions. Microstructural evaluations using microscopy techniques provided insights into the material's response to deformation, identifying grain orientation changes, and potential defects that influence formability. The results contributed to the construction of formability maps and charts illustrating the material's behavior under varying process conditions, facilitating the identification of optimal parameters for enhanced formability and reduced defects. This research provides valuable insights into the formability characteristics of aluminum alloy 5052 under SPIF conditions, aiding in the optimization of forming parameters for efficient and reliable manufacturing processes in industries relying on sheet metal forming.

Keywords: Formability Analysis, Aluminum Alloy 5052, Single Point Incremental Forming (SPIF), Sheet Metal Forming, Deformation Behavior, Material Characterization, Formability Limits, Manufacturing Optimization, Industrial Applications.

274. Structural and Thermal Analysis of Disk Brake using Tungsten Carbide (WC) in Ansys

[1]Mr.G DINESHWARAN [2]Mr. A.S. Jeyaranjan [3]Mr. K. Karthikayen
[1]Assistant Professor, [2,3] IV year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

Abstract:

This research focuses on the structural integrity and thermal performance analysis of a disk brake employing Tungsten Carbide (WC) material, utilizing finite element analysis in Ansys software. Disk brakes play a critical role in automotive safety, and enhancing their structural durability and thermal resistance is imperative for improving braking performance and reliability. The study involves the design and simulation of a disk brake using WC as a friction material in Ansys Workbench. Structural analyses encompass static, dynamic, and modal analyses to evaluate the stress distribution, deformation behavior, natural frequencies, and mode shapes under various operating conditions and loading scenarios. Furthermore, thermal analyses are conducted to investigate the heat dissipation characteristics, temperature distribution, and thermal gradients within the WC-based disk brake during braking events. The simulations account for material properties, contact behaviors, and transient thermal loads to assessthe brake's thermal response and stability. Parametric studies are conducted to optimize design parameters such as WC composition, brake geometry, and cooling mechanisms to enhance structural integrity and thermal management while considering braking efficiency and wear characteristics. The results obtained from theseanalyses provide insights into the structural strength, deformation patterns, and thermal behavior of the WC-based disk brake, aiding in the identification of potential design improvements for enhanced braking performance and durability. This research contributes to advancing the understanding of WC as a potential friction material in disk brake applications, offering valuable insights into its structural and thermal characteristics through computational simulations in Ansys.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

Keywords: Disk Brake, Tungsten Carbide (WC), Structural Analysis, Thermal Analysis, Finite Element Analysis (FEA), Ansys Workbench, Braking Performance, Material Optimization, Automotive Safety.

275. Analysis of Mechanical Characteristics of Fiberglass & Foam Core

[1]Mr.G DINESHWARAN [2]Mr. V Dinesh Kumar [3]Mr. S Mathiyarasan
[1]Assistant Professor, [2,3] IV year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

Abstract:

This research investigates the mechanical properties and characteristics of a composite structure comprising fiberglass and foam core materials, aiming to analyze its suitability for structural applications in various industries. Composite materials, especially those combining fiberglass with foam cores, offer lightweight and durable solutions in engineering and construction. Experimental studies involve the fabrication of compositespecimens using fiberglass as the reinforcement material and foam cores of varying densities and compositions. Mechanical tests, including tensile, flexural, compression, and impact tests, were conducted to assess the composite's strength, stiffness, toughness, and energy absorption capabilities. The analyses focused on evaluating the load-bearing capacity, deformation behavior, failure mechanisms, and fracture toughness of the fiberglass and foam core composite under different loading conditions. Microstructural examinations using microscopy techniques provided insights into the interface between the fiberglass and foam core, contributing to understanding the bonding and reinforcement mechanisms. Finite Element Analysis (FEA) simulations were employed to complement the experimental findings, aiding in predicting the structural response and optimizing the composite's design for specific applications. The results obtained from both experimental and simulation analyses provided comprehensive data on the mechanical behavior and performance of the fiberglass and foam core composite. These findings are instrumental in understanding the composite's suitability for structural purposes, enabling the identification of optimal material combinations and configurations for targeted engineering applications. This research contributes to advancing the knowledge of composite materials by offering insights into the mechanical characteristics of fiberglass and foam core composites, facilitating their potential utilization in lightweight, high-strength structural designs across various industries.

Keywords: Fiberglass, Foam Core, Composite Materials, Mechanical Characteristics, Structural Analysis, Material Properties, Engineering Applications, Finite Element Analysis (FEA), Lightweight Structures.

276. Experimentation and Analysis of Thermoplastic Designer Blocks
[1]Mr.G DINESHWARAN [2]Mr. S. Revanth [3]Mr. Mohammed Burose
[1]Assistant Professor, [2,3] IV year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road,
Manikandam, Trichy-620 012

Abstract:

This study delves into the experimentation and analysis of thermoplastic designer blocks, focusing on their material properties, structural integrity, and suitability for architectural and construction applications. Thermoplastics, with their versatility and potential for innovative design, offer unique possibilities for creating durable, customizable building components. Experimental investigations involve the fabrication of designer blocks using various thermoplastic materials, employing different molding techniques and additives for enhanced properties. Material characterization tests, including tensile strength, flexural modulus, impact resistance, and thermal properties, were conducted to evaluate the mechanical behavior and durability of these blocks. The analyses further encompass structural testing, load-bearing assessments, and environmental durability tests to ascertain the performance of the designer blocks under realistic conditions. Microstructural examinations utilizing microscopy techniques provided insights into the interfacial bonding and composition of the thermoplastic blocks. In parallel, design parameters, such as geometrical configurations, surface finishes, and color variations, were explored to understand their influence on the aesthetic appeal and functional properties of the blocks. The results obtained from these comprehensive analyses offer insights into the mechanical strength, thermal stability, and design versatility of thermoplastic designer blocks. These findings contribute to their potential as sustainable, customizable building materials for architectural and construction purposes. The study's outcomes provide valuable data for architects, engineers, and designers seeking innovative, environmentally friendly building materials, facilitating the integration of thermoplastic designer blocks in construction practices that emphasize sustainability and design flexibility.

Keywords: Thermoplastic Designer Blocks, Material Properties, Structural Integrity, Architectural Applications, Construction Materials, Sustainable Design, Material Characterization, Environmental Durability.

277. Compressed Air Powered Vehicle

[1]Mr.G DINESHWARAN [2] Mr. R. Parthiban [3]Mr. M Ramachindran

[1]Assistant Professor, [2,3] IV year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

Abstract:

This research explores the design, development, and performance evaluation of a compressed air-powered vehicle (CAV) as an eco-friendly alternative to traditional internal combustion engine vehicles. Compressed air, known for its potential as a clean and renewable energy source, offers possibilities for propulsion in vehicular applications, reducing carbon emissions and reliance on fossil fuels. The study involves the conceptualization and construction of a prototype CAV, focusing on the design of the air compression system, energy storage, and utilization mechanisms. Emphasis is placed on optimizing the vehicle's efficiency, range, and performance while ensuring safety and practicality in real-world driving conditions. Experimental tests and simulations are conducted to assess the CAV's propulsion efficiency, energy storage capacity, and

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

driving range. Performance evaluations involve analyses of speed, acceleration, and operational characteristics under various load conditions. Moreover, comparative studies between the CAV and conventional vehicles are conducted to analyze energy consumption, environmental impact, and cost-effectiveness, highlighting the advantages and challenges of compressed air as a vehicular power source. The findings obtained from the research provide insights into the viability, challenges, and potential improvements of compressed air-powered vehicles. This research contributes to the exploration of alternative propulsion systems, offering valuable data for further advancements in eco-friendly transportation solutions.

Keywords: Compressed Air Powered Vehicle, Alternative Propulsion, Renewable Energy, Eco-Friendly Transportation, Energy Storage, Performance Evaluation, Environmental Impact, Sustainable Mobility.

278. Design and Analysis of Connecting Rod using Composite Materials Al6061 Alloy and SiC

[1]Mr.G DINESHWARAN [2] Mr. C Prasanth [3]Mr. R Chelladurai
[1]Assistant Professor, [2,3] IV year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

Abstract:

This study presents the design, simulation, and analysis of a connecting rod utilizing composite materials comprising Aluminum Alloy 6061 (Al6061) reinforced with Silicon Carbide (SiC) particles. Connecting rods, vital components in internal combustion engines, demand high strength, stiffness, and reliability under cyclic loading conditions. The research involves the development of a connecting rod model, employing Al6061 as the matrix material and incorporating SiC particles as reinforcements. Finite Element Analysis (FEA) simulations are conducted to evaluate the structural performance, stressdistribution, and deformation behavior of the composite connecting rod under varying operating conditions. The analyses encompass static, dynamic, and fatigue analyses to assess the component's strength, stiffness, and durability. Load conditions, including varying engine speeds and operating temperatures, are considered to simulate real-world conditions and predict the connecting rod's performance. Moreover, parametric studies involving different SiC reinforcement percentages, orientations, and distributionpatterns are conducted to optimize the composite's mechanical properties and enhance the connecting rod's performance. The results obtained from these simulations provide insights into the stress concentration areas, deformation patterns, and fatigue life predictions of the Al6061-SiC composite connecting rod. These findings aid in refining the design, optimizing material composition, and enhancing the structural integrity of the connecting rod for reliable engine operation. This research contributes to advancing the utilization of composite materials in engine components, offering insights into the feasibility and performance of Al6061-SiC composite connecting rods, thereby paving the way for enhanced efficiency and durability in internal combustion engines.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

Keywords: Connecting Rod, Composite Materials, Al6061 Alloy, Silicon Carbide (SiC), Finite Element Analysis (FEA), Structural Analysis, Fatigue Analysis, Engine Components, Material Optimization, Mechanical Properties.

279. Mechanical Properties Evaluation and Fabrication of Jute-Cotton-Glass Fiber Reinforced Polyester Composites

[1]Mr. NAGARAJAN. P [2]Mr. D Muthurasu [3]Mr. N Pradeep
[1]Assistant Professor, [2,3] IV year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

Abstract:

This research investigates the fabrication, characterization, and evaluation of hybrid composites composed of jute, cotton, and glass fibers reinforced in a polyester matrix. Hybrid composites offer a promising avenue for developing materials with tailoredproperties, aiming to combine the advantages of natural fibers with the strength of synthetic reinforcements. The fabrication process involves the development of composite specimens through a hand lay-up technique, varying the fiber composition and layering sequences to achieve optimal reinforcement combinations. The fabricated composites undergo comprehensive mechanical testing to evaluate their tensile strength, flexural modulus, impact resistance, and hardness. Mechanical property analyses focus on assessing the synergistic effects of combining jute, cotton, and glass fibers in the polyester matrix. The investigations delve into the composite's load- bearing capacity, stiffness, toughness, and resistance to external forces under different loading conditions. Microscopic examinations using microscopy techniques provide insights into the fiber-matrix interface, identifying bonding characteristics and potential failure mechanisms within the composite structure. The results obtained from mechanical testing and microstructural analyses offer comprehensive data on the mechanical properties and performance of the jute-cotton-glass fiber reinforced polyester composites. These findings contribute to understanding the synergistic effects of hybridization, guiding the optimization of composite formulations for various engineering applications. This research advances the knowledge of hybrid composite materials, offering insights into the development of sustainable and high-performance materials by combining natural and synthetic fibers, thereby paving the way for their potential utilization in industries requiring durable and eco-friendly materials.

Keywords: Hybrid Composites, Jute Fiber, Cotton Fiber, Glass Fiber, Polyester Matrix, Mechanical Properties Evaluation, Fabrication Techniques, Microstructural Analysis, Sustainable Materials, Engineering Applications.

280. Performance Test of Compression Ignition Engine for Alternate Fuel

[1]Mr. NAGARAJAN. P [2] Mr. R Karthick [3]Mr. S Syed Kaja
[1]Assistant Professor, [2,3] IV year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering
Abstract:

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

This study focuses on the performance evaluation of a compression ignition (CI) engine fueled by alternative fuels, aiming to analyze the engine's efficiency, emissions, and operational characteristics. The exploration of alternative fuels for internal combustion engines is crucial for reducing environmental impact and dependency on fossil fuels. Experimental tests involve operating a CI engine with different alternative fuels, including biodiesel, ethanol-diesel blends, or other renewable fuel formulations. The engine's performance parameters, such as brake thermal efficiency, specific fuel consumption, torque, power output, and exhaust emissions, are meticulously measured and analyzed under varying engine loads and speeds. The evaluations encompass comprehensive analyses of combustion characteristics, combustion efficiency, and emissions profiles of the CI engine fueled by alternate fuels. The study also considers the influence of different fuel compositions on engine durability, lubrication properties, and overall reliability. Comparative assessments between the engine's performance using conventional diesel fuel and alternate fuels are conducted to identify the advantages and challenges associated with adopting alternative fuel sources in CI engines. The results obtained from these tests offer valuable insights into the feasibility, efficiency, and emissions characteristics of using alternate fuels in compression ignition engines. The findings contribute to understanding the potential of alternative fuels to reduce greenhouse gas emissions and enhance the sustainability of internal combustion engines. This research aids in advancing the knowledge base regarding alternate fuels in CI engines, providing crucial information for policymakers, engine designers, and fuel developers to explore and promote sustainable and environmentally friendly fuel options.

Keywords: Compression Ignition Engine, Alternate Fuels, Performance Evaluation, Combustion Characteristics, Emissions Analysis, Sustainable Fuels, Engine Efficiency, Environmental Impact.

281. Design and Fabrication of Bagasse Dryer based on Free Falling Velocity of Wet Bagasse

[1]Mr. NAGARAJAN. P [2]Mr. P Sugumaran [3]Mr. T Arun Kumar
[1]Assistant Professor, [2,3]IV year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

Abstract:

This research focuses on the design, development, and fabrication of a bagasse dryer system based on the free falling velocity of wet bagasse, aiming to enhance the efficiency of bagasse drying processes in sugar mills or biomass-based industries. Bagasse, the fibrous residue from sugarcane processing, presents challenges in drying due to its high moisture content. The study involves the design considerations and construction of a dryer system that harnesses the principle of free falling velocity to optimize the drying process. The dryer's design accounts for the characteristics of wet bagasse, including particle size distribution, moisture content, and drying kinetics. Experimental evaluations are conducted to determine the critical falling velocity of wet bagasse particles under controlled conditions. The collected data serve as the basis for designing the dryer's operational parameters, such as air velocity, temperature, and

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

residence time, to achieve efficient drying based on the free falling velocity principle. Moreover, the fabricated dryer system is tested with varying wet bagasse loads to assess its performance in terms of drying efficiency, energy consumption, and moisture removal rates. The results obtained from these experiments provide insights into the feasibility and effectiveness of the proposed bagasse dryer design based on free falling velocity. The findings contribute to improving drying technologies for bagasse, offering a potential solution for optimizing moisture removal processes in industries reliant on biomass materials. This research aims to address the challenges associated   with bagasse drying, presenting a novel approach that could lead to more efficient and cost-effective drying methods in the sugar and biomass industries.

Keywords: Bagasse Dryer, Free Falling Velocity, Biomass Drying, Sugarcane Residue, Drying Efficiency, Moisture Removal, Drying Kinetics, Biomass-Based Industries, Sustainable Drying Methods.

282. Design and Analysis of Al 6061-Bronze Composite

[1]Mr. NAGARAJAN. P [2] Mr. P Solai Raj [3]Mr. M K Kathiravan
[1]Assistant Professor, [2,3] IV year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

Abstract:

This study presents the design, fabrication, and analysis of a composite material composed of Aluminum Alloy 6061 (Al 6061) reinforced with bronze particles, aimingto enhance the mechanical and tribological properties of the base aluminum alloy. Composite materials combining metallic matrices with particulate reinforcements offer potential advantages for various engineering applications. The research involves the development of the Al 6061-bronze composite through powder metallurgy techniques. Different compositions and processing parameters are explored to achieve uniformdistribution and effective bonding between the aluminum matrix and bronze reinforcements. Mechanical characterization tests, including tensile, hardness, and impact tests, are conducted to evaluate the composite's strength, hardness, and toughness. Tribological analyses, such as wear resistance and frictional behavior assessments, are performed to understand the material's behavior under sliding orrubbing conditions. Microstructural examinations using microscopy techniques provide insights into the dispersion, interfacial bonding, and phase distribution within the Al 6061-bronze composite. The results obtained from these analyses offer comprehensive data on the mechanical and tribological properties of the composite material. These findings aid in understanding the synergistic effects of incorporating bronze reinforcements into the Al 6061 matrix, contributing to the optimization of composite formulations for specific engineering applications requiring enhanced mechanical strength and improved wear resistance. This research contributes to advancing theknowledge of Al 6061-bronze composites, offering insights into their potential as high- performance materials for various industrial sectors, including automotive, aerospace, and machinery applications.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

Keywords: Al 6061-Bronze Composite, Powder Metallurgy, Mechanical Properties, Tribological Behavior, Material Characterization, Engineering Applications, Metal Matrix Composites, Particulate Reinforcements.

283. Fabrication and Characteristics of Mechanical Properties for Basalt Fiber Reinforced Al6061 MMC

[1]Mr. NAGARAJAN. P [2] Mr. R Muralidharan [3]Mr. R Dinesh Kumar
[1]Assistant Professor, [2,3] IV year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

Abstract:

This research investigates the fabrication, characterization, and mechanical properties of a Metal Matrix Composite (MMC) comprising Aluminum Alloy 6061 (Al6061) reinforced with basalt fibers. Metal matrix composites, incorporating basalt fibers as reinforcements, offer potential advantages in enhancing mechanical performance and sustainability in engineering applications. The fabrication process involves the incorporation of basalt fibers into the Al6061 matrix through a powder metallurgyroute or other suitable techniques. Different fiber content variations and processing parameters are explored to achieve uniform dispersion and favorable bonding between the basalt fibers and the aluminum matrix. Mechanical property evaluations encompass a range of tests including tensile, flexural, impact, and hardness tests to assess the composite's strength, stiffness, toughness, and resistance to deformation. The analyses focus on understanding the load-bearing capacity, fracture behavior, and deformation mechanisms of the basalt fiber-reinforced Al6061 MMC. Microstructural analyses utilizing microscopy techniques provide insights into the fiber-matrix interface, distribution of fibers, and potential failure mechanisms within the composite structure. The results obtained from these mechanical tests and microstructural analyses offer comprehensive data on the mechanical behavior and performance of the basalt fiber- reinforced Al6061 MMC. These findings aid in optimizing composite formulations, providing valuable insights for engineering applications that require enhanced mechanical properties and sustainability. This research contributes to advancing the understanding and potential utilization of basalt fiber-reinforced metal matrix composites, offering insights into their mechanical properties and suitability for variousindustrial applications.

Keywords: Basalt Fiber, Al6061 Metal Matrix Composite (MMC), Mechanical Properties, Fabrication, Material Characterization, Sustainability, Engineering Applications, Microstructural Analysis.

284. Drilling Force Calculation and Mechanical Characterization of Al2O3 AMMC

[1]Mr. E.LEO PRAKASH [2]Mr. S. Muthukumar [3]Mr. J Crown Meshak
[1]Assistant Professor, [2,3] IV year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

Abstract:

This research focuses on the drilling process and mechanical characterization of Aluminum Matrix Composites (AMCs) reinforced with Alumina (Al2O3) particles, aiming to analyze the drilling forces and mechanical properties of the composite material. Al2O3-reinforced AMCs offer potential advantages in enhancing mechanical strength and wear resistance in various engineering applications. Experimental investigations involve the drilling of Al2O3-reinforced AMCs using suitable machining setups. Drilling force measurements, including axial force, radial force, and torque, are conducted to analyze the machining forces exerted during the drilling process. Factors such as cutting speeds, feed rates, and drill geometries are varied to understand their influence on drilling forces. Furthermore, mechanical property evaluations encompass tensile, hardness, and fracture toughness tests to assess the composite's strength, hardness, and resistance to crack propagation. The analyses focus on understanding the load-bearing capacity, deformation behavior, and fracture mechanics of the Al2O3- reinforced AMCs under different loading conditions. Microstructural analyses utilizing microscopy techniques provide insights into the dispersion of Al2O3 particles withinthe matrix and their influence on the mechanical properties of the composite. The results obtained from drilling force measurements and mechanical tests offer comprehensive data on the drilling behavior and mechanical characteristics of the Al2O3-reinforced AMCs. These findings aid in understanding the machining forces and mechanical responses of the composite material, facilitating optimization for specific engineering applications requiring enhanced mechanical properties. This research contributes to advancing the understanding of Al2O3-reinforced AMCs, offering insights into their drilling behavior and mechanical properties, which are crucial for their potential utilization in various industrial sectors.

Keywords: Drilling Force Calculation, Al2O3-Reinforced Aluminum Matrix Composites (AMCs), Mechanical Characterization, Machining Forces, Composite Material, Fracture Toughness, Microstructural Analysis, Engineering Applications.

285. Characterization and Fabrication of Al6063-based Silicon Composites

[1]Mr. E.LEO PRAKASH [2]Mr. M Mohandass [3]Mr. M Praveen Kumar
[1]Assistant Professor, [2,3] IV year Students, Department of Mechanical Engineering

ABSTRACT
This study investigates the characterization and fabrication of composite materials composed of Aluminum Alloy 6063 (Al6063) reinforced with silicon (Si) particles, aiming to enhance the mechanical and physical properties of the base aluminum alloy. The incorporation of silicon into aluminum matrices offers potential advantages in improving the strength, wear resistance, and thermal properties of the resulting composites. The fabrication process involves the development of Al6063-Si composites utilizing methods such as powder metallurgy, stir casting, or other suitable techniques. Different compositions, Si particle sizes, and processing parameters are explored to

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

achieve homogenous dispersion and effective bonding between the aluminum matrix and silicon reinforcements. Mechanical and physical property evaluations encompass a range of tests, including tensile strength, hardness, thermal conductivity, and wear resistance. The analyses aim to understand the composite's strength, stiffness, thermal behavior, and resistance to wear and deformation under various loading and environmental conditions. Microstructural examinations utilizing microscopy and scanning electron microscopy (SEM) techniques provide insights into the distribution, morphology, and interfacial characteristics of Si particles within the Al6063 matrix. The results obtained from these characterization tests and microstructural analyses offer comprehensive data on the mechanical and physical properties of the Al6063-Si composites. These findings aid in understanding the synergistic effects of incorporating silicon reinforcements into the aluminum matrix, contributing to the optimization of composite formulations for specific engineering applications requiring enhanced mechanical properties and improved thermal performance. This research contributes to advancing the knowledge of Al6063-Si composites, offering insights into their fabrication, characterization, and potential utilization in various industrial sectors, including automotive, aerospace, and structural applications.

Keywords: Al6063-Silicon Composites, Characterization, Fabrication, Mechanical Properties, Physical Properties, Microstructural Analysis, Powder Metallurgy, Engineering Applications.

286. Design, Fabrication, and Analysis of Mechanical Characteristics and DrillingCharacteristics of Bamboo Fiber Reinforced Polymer Composites

[1]Mr. E.LEO PRAKASH [2]Mr. S Vincent Paul Raj [3]Mr. B. Dinesh Kumar
[1]Assistant Professor, [2,3] IV year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

Abstract:

This research investigates the design, fabrication, and comprehensive analysis of composite materials composed of Bamboo Fibers Reinforced Polymer Composites (BFRPCs), focusing on evaluating their mechanical properties and drilling characteristics. Bamboo fiber, being a sustainable and renewable resource, holds promise as a reinforcement material for polymer composites in various engineering applications. The fabrication process involves the development of BFRPCs through a combination of bamboo fibers and polymer matrices such as epoxy or polyester resins. Varied fiber compositions, orientations, and processing parameters are explored to attain optimal reinforcement distribution and interfacial bonding within the composite structure. Mechanical property evaluations encompass a series of tests including tensile strength, flexural modulus, impact resistance, and hardness assessments. These tests aim to comprehensively characterize the composite's strength, stiffness, toughness, and resistance to deformation under different loading conditions. Moreover, drilling characteristic analyses are conducted to understand the composite's behavior during drilling operations. Factors such as drilling forces, surface roughness, and tool wear are assessed to comprehend the drilling characteristics and machinability of the BFRPCs.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-820 012

Microstructural examinations utilizing microscopy and scanning electron microscopy (SEM) techniques provide insights into the distribution, orientation, and interfacial bonding of bamboo fibers within the polymer matrix. The results obtained from mechanical tests and drilling characteristic analyses offer comprehensive data on the mechanical behavior and machinability of the BFRPCs. These findings contribute to understanding the potential of bamboo fiber reinforcements in polymer composites, guiding their optimization for specific engineering applications requiring both mechanical strength and machinability. This research aims to advance the knowledge of BFRPCs, offering insights into their fabrication, mechanical characteristics, and drilling behavior, which are pivotal for their potential utilization in sustainable and high-performance engineering applications.

Keywords: Bamboo Fiber Reinforced Polymer Composites (BFRPCs), Mechanical Characteristics, Drilling Characteristics, Fabrication, Composite Materials, Sustainable Materials, Engineering Applications, Microstructural Analysis.

Keywords: Biomaterials, Artificial Human Bone, Bone Tissue Engineering, Biocompatibility, Material Characterization, Biomimetic Structures, Bone Regeneration, Orthopedic Applications, Tissue Repair, Bioengineering.

287. Topological Optimization of Connecting Rod

[1]Mr. E.LEO PRAKASH [2]Mr. R Ram Prasath [3]Mr. M Sairaj
[1]Assistant Professor, [2,3] IV year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

Performance, Material Efficiency, Mechanical Design, Internal Combustion Engines, LightweightComponents, Computational Algorithms. amboo fibers within the polymer matrix. The results obtained from mechanical tests and drilling characteristic analyses offer comprehensive data on the mechanical behavior and machinability of the BFRPCs. These findings contribute to understanding the potential of bamboo fiber reinforcements in polymer composites, guiding their optimization for specific engineering applications requiring both mechanical strength and machinability. This research aims to advance the knowledge of BFRPCs, offering insights into their fabrication, mechanical characteristics, and drilling behavior, which are pivotal for their potential

Keywords: Bamboo Fiber Reinforced Polymer Composites (BFRPCs), Mechanical Characteristics, Drilling Characteristics, Fabrication, Composite Materials, Sustainable Materials, Engineering Applications, Microstructural Analysis.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

288. Analysis of IC Engine Using Alternate Biofuels

[1]Dr K.BALAMURUGAN [2] Mr. V Sudharsan [3]Mr. S Hariharan
[1]Professor, [2,3] IV year Students, Department of Mechanical Engineering, IndraGanesan College of Engineering

Abstract:
Microstructural examinations utilizing microscopy and scanning electron microscopy (SEM) techniques provide insights into the distribution, orientation, and interfacial bonding of bamboo fibers within the polymer matrix. The results obtained from mechanical tests and drilling characteristic analyses offer comprehensive data on the mechanical behavior and machinability of the BFRPCs. These findings contribute to understanding the potential of bamboo fiber reinforcements in polymer composites, guiding their optimization for specific engineering applications requiring both mechanical strength and machinability. This research aims to advance the knowledge of BFRPCs, offering insights into their fabrication, mechanical characteristics, and drilling behavior, which are pivotal for their potential utilization in sustainable and high-performance engineering applications.

Keywords: Bamboo Fiber Reinforced Polymer Composites (BFRPCs), Mechanical Characteristics, Drilling Characteristics, Fabrication, Composite Materials, Sustainable Materials, Engineering Applications, Microstructural Analysis.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

289. Development of Quinary High Entropy Alloy (HEA) Mechanical

[1]Dr K.BALAMURUGAN [2] Mr. M Ganesh [3]Mr. R Sudhakar
[1]Professor, [2,3] IV year Students, Department of Mechanical Engineering, IndraGanesan College of Engineering

Abstract:

This research focuses on the novel development of a quinary High Entropy Alloy (HEA) through mechanical processing techniques, aiming to create a unique multi-component alloy with enhanced mechanical properties. The quinary alloy system, comprising five elemental constituents, is systematically engineered via mechanical alloying or mechanical attrition techniques. The study investigates various combinations and ratios of constituent elements, exploring their impacts on the alloy's microstructure, phase formation, and mechanical characteristics. Mechanical properties, including hardness, tensile strength, ductility, and wear resistance, are extensively characterized to evaluate the alloy's performance under different loading conditions. Microstructural analyses utilizing scanning electron microscopy (SEM) and X-ray diffraction (XRD) provide insights into the phase composition, grain structure, and distribution of elements within

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

the quinary HEA. These analyses aid in understanding the evolution of microstructures and their correlation with mechanical properties. Furthermore, the research examines the effects of processing parameters such as milling time, temperature, and compaction methods on the resulting quinary HEA's properties and performance. The results obtained from this study showcase the successful development of a quinary HEA through mechanical processing routes, highlighting its promising mechanical properties and microstructural characteristics. This research contributes to advancing the understanding of multi-component HEAs and opens avenues for their potential applications in high-performance engineering materials.

Keywords: High Entropy Alloy (HEA), Quinary Alloy, Mechanical Processing, Mechanical Alloying, Microstructural Analysis, Mechanical Properties, Alloy Development, Multi - Component Alloys, Engineering Materials.

290.   Oil Extraction from Gulmohar Seeds - A Near-Fuel

[1]Dr K.BALAMURUGAN [2] Mr. G. Venkatesh babu [3]Mr. S Selvakumar
[1]Professor, [2,3] IV year Students, Department of Mechanical Engineering, IndraGanesan College of Engineering

Abstract:

This research investigates the extraction and characterization of oil from Gulmohar seeds as a potential near-fuel for various applications. Gulmohar (Delonix regia) seeds, abundantly available as a byproduct from the ornamental tree, contain oil-rich content, presenting an opportunity for exploring their use as an alternative fuel source. The study involves the extraction of oil from Gulmohar seeds using solvent extraction, cold pressing, or other suitable methods. The extracted oil undergoes comprehensive characterization, including analyses of its physicochemical properties, fatty acid composition, calorific value, and viscosity. Furthermore, the research evaluates the oil's potential as a biofuel by examining its combustion properties, emission characteristics, and compatibility with existing fuel systems. Comparative studies between Gulmohar seed oil and conventional fuels are conducted to assess its feasibility as a near-fuel in various applications. The findings from this study provide valuable insights into the potential utilization of Gulmohar seed oil as a near-fuel, offering a sustainable alternative for energy applications. This research contributes to the exploration of bio-based fuels, aligning with the quest for renewable and environmentally friendly energy sources.

Keywords: Gulmohar Seeds, Oil Extraction, Near-Fuel, Biofuel, Physicochemical Properties, Combustion Characteristics, Sustainable Energy, Alternative Fuels, Renewable Resources.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

291.   Dehydration of Agro Products in Tunnel-Type Solar Dryer: EnhancingPreservation and Sustainability

Abstract: The dehydration of agricultural products plays a pivotal role in preserving quality, extending shelf life, and reducing post-harvest losses. This study investigates the application of a tunnel-type solar dryer for the dehydration of various agro products. The dryer harnesses solar energy to facilitate the drying process efficiently and sustainably. The research examines the operational parameters, such as temperature, airflow, and drying duration, optimizing them for different types of agro products to achieve optimal dehydration while retaining nutritional value and minimizing energy consumption. Additionally, the study evaluates the economic feasibility and environmental impact of employing this technology in the agricultural sector.

Keywords: Agro Products, Dehydration, Solar Dryer, Tunnel-Type, Preservation, Sustainability, Post-harvest Losses, Operational Parameters, Nutritional Retention, Economic Feasibility, Environmental Impact.

292.   Friction stir processing of aluminium alloys

[1]Dr K.BALAMURUGAN [2] Mr. S Hariharan [3]Mr. R Sudhakar
[1]Professor, [2,3] IV year Students, Department of Mechanical Engineering, IndraGanesan College of Engineering

Abstract: Friction stir processing (FSP) is a pioneering technique for enhancing aluminum alloy properties. This abstract investigates the impact of FSP on microstructural refinement, mechanical properties, and corrosion resistance in aluminum alloys. By utilizing a non-consumable rotating tool, FSP alters the material's microstructure, resulting in improved mechanical strength, ductility, and fatigue resistance. Key process parameters such as tool rotation speed, traverse speed, and processing temperature significantly influence the final material properties. This review elucidates the profound effects of FSP on grain refinement, phase transformations, and defect mitigation within aluminum alloys. Furthermore, the abstract highlights the diversified applications of FSP across industries such as aerospace, automotive, and marine engineering. The tailored properties achieved through FSP pave the way for superior performance in challenging operational environments. Overall, this abstract emphasizes FSP's potential as a transformative method for optimizing aluminum alloys, accentuating its significance in modern material processing and engineering.

Keywords: Friction stir processing, Aluminum alloys, Microstructure, Mechanical properties, Corrosion resistance, Process parameters, Grain refinement, Aerospace, Automotive, Marine engineering

293.   Revolutionizing Energy Landscapes: The Ascendancy of Alternate FuelSystems

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

[1]Dr. A . ARULSELVAN [2] Mr. R Ram Prasath [3]Mr. V Sudharsan
[1]Associate Professor, [2,3] IV year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

Abstract: Transformative journey of alternate fuel systems, heralding a paradigm shift in global energy dynamics. Exploring biofuels, hydrogen, natural gas, and electric power, it evaluates their emergence, integration, and impact across industries. Technological advancements, policy frameworks, and environmental imperatives driving the adoption of alternate fuel systems are scrutinized, emphasizing their role in mitigating climate impacts and diversifying energy portfolios. Challenges encompassing infrastructure development, economic viability, and scalability are dissected, alongside the pivotal role of interdisciplinary collaborations and regulatory frameworks in accelerating adoption. Ultimately, this abstract underscores the pivotal role of alternate fuel systems in reshaping energy landscapes, steering us towards a sustainable and diversified energy future.

Keywords: Alternate fuel systems, Biofuels, Hydrogen, Natural gas, Electric power, Sustainability, Infrastructure, Climate impact, Policy frameworks, Energy diversification

294.   "Unraveling the Causes: Failure Analysis of Crank Shafts"

[1]Dr. A . ARULSELVAN [2] Mr. S.B. Saffar Hussain [3]Mr. R. Karuppaiya
[1]Associate Professor, [2,3] IV year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

Abstract: Understanding the intricacies of crankshaft failures is crucial in ensuring the reliability and longevity of internal combustion engines. This study delves into the multifaceted aspects of crankshaft failures, investigating the root causes, modes, and contributing factors. Various failure mechanisms, including fatigue,   material defects, and operational stresses, are analyzed through comprehensive experimental and analytical methodologies. The impact of design, manufacturing processes, and operating conditions on crankshaft performance is meticulously examined. Utilizing advanced inspection techniques like microscopy, spectroscopy, and computational modeling, this analysis aims to unravel the intricate dynamics leading to crankshaft failures. Insights derived from this study hold the potential to inform design modifications, material enhancements, and maintenance strategies to prevent such failures and ensure enhanced engine reliability.

Keywords: Crankshaft, Failure analysis, Internal combustion engines, Failure mechanisms, Fatigue, Material defects, Operational stresses, Design, Manufacturing processes, Inspection techniques, Reliability.

295.   "Optimizing Sand Casting: Designing the Ideal Riser System"

[1]Dr. A . ARULSELVAN [2] Mr. M K Kathiravan [3]Mr. N Manikandan
[1]Associate Professor, [2,3] IV year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

Abstract: Riser design plays a pivotal role in sand casting processes, significantly influencing casting quality and yield. This study focuses on optimizing riser design parameters to enhance the efficiency of the sand casting process. Through a systematic investigation employing simulation tools, experimental validation, and computational models, this research aims to determine the ideal riser geometry, size, and placement. Factors such as material properties, mold design, and cooling rates are meticulously considered in the analysis. The study evaluates the impact of riser configurations on shrinkage defects, porosity, and solidification patterns to identify the most effective design for minimizing casting defects and material wastage. Insights derived from this research are anticipated to offer valuable guidelines for engineers and foundries seeking to improve sand casting processes through optimized riser designs.

Keywords: Sand casting, Riser design, Casting defects, Solidification, Simulation, Optimization, Foundry, Casting quality, Shrinkage defects, Material wastage.

296. "Enhancing Automotive Safety: Addressing Blind Spots in Vehicles"

[1]Dr. A . ARULSELVAN [2]Mr. A.S. Jeyaranjan [3]Mr. S Mathiyarasan
[1]Associate Professor, [2,3] IV year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

Abstract: Blind spots pose a significant safety concern in the automotive industry, leading to potential hazards on the road. This study investigates strategies aimed at rectifying blind spots in vehicles to mitigate accidents and enhance overall safety. Through a comprehensive analysis of sensor technologies, camera systems, and advanced driver assistance systems (ADAS), this research evaluates the effectiveness of various solutions in detecting and alerting drivers to blind spot hazards. Factors such as sensor accuracy, cost-effectiveness, and integration into vehicle architectures are examined to determine practical and efficient blind spot rectification methods. Additionally, human factors and user acceptance are considered to ensure seamless integration and usability of the proposed solutions. Insights from this study aim to offer guidance for the implementation of effective blind spot detection and warning systems, contributing to improved safety standards in automobiles.

Keywords: Blind spots, Automotive safety, Sensor technologies, Camera systems, Advanced driver assistance systems (ADAS), Hazard detection, Driver alerts, Vehicle safety, Human factors, Integration.

297. Advancements in Welding Technology: Automatic Welding

[1]Dr. A . ARULSELVAN [2]Mr. R Gunaseelan [3]Mr. S Syed Kaja
[1]Associate Professor, [2,3] IV year Students, Department of Mechanical Engineering,Indra Ganesan College of Engineering

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

Abstract: The evolution of welding technology has witnessed significant strides in the development of automatic welding machines, revolutionizing manufacturing processes across industries. This study explores the capabilities and advancements in automatic

welding machines, focusing on their design, functionality, and applications. Through an in-depth analysis of various welding techniques, robotic systems, and control mechanisms, this research investigates the efficiency, precision, and productivity achieved by automatic welding machines. Factors such as welding parameters, material compatibility, and adaptability to diverse workpieces are examined to assess the versatility and performance of these systems. Moreover, the study evaluates the impact of automation on production throughput, quality consistency, and operator safety. Insights gleaned from this analysis aim to elucidate the potential benefits and challenges associated with implementing automatic welding machines, paving the way for enhanced efficiency and quality in welding processes.

Keywords: Automatic welding machines, Welding technology, Robotic systems, Manufacturing, Welding techniques, Automation, Precision, Productivity, Quality consistency, Operator safety.

298. Effective Warm Start for the Online Actor-Critic Reinforcement Learning based mHealth Intervention

MS. KALAIVANI T[1], Abinaya R[2], Akila K[3], [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract:

Online reinforcement learning (RL) is increasingly popular for the personalized mobile health (mHealth) intervention. It is able to personalize the type and dose of interventions according to user's ongoing statuses and changing needs. However, at the beginning of online learning, there are usually too few samples to support the RL updating, which leads to poor performances. A delay in good performance of the online learning algorithms can be especially detrimental in the mHealth, where users tend to quickly disengage with the mHealth app. To address this problem, we propose a new online RL methodology that focuses on an effective warm start. The main idea is to make full use of the data accumulated and the decision rule achieved in a former study. As a result, we can greatly enrich the data size at the beginning of online learning in our method. Such case accelerates the online learning process for new users to achieve good performances not only at the beginning of online learning but also through the whole online learning process. Besides, we use the decision rules achieved in a previous study to initialize the parameter in our online RL model for new users. It provides a good initialization for the proposed online RL algorithm. Experiment results show that promising improvements have been achieved by our method compared with the state-of-the-art method.

Keywords: Mobile Health (mHealth), Online learning, Reinforcement Learning (RL), Warm Start, Actor-Critic

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

299. **Efficient Reinforcement Learning via Initial Pure Exploration**

MS. KALAIVANI T[1], Annie Shalom S[2], Arthi M[3,] [1]Associate Professor, Student[2,3]
Indra Ganesan College of Engineering

Abstract:

In several realistic situations, an interactive learning agent can practice and refine its strategy before going on to be evaluated. For instance, consider a student preparing for a series of tests. She would typically take a few practice tests to know which areas she needs to improve upon. Based of the scores she obtains in these practice tests, she would formulate a strategy for maximizing her scores in the actual tests. We treat this scenario in the context of an agent exploring a fixed horizon episodic Markov Decision Process (MDP), where the agent can practice on the MDP for some number of episodes (not necessarily known in advance) before starting to incur regret for its actions. During practice, the agent's goal must be to maximize the probability of following an optimal policy. This is akin to the problem of Pure Exploration (PE). We extend the PE problem of Multi Armed Bandits (MAB) to MDPs and propose a Bayesian algorithm called Posterior Sampling for Pure Exploration (PSPE), which is similar to its bandit counterpart. We show that the Bayesian simple regret converges at an optimal exponential rate when using PSPE. When the agent starts being evaluated, its goal would be to minimize the cumulative regret incurred. This is akin to the problem of Reinforcement Learning (RL). The agent uses the Posterior Sampling for Reinforcement Learning algorithm (PSRL) initialized with the posteriors of the practice phase. We hypothesize that this PSPE + PSRL combination is an optimal strategy for minimizing regret in RL problems with an initial practice phase. We show empirical results which prove that having a lower simple regret at the end of the practice phase results in having lower cumulative regret during evaluation.

Keywords: Markov Decision Process, Multi Armed Bandit, Pure Exploration, Reinforcement Learning
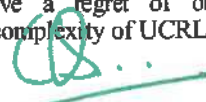
300. **Reinforcement Learning in Rich-Observation MDPs using Spectral Methods**

MS. KALAIVANI T[1], Azhagu Meena M[2], Devi K[3,] [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

In this paper, we address the problem of online learning and decision-making in high-dimensional active dynamic environments where the agent is uncertain about the environment dynamics. The agent learns a policy in order to maximize a notion of payoff while her actions change the environment dynamics. We focus on the problem of learning in rich-observation Markov decision processes (ROMDP), where a low-dimensional MDP with X hidden states is observable through a possibly large number of observations. In ROMDPs, hidden states are mapped to observations through an injective mapping, so that an observation y can be generated by only one hidden state x, e.g., navigation problems, wherethe agent receives a sensory observation (high dimensional image) from the environment and needs to infer the currentlocation (low dimensional hidden state) in order to make a decision. Due to the curse of dimensionality, ignoring the low dimensional latent structures results in an intolerable regret of $\tilde{O}(Y \quad AN)$ for well-known Reinforcement learning (RL) algorithm which is linear in a number of possible observations. Exploiting the latent structure, we devise a spectral learning method his method into UCRL (Upper Confidence bound RL) to obtain a reinforcement learning algorithm able to achieve a regret of order $\tilde{O}(X \quad AN)$ which matches the regret of UCRL and reaches and computation complexity of UCRL

Keywords: MDP, ROMDPs, UCRL, Spectral Methods.

301. Communications that Emerge through Reinforcement Learning Using a (Recurrent) Neural Network

MS. KALAIVANI T[1], Dhanalakshmi S[2], Hari Krishnan S[3,] [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

Communication is not only an action of choosing a signal, but needs to consider the context and the sensor signals. It also needs to decide what information is communicated and how it is represented in or understood from signals. Therefore, communication should be realized comprehensively together with its purpose and other functions. The recent successful results in end-to-end reinforcement learning (RL) show the importance of comprehensive learning and the usefulness of end-to-end RL for it. Although little is known, the author's group has shown that a variety of communications emerge through RL using a (recurrent) neural network (NN). Here, three of our works are introduced again for the coming leap in this field. In the 1st one, negotiation to avoid conflicts among 4 randomly-picked agents was learned. Each agent generates a binary signal from the output of its recurrent NN (RNN), and receives 4 signals from the agents three times. After learning, each agent successfully made an appropriate final decision after negotiation for any combination of 4 agents. Differentiation of individuality among the agents also could be seen. The 2nd one focused on discretization of communication signal. A sender agent perceives the receiver's location and generates a continuous signal twice by its RNN. A receiver agent receives them sequentially, and moves according to its RNN's output to reach the sender's location. When noises were added to the signal, it was binarized through learning and 2-bit communication was established. The 3rd one focused on end-to-end comprehensive communication. A sender receives 1,785-pixel real camera image on which a real robot can be seen, and sends two sounds whose frequencies are computed by its NN. A receiver receives them, and two motion commands for the robot are generated by its NN. After learning, though some preliminary learning was necessary for the sender, the robot could reach the goal successfully from any initial location.

Keywords: reinforcement learning (RL), (recurrent) neural network (RNN), negotiation, signal discretization, grounding communication

302. Functions that Emerge through End-to-End Reinforcement Learning The Direction for Artificial General Intelligence

MS. KALAIVANI T[1], Janani V[2], Jenifer C[3,] [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

Recently, triggered by the impressive results in TV-games or game of Go by Google DeepMind, end-to-end reinforcement learning (RL) is collecting attentions. Although little is known, the author's group has propounded this framework for around 20 years and already has shown a variety of functions that emerge in a neural network (NN) through RL. In this paper, they are introduced again at this timing. "Function Modularization" approach is deeply penetrated subconsciously. The inputs and outputs for a learning systemcan be raw sensor signals and motor commands. "State space" or "action space" generally used in RL show the existenceof functional modules. That has limited reinforcement learning to learning only for the action-planning module. In orderto extend reinforcement learning to learning of the entire function on a huge degree of freedom of a massively parallel learning system and to explain or develop human-like intelligence, the author has believed that end-to-end RL from sensors to motors using a recurrent NN (RNN) becomes an essential, (5)ex- planation of brain activities, (6)communication, (7)knowledge transfer, (8)memory, (9)selective attention, (10)prediction, (11)exploration. The end-to-end RL enables the emergence of very flexible comprehensive functions that consider many things in parallel although it is difficult to give the boundary of each function clearly.

Keywords: function emergence, end-to-end reinforcement learning (RL), recurrent neural network (RNN),higher functions, artificial general intelligence (AGI)

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

303.   Unsupervised Basis Function Adaptation for Reinforcement Learning

MS. KALAIVANI   T[1], Jenifer S[2], Kesavamurthi   M[3,]   [1]Associate Professor,
Student[2,3] Indra Ganesan College of Engineering

Abstract

When using reinforcement learning (RL) algorithms to evaluate a policy it is common, given a large state space, to intro- duce some form of approximation architecture for the value function (VF). The exact form of this architecture can have a significant effect on the accuracy of the VF estimate, however, and determining a suitable approximation architecture can often be a highly complex task. Consequently there is a large amount of interest in the potential for allowing RL algorithms to adaptively generate approximation architectures.

We investigate a method of adapting approximation architectures which uses feedback regarding the frequency with which an agent has visited certain states to guide which areas of the state space distributed — our algorithm, used in conjunction with a suitable RL algorithm, can guarantee a score which is arbitrarily close to zero as S becomes large. It is able to do this despite having only $O(X \log_2 S)$ space complexity and negligible time complexity. The results take advantage of certain properties of the stationary distributions of Markov chains.

Keywords: reinforcement learning, unsupervised learning, basis function adaptation, state aggregation
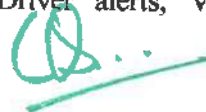
304.   Quantifying the Effects of Vehicular Driving Cycles on Air Quality

MS. KALAIVANI T[1],   Kiruthika S[2],   Maria Francis D[3,] [1]Associate Professor,
Student[2,3] Indra Ganesan College of Engineering

Abstract

Transportation is one of the primary sources of air pollution and GHG emissions. On-road mobile sources account for a third of the total air pollution in the US. Furthermore, the type of analysis and the level of detail utilized (macroscopic or microscopic) to calculate traffic emissions affect the results extensively. Traditional methods for creating emission inventories utilized annual average estimates. Instead, travel demand models were utilized to provide an intermediate level of detail using daily values. Currently, more accuracy has been established using microscopic analyses through the reduction of time and distance scales and utilizing second-bysecond operations. The need to accurately quantify transportation-related emissions from vehicles is essential.

Keywords: Blind spots, Automotive safety, Sensor technologies, Camera systems, Advanced driver assistance systems (ADAS), Hazard detection, Driver alerts, Vehicle safety, Human factors, Integration.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

305. **Influence of Optimal Distribution of Dampers on Structural Vibration Control**

MS. KALAIVANI T[1], Ragavi A[2], Ruthramoorthy M[3], [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

At the end of last century, dampers were designed to absorb seismic energies in multi-story buildings at high seismic zones. Dampers are cost effective, so reducing number of dampers certainly decreases construction costs without having a significant effect on the structural performance, if and only if all the dampers are well distributed. The approach of optimal distribution is to implement dampers in places that the structure benefits from the full damping capacity of dampers to mitigate structural vibration. The objective of this paper is to find the optimal placement and distribution of limited number of dampers to minimize the top story displacement, minimize the top and inter-story drifts, and minimize the top story acceleration. These objectives are achieved by absorbing most of the velocity at the first story.

Keywords: Robotics, Rehabilitation, Stroke Patients, Personalized Training, Adaptive Strategies.

306. **Autonomous Robot Navigation in Dynamic Environments**

MS. KALAIVANI T[1], Sarmila M[2], Sumathi[3], [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract:

This paper presents a novel approach to enable autonomous robots to navigate efficiently in dynamic environments using advanced sensor fusion and machine learning techniques.

Keywords: Autonomous Robots, Navigation, Dynamic Environments, Sensor Fusion, Machine Learning.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

307.   Multiple Competencies in School Education as Necessary Preparations for Occupational Destinies: Static vs. Dynamic Functionalities

MRS. SUGASHINI T[1],   Sarmila M[2], Thivya Priya R[3,]   [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

Computer technologies have revolutionized the objective information process capabilities in form and contents, and concurrently broadened human abilities in the micro-management of subjective cultural psychosemantics. In this article, we address the logical linkages between hard-core computer technologies and human implicit psychosemantics in their concomitant applications to school educational ecologies in Taiwan. A theoretical model and technical issues are first discussed as the scientific foundations for subsequent macro-analyses of empirical data from 3,822 students on educational qualifications measured by our internet website. For demonstration, three hierarchical levels of the school system are formulated to present the tables and profiles, depicting cross-group demographic homogeneities as well as within-group distinctive psychosemantic heterogeneities. Significant implications are then discussed in reference to the applicabilities of digital computer technologies in the contemporary school ecological environments. Ultimately, the success or accountability of future institutional education shall rely on the multidisciplinary approach to address all related issues -- from the institutional policy and practice to the implicit psycho-dynamics and behavioral performance of all individual students.
Keywords: Metal-Ceramics Composites, Cermets, Corundum, Stainless Steel, Sintering, High Vacuum, Temperature, Elastic Properties, Thermo-Physical Properties, Volume Steel Concentration,

308.   An Insight into a Whole School Experience: The Implementation of Teaching Teams to Support Learning and Teaching

MRS.   SUGASHINI   T[1], Sumathi[2],   Thivya   Priya   R[3,]   [1]Associate Professor,Student[2,3] Indra Ganesan College of Engineering

Abstract

This paper presents some of the emerging outcomes from the experiences of a Maltese school that decided to embrace the philosophy of inclusion using a Case Study Methods. This was both a quantitative and qualitative study based on interviews, focus groups, observation and questionnaires. A thematic analysis supported by descriptive statistics was used within an interpretative approach of hermeneutic phenomenology. Most schools in Malta now include 'inclusive' settings. This entails the use of a class Learning Support Assistant who is assigned to one or more classes where there are one or more children statemented as having learning difficulties. It is the usual practice for most Learning Support Assistants (LSAs) to follow the same child/children exclusively. All too frequently, teachers work individually. The outcome of the teachers work has little or no effect on and is not affected by the actions of other educators. Teachers do their own work with their class and LSAs do their own work with the disabled student/s in class. The aims of the research were to generally to explore the whole experience

Keywords: Inclusion, Case Study, Learning Support Assistant (LSA), Hermeneutic Phenomenology, Malta, Qualitative Study, Quantitative Study, Interviews, Focus Groups, Observation, Questionnaires

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

309.   Building Vicarious Bridges through Colour Laboratories for Pupils with Visual Impairment

MRS. SUGASHINI T[1], Azhagu Meena M[2], Thivya Priya R[3,] [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

The inclusion of pupils with visual impairment, within Italian mainstream schools, is an area of interest for the field special education that is involved in identifying the most effective teaching strategies to promote the teaching-learning process. The perceptive difficulties that the pupils with visual impairment encounter in the first step of development can be a significant obstacle to learning and to the development of representative thinking (Piaget, 1972). For this reason, it is fundamental that the teaching style adopted be oriented to promote learning through strategies that exploit the natural vicarious activity of the brain. To this aim, the present paper describes the potential of a hands-on activity with high inclusive value, that is based on a theoretical framework, brings together contributions from different scientific domains and which, from an interdisciplinary perspective, explores the concept of "vicariance" as proposed by the physiologist of perception Alain Berthoz.

Keywords: Inclusion, Visual Impairment, Mainstream Schools, Special Education, Teaching Strategies, Teaching-Learning Process, Perceptive Difficulties, Developmental Obstacles, Representative Thinking, Piaget

310.   Equipping Students with Entrepreneurial Skills for Self Employment in Globalized World

MRS. SUGASHINI T[1], Sarmila M[2], Thivya Priya R[3,] [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

For some time now, Nigerian universities have been producing students who are incapable of enhancing themselves through selfemployment. Thus, they become largely job seekers instead of job creators. The resultant unemployment problem among graduates became a national concern. This awakened the consciousness of universities in Nigeria to emphasize on entrepreneurship education. The aim is to equip students with entrepreneurial skills to enable them create employment for themselves and others elsewhere at graduation. However, the effectiveness of universities in equipping students with entrepreneurial skills such as: self-motivation, enterprising, problemsolving, risk taking, creative thinking, communication, intra-personal, Information and communication, financial know-how, leadership, marketing, administrative and time management, for self-employment especially those at the exit point has not been ascertained.

Keywords: Nigerian Universities, Entrepreneurship Education, Self-Employment, Job Seekers, Job Creators, Unemployment Problem, Graduates, Entrepreneurial Skills, Self-Motivation, Enterprising, Problem-Solving, Risk-Taking, Creative Thinking, Communication, Intra-Personal, Information and Communication

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

311. Challenges of Teacher Professional Development

MRS. SUGASHINI T[1], Sarmila M[2], Thivya Priya R[3], [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

Progress in health, education and living standards are the three core components of human development of nations. According to Human Development Report 2010, of all nations the Sultanate of Oman has shown the fastest progress in the Human Development Index. Since the late 1960s Oman has been very successful in converting its oil resources to health and education. There has been a rapid evolution from a very poor to a very rich country, e.g., with a quadrupling of gross enrolment and literacy rates and a 27-year increase in life expectancy (United Nations 2010).

Keywords: Human Development, Health, Education, Living Standards, Human Development Index

312. Quantifying the Effects of Vehicular Driving Cycles on Air Quality

MRS. SUGASHINI T[1], Arjun v[2], Aishwarya m[3], [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

Transportation is one of the primary sources of air pollution and GHG emissions. On-road mobile sources account for a third of the total air pollution in the US. Furthermore, the type of analysis and the level of detail utilized (macroscopic or microscopic) to calculate traffic emissions affect the results extensively. Traditional methods for creating emission inventories utilized annual average estimates. Instead, travel demand models were utilized to provide an intermediate level of detail using daily values. Currently, more accuracy has been established using microscopic analyses through the reduction of time and distance scales and utilizing second-bysecond operations. The need to accurately quantify transportation-related emissions from vehicles is essential.

Keywords: Transportation, Air Pollution, Greenhouse Gas (GHG) Emissions, On-Road Mobile Sources, Traffic Emissions, Macroscopic Analysis

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

313. **Influence of Optimal Distribution of Dampers on Structural Vibration Control**

MRS. SUGASHINI T[1], Gowtham k[2], Dharshini a[3], [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

At the end of last century, dampers were designed to absorb seismic energies in multi-story buildings at high seismic zones. Dampers are cost effective, so reducing number of dampers certainly decreases construction costs without having a significant effect on the structural performance, if and only if all the dampers are well distributed. The approach of optimal distribution is to implement dampers in places that the structure benefits from the full damping capacity of dampers to mitigate structural vibration. The objective of this paper is to find the optimal placement and distribution of limited number of dampers to minimize the top story displacement, minimize the top and inter-story drifts, and minimize the top story acceleration. These objectives are achieved by absorbing most of the velocity at the first story.

Keywords: Dampers, Seismic Energy, Multi-story Buildings, Seismic Zones, Construction Costs, Structural Performance

314. **Optimization and Evaluation of a Factory Layout Design Problem**

MRS. SUGASHINI T[1], Dinesh kumar k[2], Dharshini a[3], [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

The study of factory layout design is not an easy task because there is no standardized or unified way to solve the layout problems of location planning and the use of modern management methods for production represents the necessary step for a successful industrial project. The choice of optimal production method, represented by selection of necessary machines for production, relies on the best planning and locating of workstations. The success of this step requires the determination of a set of information such as (machine size, operation planning type, layout type, department necessary space etc.). The objectives of this research is to study the variables and requirements that are needed in the factory planning then achieving the optimum work elements, in order to obtain lowest handling cost of materials and the least possible transmission distance or any other standard approved to evaluate the identification of work elements and to allow workers, materials or customers to move within the work space more easily and effectively also find the best technological methods to work in production sites through optimal distribution of various production sites

Keywords: Factory Layout Design, Location Planning, Management Methods, Production Optimization, Industrial Project, Optimal Production Method, Workstation Planning, Information Determination

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

315. Study of the Shallow Wake Characteristics of Emergent Slender Cylinders using DES

MRS. SUGASHINI T[1], Gowtham k[2], Arjun v[3], [1]Associate Professor, Student[2,3]
Indra Ganesan College of Engineering

Abstract

Flow past vegetation in rivers and streams have received considerable attention in recent years due to their ecological and environmental impact. Vegetation patches interact with the flow and generate complex flow patterns that influence sediment, pollutant and nutrient transport in water bodies. Several researchers have attempted to study this complex flow field experimentally by modelling the vegetation as slender emergent cylinders. However, due to the limitations in experimental techniques, the measurements were often limited to the central (vertical) plane and transverse (horizontal) planes. While these measurements are adequate to provide valuable insights on the vertical variability of the wake characteristics due to the influence of bed and the free-surface, it was not sufficient to provide information on the multiphase model with high-resolution interface capturing (HRIC) technique. The present paper presents velocity and turbulent characteristics of the flow field are validated with experimental results and are presented with additional analysis. The coherent structures in the flow are captured using $\lambda 2$ criteria. The influence of the free-surface and the bed on these coherent structures is presented with pertinent analysis. The advantages and shortcomings of using DES

Keywords: Flow Past Vegetation, Rivers, Streams, Ecological Impact, Environmental Impact, Flow Patterns, Sediment Transport, Pollutant Transport, Nutrient Transport, Experimental Techniques

316. A Novel Feature Selection Method for Unsupervised Pattern

MRS. SUGASHINI T[1], Aishwarya m[2], Dharshini a[3], [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

A novel feature selection method for pattern classification is proposed to provide a kind of unsupervised pattern based on unsupervised optimal discriminant vectors to achieve data reduction feature selection method for pattern classification technology. Fuzzy Fisher criterion as the objective function is used to obtain unsupervised optimal discriminant vector. According to each dimension value of the vector, the weights of features are sorted and according to the size of the given threshold, the feature subset is selected. Then the data dimensionality reduction can be realized which can be widely used in image recognition, data mining and so on.

Keywords: Feature Selection, Pattern Classification, Unsupervised Pattern, Unsupervised Optimal Discriminant Vectors

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

317. A Designing Conversational User Interface for Artificial Intelligence Devices

Mr.C.Arul[1], Maria Francis D[2], Aravindh samy p[3,] [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

Recently there were many Artificial Intelligence speakers that got established and introduced such as Amazon Eco and Siri. Despite their popularity, worldwide promotion and high awareness, previous research has found that usage of such voice based Artificial Intelligence assistants did not reach its expectations. Such can be attributed to the fact that people started to feel and perceive conversational User Interface to be a bit overwhelming to interact. The primary emphasis of our research is motivated by the fact that U I/UX design for Artificial Intelligence devices should be studied differently with traditional UI/UX research, and voice-based Chabot interaction design process is quite complex phenomena to be investigated.

Keywords: Artificial Intelligence, Voice-Based AI, Amazon Eco, Siri, Conversational User Interface, UI/UX Design, User Experience, Interaction Design, Chabot, Voice Assistants, User Interaction

318. Case Studies of a Project-Based Learning Course in Transdisciplinary Engineering Program

Mr.C.Arul[1], Hariharan n[2], Hema latha b[3,] [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

We propose a unique educational program – Undergraduate Group Research Program (UGRP) - reflecting the megatrend of the rapidly changing 21st century on the era of the Industry 4.0. The UGRP is an innovative curriculum that enables students to become productive contributors to the future of society. We introduce the process and achievement of the UGRP through several cases. The first case was to understand the operating principle of the main hardware components of the autonomous vehicle (i.e., braking, steering, power and controller) and to develop autonomous driving algorithms by processing various sensors (i.e., Camera, GPS and LiDAR). The main research contents have two parts: First, it is to study various sensor signal processing, vision and image processing technologies. Second, it is to develop control algorithm and verify autonomous vehicle driving performance. The vehicle verification follows two processes: (a) design and development of algorithms such as obstacle, lane, path recognition, (b) perform the optimization based on the hardware and software validation.

Keywords: Undergraduate Group Research Program (UGRP), Educational · Program, Industry 4.0, 21st Century Education, Autonomous Vehicles, Sensor Signal Processing, Vision and Image Processing Technologies,

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

319. CFD Simulation of a Rotary Swing Chamber Machine

Mr.C.Arul[1], Hariharan n[2], Jegathiswari.d[3], [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

Refrigerants for compressor air conditioners like R-1234yf, which is replacing R134a, are either polluting or highly flammable and highly toxic. If this gas burns, it can be very dangerous for human beings and the environment. Therefore, new technologies with environmentally friendly refrigerants are developed and tested. An air conditioner, that can produce refrigeration without any chemical CFC-component is developed at the University of Applied Sciences and Arts Hanover. The engine is based on a rotary swing chamber system, which can be used for expansion and compression under high efficiency and consists of two interlocking rotors with four blades each. Due to the characteristic oscillating motion of the rotors, four moving chambers are created within the housing in which air can be expanded and compressed as a refrigerant. The machine operates in Joule process without phase change with a high volume turnover, fulfilled by 32 chamber fillings each rotation.

Keywords: Refrigerants, Air Conditioners, R-1234yf, R134a, Environmentally Friendly, Flammable, Toxic, CFC-Component.

320. Using the Operations Process chart as a Platform for Integrated Process Design

Mr.C.Arul[1], Kanagaraj k s[2], Dharshini a[3], [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

Since its introduction, the operations process chart (OPC) was heavily used for process design. As noted about half a century ago, "The OPC is one of the most useful techniques in manufacturing planning. Actually, it is a "diagram" of the manufacturing process." Yet, in recent decades it disappeared from the operations management literature. In this presentation, few elements are added to the OPC: the assembly ratios, the defect rates of each operation, and inspection error rates. The assembly ratios are the number of units of each component type in an assembly and are usually associated with the bill-of-materials of the material requirements planning. Major determinants of the processing volumes are the amounts of defective items that are produced, but very few works consider this issue in the literature and only in serial processes. The proposed integration enables to account for the defective items in estimating capacity requirements and actual loads in production systems of assembly product (like many products are), which are not serial. This opens the way for improved design of production systems.

Keywords: Operations Process Chart (OPC), Process Design, Manufacturing Planning, Assembly Ratios, Defect Rates, Inspection Error Rates, Bill-of-Materials, Material Requirements Planning

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

321. Big Data Opportunities: Prescriptive Analytics to Enhance Learning Programming in Higher Education

Mr.C.Arul[1], Joshi dayana k[2], Jegathiswari.d[3], [1]Associate Professor, Student[2,3]
Indra Ganesan College of Engineering

Abstract

Big data is an evolving research area in several fields such as healthcare, finance, and business applications. The main characteristics of Big data are: its volume which is growing fast with the time, the variety of types (both structured and unstructured) inherited from its different data sources, the velocity of incoming data, and the high value derived from that data. This topic is still immature in the higher education sector and this leaves several opportunities to explore in areas like student performance, curriculum tuning, and institutional effectiveness. However, the collection of data from different heterogeneous sources and the need for near real time actions are the main challenges facing the application of analytics in the higher educational sector. On the other hand, Educational Data Mining (EDM) is a developing discipline which explores methods and tools to analyse data within the educational sector whether related to students and/or to the learning environment. Data Analytics process incorporates the following basic steps: data collection, analysis, modelling and deployment

Keywords: Big Data, Healthcare, Finance, Business Applications, Volume, Variety, Velocity, Value, Higher Education, Student Performance, Curriculum Tuning, Institutional Effectiveness

322. Strength Evolution of Concretes Made with Supersulfated Binders based on Volcanic Materials Exposed to two Media

Mr.C.Arul[1], Neethimozhi a[2], Kanagaraj k s[3], [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

The sustainability of concrete can be improved by using low emission binders, such as the supersulfated cements (SSC), which are commonly formulated using blastfurnace slag, and activators of calcium sulfate and an alkaline activator commonly clinker of Pórtland Cement. This investigation presents results on concretes fabricated using an SSC with a binder based on volcanic materials which are an abundant and cheap in many parts of the world; the binders were composed by up to 75% pumice (PM) and the activators were combinations of hemihydrate (HH) and anhydrite (An), as well as lime (CaO) and Portland cement (CP). The cementitious content was about 700kg/m3 of concrete, and the highest CP load was only up to 140 kg/m3. The concretes were cured for 22h at 60°C and then at 25°C. The specimens were exposed to two conditions, dry open conditions in the laboratory and also submerged under water in a solution with 3.5% CaSO4 at 25°C for up to 180 days. The Taguchi method was employed to define the composition of the binder

Keywords: Sustainability, Concrete, Low Emission Binders, Supersulfated Cements (SSC), Blastfurnace Slag, Calcium Sulfate

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

323. Jordanian Pre-service EFL Teachers Perspectives about Phonological Awareness: Contributions to Reading Development

Mr.C.Arul[1], Neethimozhi a[2], Nithya p[3,] [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

Few decades due to its deep impact on reading development. Burgeoning discussions since then have addressed the substantial relationship between the awareness of the sounds of the language and the ability to read. Research on dyslexic children uncovered stimulating evidence linking reading deficit to lack in phonological awareness (Olofsson, 2000). Therefore, it is urgent to make sure that our children in schools receive the kind of teaching that helps them to become good readers. Candace (2001) conquers on the important role of phonemic awareness instruction that early readers receive in the early stages of their literacy development and its power on bringing up good readers. A serious concern emerges from this fact; children's literacy skills are subject to teachers' beliefs and practices

Keywords: Phonological Awareness, Reading Development, Dyslexia, Phonemic Awareness Instruction, Literacy Development

324. Polymer Modified Pervious Concrete

Mr.C.Arul[1], Ramya r[2], Priyanga.g[3,] [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

Pervious/permeable/no-fines concrete is a material with the same basic components as the standard concrete but designed to have high porosity. A pervious concrete mixture is composed of cement, water, and coarse aggregate, with or without a small amount of fine aggregate. Pervious concrete as a material was used for the first time in 1852 and patented in 1980. Although it is not a new technology, pervious concrete is receiving renewed interest today. The typical properties of pervious concrete are: good drainage properties, high noise absorption properties, ability to reduce urban heat islands, poor mechanical properties, low abrasion and freeze-thaw resistance. This paper deals with improving mechanical properties of pervious concrete by using polymer. Several mixtures of pervious concrete without and with polymer incorporated will be prepared and their properties in hardened state compared to each other

Keywords: Pervious Concrete, Permeable Concrete, No-Fines Concrete, Porosity, Cement, Water, Coarse Aggregate, Fine Aggregate

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

325.   EnergyPlus vs. Monthly ISO 13790 for Israeli Climatic Zones

Mr.C.Arul[1], Sathasivam p[2], Sharvesh charan.s.a[3], [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

The energy efficiency, as predicted using on one hand the comprehensive building energy calculation program EnergyPlus and on the other hand the simplified monthly method of Standard ISO (EN) 13790, is compared for the four climatic zones of Israel. In two of those zones (Coastal and Negev Zones) cooling is dominant but heating is important; in another one, the Mountain Region, heating is dominant but cooling important and in the fourth one (Syrian-African Rift) there is essentially only cooling. The energy efficiency predicted by the two models is quantified as the percent reduction of annual heating plus cooling energy per unit area with respect to a pre-defined reference building. It is shown to be in fair agreement - with the simplified model being consistent with slightly better energy efficiency. The comparison is thought to be of relevance not only for the climates of Israel, but also for other climates in which cooling energy is as important as heating energy or more. The limitations of the comparison are discussed – especially the 24 hour heating/cooling assumption and the neglect of cooling latent heat in some regions.

Keywords: Energy Efficiency, Building Energy Calculation, EnergyPlus, Standard ISO 13790, Climatic Zones, Israel,

326.   Technology Influencers and the Culture of Mobility: Experimenting Self-Ruling Floating Cities

Mr.C.Arul[1], Sathasivam p[2], Selvi margrate a[3], [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

For some libertarians, „aquapreneurs" or „seasteaders", creating floating cities in international waters could be a way to experiment with new forms of government and create „start-up" countries. This spirit and the ethos of the modern-tech industry inspired the Californian founders of the Seasteading Institute. Their endeavors to promote their ideas led to an agreement signed in early 2017 with the French Polynesian government. We propose to retrace the genesis of this project, starting with its influences, inspirations and high level contacts, as well as the various uses and purposes that were initially reviewed. Then we will look at the communicational aspects that have contributed to give visibility and assist in its promotion. Architectural competitions have disseminated strong and recognizable visuals. How do technology influencers mix different types of campaigns to raise money and attract investment

Keywords: Aquapreneurs, Seasteaders, Floating Cities, International Waters, Government Experimentation, Start-Up Countries, Seasteading Institute, French Polynesia Agreement, Project Genesis, Influences, Inspirations

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

327.   A Study on the Disposal and Efficient Re-use of Water Treatment Sludge Generated in a Household: A Review

Mr.C.Arul[1], Shalini p[2], Shanmuganathan p[3] [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

Water is an integral part of this universe and plays a critical role in the functioning of the Earth"s ecosystems. With an ever growing population"s insatiable demand for clean water and increasing pollution of existing water resources, it has become a major challenge for authority to provide people with potable water. Water treatment sludge (WTS) is the waste that is generated when raw water is passed through different treatment processes. It contains the pollutants present in the water along with the chemicals used for treatment.

Keywords: Water, Ecosystems, Population Growth, Clean Water, Water Pollution, Water Resources, Potable Water

328.   An Empirical Study of Effective Promotion System based on Big Data Analysis and Machine Learning

Mr.C.Arul[1], Shalini p [2], Sugasini.g[3] [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

Recently, various strategies have been established and implemented to increase sales through public relations in corporations and public institutions. Recommendation systems are proposed and proposed based on user's data, such as internet recommendation and friend recommendation on Facebook. There are not many systems that extend the concept of recommendation and recommend users' taste. Based on the information provided by the user, it is possible to emphasize the need for services provided by identifying areas not provided and providing recommendations for them. The purpose of this study is to study about the efficient prediction system that enhances the effectiveness of marketing promotion based on big data analysis and machine learning empirically.

Keywords: Sales Strategies, Public Relations, Recommendation Systems, Internet Recommendation, Facebook Recommendations

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

329.   The Role of Cloud, Green IT, and Data Science to Reduce Healthcare Costs and Combat Climate Change

Mr.C.Arul[1], Vigna sri s [2], Vaishnavi g[3,]   [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

Climate change is a big issue. It has been discussed and continues to be discussed in major forums across the world. This paper gives practical information on how green healthcare (whose major sub-segment is "hospitals") can contribute to solving the Climate Crisis by adopting Green IT practices. The recent UN Climate Agreement on reducing carbon emissions reached in Paris during December, 2015, helps continue to raise awareness to the need to reduce electricity use through efficiency. Green Healthcare, Green Computing, and Green IT (Information Technology) are all excellent ways to reduce electricity use and save money technologies with the help of modern digital equipment, etc. There are many online healthcare portals. The complexity of the healthcare industry helps account for the large environmental footprint. Healthcare accounts for 8% of the U.S. carbon footprint

Keywords: Climate Change, Green Healthcare, Hospitals, Green IT Practices, UN Climate Agreement, Carbon Emissions, Paris Agreement

330.   The Evaluation of the Manufacturing and Functions of Complex Knitted Fabrics

Mr.C.Arul[1], Vinothini s [2], Vijaya dharani k[3,] [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

With the development of technology, the electronic communication equipment brings a lot of convenience for human life nowadays. However, the electromagnetic waves have been proven that they may be harmful to human health by many studies; therefore, the electromagnetic shielding and electrostatic protection are necessary. The purpose of this study is in order to reduce the harm of electromagnetic waves on humans. First, stainless steel wires are used as the core and are wrapped in bamboo charcoal yarns. During the process, the wrapped materials are along the S- and Z-direction with different wrapping counts via an electrical covering machine. The purpose is to form stainless steel (SS)/bamboo charcoal (BC) wrapped yarns. The wrapped yarns are then examined for tensile strength and elongation for the optimal parameters. And next, SS/BC wrapped yarns (the wrap material) and serve as the face yarns, while antibacterial yarns, cross-section wicking yarns, and spandex fibers are used as the ground yarns. A computer jacquard hose machine is used to form these materials into elastic, functional composite weft knits

Keywords: Electromagnetic Waves, Electromagnetic Shielding, Electrostatic Protection, Technology Development, Electronic Communication Equipment,   Human   Health, Stainless Steel Wires, Bamboo Charcoal Yarns, S-Directio

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

331. **Electrochemical Healing Techniques for Concrete Reinforcement Restoration**

Mr.C.Arul[1], Hariharan m [2], Sivasangari c[3,] [1]Associate Professor, Student[2,3] Indra
Ganesan College of Engineering

Abstract

Electrochemical chloride extraction from a reinforced concrete structure may be accompanied with an electrochemical injection of healing agents if such agents are positively charged and are able migrate towards the activated reinforcement. Positive charge carrying nanoparticles or cationic corrosion inhibitors might be the proper choice. Organic substances with a positive charge and their salts are mostly such inhibitors. Critical concentration of chlorides was investigated for fresh and carbonated concrete pore solution. Corrosion inhibition efficiency was evaluated by means of polarization resistance as a measure of corrosion rate. Sodium nitrite methylamine, tetrabutylammonium bromide, tetrabutylphosphonium bromide or triethylenetetraammine. Concentration profile of the inhibitors and chlorides was investigated in the testing concrete blocks. The best results have been obtained for guanidine carbonate and triethylenetetraammine up to now. Both showed migration ability and reasonable corrosion inhibition efficiency.

Keywords: Electrochemical Chloride Extraction, Reinforced Concrete Structure, Healing Agents, Positive Charge, Nanoparticles, Cationic Corrosion Inhibitors

332. How Big Data can help in Real-Time Anomalies Detection

Mr.S.Hussain[1], Hema latha b [2], Moorthi c[3,] [1]Associate Professor, Student[2,3] Indra
Ganesan College of Engineering

Abstract

The advent of new technologies such as IoT, Augmented Reality, Robotics, Artificial Intelligence has led a major impact on an industrial scale paving the way towards the so-called Industry 4.0. In this scenario of significant change for industry, Big Data play a key role thanks to the information generated through their analysis. The introduction of technologies such as IoT in machine monitoring has surely generated a huge amount of machine operation data, useful to understand not only how a machine is working, but also to predict is only a first step in the field of next-generation maintenance, prescriptive analysis can actually facilitate real-time monitoring and allow the creation of case study such as what will be described in this paper. Imagine getting access to the machines by creating a maintenance system that can highlight and detect a problem, through Machine Learning techniques, and to receive in an automatic and immediate way, the solution for that issue on smart glasses of the workman, through the use of mixedreality.

Keywords: Industry 4.0, Internet of Things (IoT), Augmented Reality, Robotics, Artificial Intelligence, Big Data, Machine Monitoring

PRINCIPAL
Indra Ganesan College of Engineering

333.   Synchro Software: Can be used to Enhance and Optimize the Performance of Urban Signalized Intersections with Queue Blockage?

Mr.S.Hussain[1], Muthaiya p [2], Neethimozhi a[3,]   [1]Associate Professor, Student[2,3]
Indra Ganesan College of Engineering

Abstract

Recently, with population growth and increased travel demand, the number of automobiles has increased and, as a result, traffic problems and crowdedness of passageways (especially in urban intersections) have escalated. Precise engineering designs matching country-specific countries gain more importance for traffic reduction over time. In the past years, development of simulation and optimization software as well as software for timing traffic lights in intersections has increased. An example of such software is Synchro. These applications are designed in accordance with the traffic conditions in Iran to enhance traffic. This study was an attempt to assess the most common situations occurring in urban signalized intersections using this software. It was also tried to assess the precision, influence, and accuracy of the performance of this software. Since the measurements were carried out using information on the Amirkabir intersection in Zanjan City, it was tried to gain a better understanding of the traffic behavior in intersections. Moreover, the most important factors leading to an increase in the similarity between the assessment model and the real-world situation of Zanjan City were identified and assessed.

Keywords: Traffic Problems, Passageway Crowdedness, Urban Intersections, Engineering Designs, Simulation, Optimization Software,

334.   Architectural Challenges in Designing Big Data Solutions in Support of Laser-Plasma Interaction Experimental Investigations

Mr.S.Hussain[1], Vaishnavi g [2], Nithya p[3,]   [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

A stirring number of cutting-edge advancements mark the nearly six decades of laser technology. Attainable laser powers and intensities have increased dramatically as compared to the „90s while the pulse durations have shrunk towards the femtoseconds range. The interaction of such lasers with different types of targets and plasmas gives rise to a multitude of applications, from medicine to industrial processing and energy production. However, the numerous benefits are not free from caveats as there are still technological issues to be and this has long been associated with running state of the art simulation software, specifically either hydrodynamic (fluid) or kinetic codes, in accordance with the laser-plasma or laser-target interaction regime. Often, choosing between the two approaches implies an inevitable dismissal of certain phenomena while trying to maintain reasonable accuracy limits. It is in this context that predictive modelling and recommender systems impose themselves as a comfortable and reliable alternative for designing optimized experiments or for estimating potential results.

Keywords: Laser Technology, Laser Powers, Intensities, Pulse Durations, Femtoseconds, Interaction, Targets, Plasmas, Applications, Medicine

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

335.   Best Practices for the Design Process for the ConstructionManager-as-General Contractor Delivery System

Mr.S.Hussain[1], Shalini K [2], Vigna sri s[3,] [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

In the early 1990s, the American driving public insisted that planned highway and bridge projects be completed quicker than was possible using the Design-Bid-Build (DBB) construction project delivery system, which had dominated the industry since the 1930s. This led state Departments of Transportation (DOTs) to explore fast-track methods of construction. In the late 1980s some DOTs had begun experimenting with using the Design-Build (D-B) delivery system. Forty-two state DOTs and numerous county and municipal or eliminate those concerns while providing many of the advantages of D-B. A solution was offered by Construction-Manager-as-General-Contractor (CM/GC), a system that shows great potential, but designers have trouble with the speed of the construction process. This paper tells the story of the development of a guidebook by the research team that the FHWA has published and disseminated to all state DOTs to help them establish their design processes

Keywords: Design-Bid-Build (DBB), Design-Build (D-B), Construction-Manager-as-General-Contractor (CM/GC), Highway Projects

336.   A Risk-based Logistic Regression Decision Support Model for the Selection from The World Bank Lending Instruments

Mr.S.Hussain[1], Harish.V [2], Aswini. M[3,] [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

The International Bank for Reconstruction and Development (IBRD), a World Bank subsidiary, is one of the leading International Finance Institutions (IFIs) that fund infrastructure projects in developing countries. The Bank provides an array of funding services to its member states through its various subsidiaries. These services such as grants and soft loans are often least burdensome on general budgets of governments. However, there are significant differences in the nature of these funding instruments and their ability to address certain project risks. This paper utilizes the feedback of 21 international experts with adequate experience in World Bank funded infrastructure projects in order derive a logistic regression model that yields the recommended funding instrument. This paper focuses on two instruments provided by the Bank which are the Investment Project Finance (IPF) and the Program-for-Results (P-for-R).

Keywords: Internship, Teacher Training, Undergraduate Courses, Licentiature, Didactics, Pedagogical Practices, Pedagogy, Education, Teaching and Learning

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

337.   Review of Trends in System Resilience for Sustainable Future Transport in Megacities

Mr.S.Hussain[1], VIGNESHWARI . N [2], VINOTHINI.S[3], [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

The wellbeing of society is dependent on transport for movement of people and goods. As a vital critical infrastructure, transportation has become catalyst of socio-economic potentialities, productivity and security. The world population reaches a 7.5 billion mark in 2017, with projections to reach its numerical milestones of 9.7 billion in year 2050. Rising global population midst the existential threats of security, gust of weather as well as environmental pollution are as important to the future of transport in the fast evolving megacities. Hazards, problems. Resilience is closely related to resistance to taming vulnerability as the concept dominating core discourses and debates on sustainability of future transport assets. This work gauges the knowledge base of researchers through systematic review of published literature sources on the subject of transport resilience. The study involves content review, analysis and rating for a random sample of literature materials to access the awareness and seriousness accorded the problem.

Keywords: Transport Resilience, Critical Infrastructure, Socio-economic Potentialities, Productivity, Security, Global Population, Megacities

338.   A New Demerit Control Chart for Monitoring the Quality of Multivariate Poisson Process

Mr.S.Hussain[1], VASUKI.S[2], VIGNESH.M[3], [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

This study aims to develop a new demerit control chart suitable for monitoring the quality of a manufacturing process with multiple characteristics subject to multivariate weighted Poisson distribution. Considering the correlation among different quality characteristics and their degrees of influence on the final product, we propose a new statistic for demerit scheme which gives different weights to different quality characteristics. Then, a new demerit control chart for multivariate weighted Poisson distribution (WMP chart) is developed accordingly. Moreover, a simulation study is conducted to evaluate the detecting performances of our proposed WMP chart and multivariate Poisson control chart (MP chart) using the out-of-control average run length ( ). Finally, a numerical example with a two the simulation results and numerical example show that the detecting ability of our proposed WMP chart outperforms that of the MP chart when a process shift occurs. Hopefully, the results of this research can provide a better alternative for detecting the mean shifts occurred in a multivariate Poisson process.

Keywords: Demerit Control Chart, Manufacturing Process, Multiple Characteristics, Multivariate Weighted Poisson Distribution, Quality Monitoring, Correlation, Influence, Quality Characteristics, Demerit Scheme

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

339.   Clustering Techniques for Comparative Analysis of Load Factor Profiles

Mr.S.Hussain[1], SUJITHA.R[2], SURIYA PRIYA.M[3,] [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

The paper addresses the improving of the comparative analysis techniques of the load profiles in the electrical substations. Among the advantages of using the load profiles, it is worth noting that the simultaneity coefficients should not be estimated or calculated because the load profiles include this information and the calculation of the power losses is possible for any period of time. The analysis of load profiles can lead to credible predictions.

Keywords: Comparative Analysis, Load Profiles, Electrical Substations, Simultaneity Coefficients, Power Losses, Prediction

340.   Designing Solution for Healthcare: A Case Study Combining Big Data and Blockchain Technologies

Mr.S.Hussain[1], SRIVIDHYA.K[2], STELLA MARY.F[3,] [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

Nowadays the advent of the digital evolution has brought with it a growing availability of data. However, interesting data is not just those produced through social networks or the widespread use of mobile devices such as smartphones and tablets, but there is great importance and information in patient health data. Today, the expansion of this digital evolution allows to use the potential of digital communication technologies also in the field of Health, that can be defined as Health 4.0. The healthcare environment carries with it a wealth of data, structured and not, precious not only for optimal management of patient prevention and care but also for the management of medical processes, if appropriately protected and anonymous. A Big Data approach is certainly crucial in order to manage, process and extract useful information from this huge amount of data. It is also essential in helping.

Keywords: Digital Evolution, Data Availability, Social Networks, Mobile Devices, Patient Health Data, Health 4.0, Digital Communication

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

341.   Turkish Red Crescent's Blood Collection and Blood Products Distribution Logistics Network Design

Mr.S.Hussain[1], SNEGA.K[2], SOWMIYA.D[3,] [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

In the blood collection and blood products distribution logistics network of Turkish Red Crescent, there are many nodes such as Regional Blood Centers (RBC), Blood Collection Units (BCU), Blood Donation Centers (BDC), Transfusion Centers (TC), Test Laboratories (TL), etc. On some arcs between nodes, there may be multiple transportation options with different time requirements and costs. There may be opening/closing decisions of those nodes, assignment of BCUs to BDCs and BDCs to RBCs, transportation method selection on arcs, production amount decisions of blood products, etc. All those decisions affect the overall efficiency of the system. In this problem, we assume two basic objective functions to consider: time and cost. Design to minimize transportation time is effective especially for utilizing short shelf-life products: Thrombocyte Suspension (TS) and Erythrocyte suspension (ES). In order to increase their shelf life, transportation time should be minimized. The solution method requires multi-objective decision making approach

Keywords: Blood collection, logistics network, Turkish Red Crescent, Regional Blood Centers, Blood Collection Units, Blood Donation Center

342.   Mass Preservation of Original Written Cultural Artefacts from the 20th Century though Functionalized Nanofibres

Mr.S.Hussain[1], SELVAKUMAR.R.K [2], SIVASANKARI.P [3,] [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

Written cultural artefacts, especially documents of the 20th century are highly relevant for the social and political development as well as for the examination of history. Many of them are now at risk of destruction and becoming more fragile over time due to degradation processes. High costs for the preservation of written cultural artefacts–beside the enormous need – is particularly caused by manually shaped treatment processes(e.g. restoration with Japanese paper, single sheet deacidification) as well as costintensive materials for the restoration and conservation according to the current state-of-the-art. The University of Applied nearly independently of the degree of their damage. The focus ssues and similar materials and the reduction of acid decay, tears and fillers.

Keywords: Written cultural artefacts, 20th-century documents, social and political development, historical examination, degradation processes, preservation costs, treatment processes, restoration

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

343.   Biomechanical Comparison of Parallel, Posterior, and Y Configuration for Treating Comminuted Distal Humerus Fractures

Mr.S.Hussain[1], SELVAKUMAR.R.K [2], SIVASANKARI.P [3], [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

The purpose of this study is to compare posterior versus parallel distal humerus fracture fixation system in treating comminuted distal humerus fractures (DHFs).

Keywords: Posterior fixation, parallel fixation, distal humerus fractures, comminuted fractures, fracture fixation system, treatment comparison.

344.   Influence of Carbonation on the Performance of Reactive MgO Cement-based Concrete Mixes

Mrs.S.Poongkodi[1], Nivedha s[2], Kanagaraj k s [3], [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

Reactive MgO cement-based formulations gain strength via carbonation, which increases sample density and stiffness and enables the evolution of the microstructure as the morphology and binding strength of the carbonate crystals contribute to the network structure. This process initiates with the hydration of MgO to form brucite ($Mg(OH)_2$, magnesium hydroxide), which can then react with CO_2 and additional water to form a range of strength providing hydrated magnesium carbonates (HMCs) within cement-based formulations. The presented work focuses on the use of reactive MgO in a range of concrete mixes, where it carbonates by absorbing CO_2 and gains strength accordingly. The main goal involves maximizing the amount of CO_2 absorbed within construction products, thereby reducing the overall environmental impact of the designed formulations and increasing strength. Microstructural analyses including scanning electron microscopy (SEM), Xray diffraction (XRD) and thermogravimetry/differential thermal analysis .

Keywords: Reactive MgO cement, carbonation, sample density, stiffness, microstructure evolution, brucite, hydrated magnesium carbonates (HMCs), concrete mixes, CO_2

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

345. **Quantifying Interactions in Manufacturing using Regression Tree Models – A Useful Inductive Step for Planning a Designed Experiment**

Mrs.S.Poongkodi[1], Vigna sri s[2], Sathasivam p [3,] [1]Associate Professor, Student[2,3]
Indra Ganesan College of Engineering

Abstract

Process variables that interact during manufacturing are key sources of variation that influence final product quality. Inductive statistical modeling methods such as regression trees can help manufacturers identify key correlations and quantify the level and strength of interactions. One of the challenges of using deductive statistical methods such as designed experimentation or DOE is selecting the key process variables for the experiment. If many variables are ased with one another is dependent on the experience of the industrial researcher. The assumptions associated with aliasing often reduce inference, especially for two-level interactions. It is proposed that regression tree models may be helpful in identifying important alias structures within the variables that may help the industrial scientist reduce the number of experimental runs and maximize scientific inference. Regression tree (RT) models ate very useful when the data space is non-h

Keywords: Manufacturing, process variables, variation, final product quality, inductive statistical modeling, regression trees, correlations, interactions, deductive statistical methods, designed experimentation, DOE

346. **SELF REGULATING TRAFFIC LIGHT CONTROL USING RFID AND MACHINE LEARNING ALGORITHM**

Mrs.S.Poongkodi[1], Sugasini.g[2], Inbaraj a[3,] [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

Traffic control light frameworks are generally used to control and screen the stream of cars through the intersection of numerous streets. As the quantity of street clients always increments and assets gave are constrained, savvy activity flag controller is an exceptionally real prerequisite. One disadvantage of customary methodologies for movement administration is that they don't consider the distinctive valuations of holding up time lessening of the drivers. These valuations can contrast for various drivers. To beat this issue, we propose another component for versatile activity control utilizing machine learning procedure. In the proposed framework we are utilizing picture sensor in the LED publication which catches the pictures of will be balanced naturally as per the activity thickness in the separate paths in this way lessening the movement blockage. Notwithstanding this different issues identified with the proposed activity control framework will be an exceptional technique for self-learning and security improving.

Keywords: Traffic Light, LED Light, RFID, Machine Learning Algorithm

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

347. AN EFFICIENT AVIATION MODEL FOR AIR TRANSPORT REGULATION USING NOSQL

Mrs.S.Poongkodi[1], Sugasini.g[2], Maria Francis D[3] [1]Associate Professor, Student[2,3]
Indra Ganesan College of Engineering

Abstract

The rapid growth of data in all fields makes NoSQL database spectacular in the recent times. NoSQL gives the efficient storing of the huge volume of information in a data warehouse. The NoSQL server provides horizontal scalability and retrieval of data in the very prominent way. These features make the NoSQL database meaningfully increase in the real-time applications relating to the web services. Handling of extensive data in different areas makes sense of NoSQL. This work particularly uses the aviation data frame describing the operations being taking part in the aircraft systems such as productions and developments. The stable (GB) and Terabytes (TB) are stored in the databases for many practical applications. The data generated in various aviation departments are handled using document store NoSQL. The aviation framework using document store enables the accessing and storing information in the NoSQL database server efficiently with recovering the deleted data from the MongoDB data file structure. This work focuses on using aggregation operation to retrieve the data in an efficient manner and Mongo index B-tree algorithm where insertion, deletion, sequential access, and searches are done in logarithmic time.

Keywords: NoSQL, MongoDB, B-tree algorithm

348. RAINFALL PREDICTION USING STACKING METHOD

Mrs.S.Poongkodi[1], NAVEEN .A[2], PRAKASH.M[3] [1]Associate Professor, Student[2,3]
Indra Ganesan College of Engineering

Abstract

Rainfall is the most crucial process of nature. All the living being rely on water and rainfall is a process that is responsible for the continual process of water cycle. Many human activities like agriculture are dependent on rainfall, especially in a country like India. Thus, it is very important and necessary to predict the rainfall patterns to estimate the flooding and drowning events. Application of data mining algorithms is the best way to forecast rainfall. In this paper we proposed stacking method for rainfall prediction. These algorithms predict rainfall numerically. In stacking there are two kinds of approaches for it. In first level learning, we have used five base classifier, i.e., naive bayesian, decision tree, support vector machine and neural network and in the second level meta-learning we have used deep neural network based stacking in ensemble classifier for increasing the accuracy.

Keywords: Traffic Light, LED Light, RFID, Machine Learning Algorithm

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-820 012

349.   RALZHELP: SYSTEM TO VERIFY THE WELL-BEING OF ALZHEIMER PATIENT

Mrs.S.Poongkodi[1], ISWARYA.B [2], GOKUL.R [3,] [1]Associate Professor, Student[2,3]
Indra Ganesan College of Engineering

Abstract

People getting older require special assistance. Despite getting weak and inception of other disabilities, dementia and Alzheimer's are special concerns that have its effects. Alzheimer's is a chronic neurodegenerative disease, in which patients suffering from it start to forget basic activities like taking medicines, eating food and taking care of themselves. Alzheimer's is a special type of dementia that causes memory problems that affect thinking and behavior. Generally, people suffering from the disease start forgetting things in a gradual pace and therefore, need to be constantly reminded to do the task they are forget. Symptoms gradually develop and worsen over time, becoming critical enough to interfere with their daily tasks. Beside this mixed feelings and behaviors start to build up since the patient suffering from Alzheimer's ork. Such patients find it difficult to make decisions regarding their everyday tasks and well-being, therefore, it is also the scope of the project to make some decisions on behalf of the patients and to communicate with the caretakers of the patients to provide real life assistance to the patient.

Keywords: Alzheimer's, Dementia, Monitoring System, Assistive technology, Health tracking, Doctor patient communication, assisted monitoring

350.   EFFICIENT LOAD DISTRIBUTION ACROSS VIRTUAL MACHINES USING MAP REDUCE IN PRIVATE CLOUD ENVIRONMENT

Mrs.S.Poongkodi[1],   ARUL JOTHI .   V[2], AJEESH.M [3,] [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

The emergence of cloud technology has not only increased the performance of services over the internet but also reduced the downtime drastically. Cloud is nothing but a set of machines distributed utilization, access from anywhere and cost effective. The services provided within an organization falls under private cloud. These are designed to meet specific requirements set by the company and provide flexibility, scalability, monitoring and automation. These are not open to customer but are driven by company requirements. Data Mining by high performance machines for tasks like market prediction, weather forecasting, split the task so that it will run on different machines instead of a single machine. This is known as distributed data mining. Here we use map reduce algorithm to efficiently distribute load across various machines in the private cloud.

Keywords: Private Cloud, Distributed Data Mining, Load balancing, Map Reduce

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 0 -.

351. A SURVEY OF MACHINE LEARNING ALGORITHMS

Mrs.S.Poongkodi[1], Vasanth D [2], Rabin Singh X [3,] [1]Associate Professor, Student[2,3]
Indra Ganesan College of Engineering

Abstract.

Today machine-learning algorithms provide an evident way to predict the assertive outcomes of different fields of datasets like healthcare, stock exchange, population statistics etc. In this research paper, we are reviewing these three supervised type machine-learning algorithms like Support Vector Machine (SVM), Random Forest and Naïve Bayes algorithms. There are several factors on which an efficiency of an algorithm. Those factors are like count of training- test samples given to the algorithm, feature's dimensions; independent features are available or not etc. Give our illustrative outlook on these algorithms.

Keywords – Dataset, SVM, Random Forest, Naïve Bayes, Decision Tree, Training Dataset, Testing Dataset

352. IMPLEMENTING CRYPTOGRAPHIC IOT IN PATIENT- CENTERED NETWORK TO VESTIGE ALZHEIMER AND DEMENTIA PATIENT

Mrs.S.Poongkodi[1], Vishnu B [2], Naveen Kumar T [3,] [1]Associate Professor, Student[2,3]
Indra Ganesan College of Engineering

Abstract.
The actual location of people remains a focus of research, particularly for those suffering from Alzheimer disease. Tracking the Alzheimer's patient fails to produce the optimal result because of security issues. Our proposed approach is to implement a design to track and locate the geographical region of the Alzheimer's patient using IOT Technology. To achieve this optimal solution, a secure transmission is required between the IoT device and cloud services. We developed a hardware module that implements an enhanced RSA algorithm to encrypt and transfer the sensitive data. This improves the accuracy of the detection which lacks in the existing systems.

Keywords: Patient monitoring, GSM, Microprocessors   Cryptography, Computer networks.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

353.   DESIGN AND FABRICATION OF UWB CIRCULAR SIERPINSKI GASKET FRACTAL ANTENNA

Mrs.S.Poongkodi[1], Tamilselvan T[2], Mahamuni R[3], [1]Associate Professor,Student[2,3] Indra Ganesan College of Engineering

Abstract

The modern telecommunication system requires a antenna with wider bandwidth. Fractal shaped antenna element is one of the technique to increase bandwidth. Fractal is a concept being demanded for wide band operation which is widely used in launch vehicle. In this paper, a circular sierpinski gasket fractal antenna with triangular slots which covers the UWB band from 3.0-10.0 GHz is proposed. The proposed antenna has dimension 34× 38mm2 epoxy FR-4 substrate with thickness 1.5mm having a dielectric constant of 4.4. The fractal antenna with three iterations was designed and fabricated. HFSS is used for the design, simulation and optimization. The Simulated and Fabrication results for return loss and radiation pattern are presented.

Keywords: Fractal Antenna; Sierpinski Gasket fractal antenna; HFSS

354.   SHIELDED ENCLOSURE MATERIAL AND THERE SHIELDING EFFECTIVENESS

Ms.J.Revathy [1], Sasikumar r [2], Yuvaraj s [3], [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

In this paper (i) the influence of shielding material on shielding (ii) the effect of aperture on shielding effectiveness are analyzed and modeled using MATLAB. Different materials are used for shielded enclosure since shielding effectiveness (SE) depends on the frequency of material with which the shield is made. Shielding materials like Aluminium, Copper and Steel are considered in this paper. Shielding Effectiveness is defined as the ratio of the input power of the unshielded load to that of the shielded one. Practical difficulty arises due to the presence of apertures in the shielded enclosure. Apertures are included for input/output connection, ventilation,etc .But presence of aperture degrades the performance of shielding.

Keywords: Electromagnetic Shielding; Aperture; Shielding Material; Shielded Enclosure; Electromagnetic Compatibility

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

355.   WIDE BAND FREQUENCY ANTENNA USING FRACTAL STRUCTURE

Ms.J.Revathy [1], Sivakumar p [2], Abinash P [3,] [1]Associate Professor, Student[2,3] Indra
Ganesan College of Engineering

Abstract

The use of fractal geometries has significant impacts on many areas of science and engineering; one of which is antenna. Fractal antennas for various telecommunication applications are already available commercially. The use of fractal geometries has been appeared to enhance several antenna features to varying extents. The objective of the project is to design and fabricate the Wide Band Frequency Antenna Using Fractal Structures resonating at 3.1 GHz to 10.8 GHz. Fractal concept to the hexagonal-shaped microstrip antenna that is designed low profile, light weight, flexible is introduced. The ansoft HFSS finite element electromagnetic computer package is used to model, simulate and analyze hexagonal fractal antenna with microstrip feeding and coaxial feeding that operates frequencies 3.1GHz to 10.8GHz. For designing the antenna FR-4 epoxy substrate with relative permittivity of 4.4 and thickness 1.6mm is used as the substrate. Microstrip feeding and coaxial feeding are compared and estimated the better performance. Different parameters of antenna such as gain, VSWR, radiation pattern, and reflection coefficient are analyzed and observed. The designed antenna can be used for different wireless point to point applications.

Keywords: Antenna, Dielectric, Patch, Substrate, Feed.

356.   SIGN LANGUAGE TRANSLATOR GLOVES

Ms.J.Revathy [1], Jeya stephen s [2], Ajith Kumar M[3,] [1]Associate Professor, Student[2,3]
Indra Ganesan College of Engineering

Abstract

Deaf communities uses sign language to communicate with others. Deaf will learn sign language from sign language tutors or using app. Three hundred sign languages are there in the world now.There are sign language translation gloves in development stage only for sign languages in America.There are no notable research in gesture identification in Indian regional languages. The deaf-mute community is at a serious disadvantage when it comes to communication with normal population.The normal population have difficulty in identifying and understanding sign languages used by the deaf-mute community.The proposed method focuses on to develop translation gloves for Indian sign language. Sensors are placed in the gloves to identify the position and movement of the hand. This developed system for deaf will display text in monitor based on Indian sign language given by mute.

Keywords:.Signlanguage,Translation   gloves,Gesture.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

357. IOT BASED AUTOMATION IN WASTE MANAGEMENT – INTELLIGENT BIN (I-BIN)

Ms.J.Revathy [1], **Hariharan n** [2], **Dharshini a**[3], [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

In the recent decades, Urbanization has increased tremendously. At the same phase, there is an increase in waste production. Waste management has been a crucial issue to be considered. This idea of i-Bin is a way to achieve this good cause. In our city many times we see that the garbage bins or dustbins placed at public places are overflowing. It creates unhygienic conditions for people. Also it affects cleanliness of that place spreading a bad odour. The present system has separate section of workers allotted for monitoring and cleaning the trashes at periodic intervals. But this is not properly maintaining the sanitation and management of wastes. The concept of connecting all the trash bins to a common network will be helpful in by implementing the idea of automation in waste management all over the city using intelligent bin(i-Bin). i-Bin is using the new technologies like Raspberry Pi, IR distance/ultrasonic sensor, actuators and weight sensors along with a web application to improve and smoothen ground level mechanisms for waste collection and efficient processing of waste.

.

Keywords:.i-Bin,trash bins,waste management.

358. RFID BASED PUBLIC BUS TRACKING SYSTEM

Ms.J.Revathy [1], **Hariharan n** [2], **Thivya Priya R**[3], [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract.

Nowadays, numbers of vehicles are increased, which proportionally increases traffic, so sometimes people may have to wait for a long time in bus stops. To reduce the excess time spent by peoples waiting in bus stops for local buses to reach their destination. Radio Frequency Identification (RFID) sensors and an alarm buzzers are used to update the current bus stops that the bus has been reached and an approximate time it will take to reach the user bus stops. It will help the users to know When are they going to reach the bus stops and what are the buses that are available for the user to reach their destination. The user can set an alert to the bus stops prior to their stop, so that if the bus reaches that specified stop an alert will be sent to the user. After that the user can move to their bus stops, so that the excess time spent by the people on bus stops is reduced. If the bus gets breakdown or any other problems a driver manually switch on the buzzer, then it will send a notification to the user that the bus had breakdown, so that the user can choose other available bus to their destination or other means of transportation without waiting for that bus. This RFID based bus status system will save the time of the people and also alert when they will get the bus.

Keywords- RFID,alarm buzzers

359.   **ALCOHOL DETECTION USING SMART HELMET SYSTEM**

Ms.J.Revathy [1], RANJITH.T [2], Kanagaraj k s[3,] [1]Associate Professor, Student[2,3]
Indra Ganesan College of Engineering

Abstract.   .

With the growing number of population, frequency of motor vehicle and the accidents is on the shadoof. Quiets occur because the person was riding while drunk . We propose mechanisms that can detect if one has over-consumed alcohol .For this purpose, we use onboard sensor that is the breath- analyzer (MQ3). The breath analyzer senses the amount of alcohol present in the breath of a person and if it is beyond the legal limit then the vehicle will not get started. This can help optimize accident and the people must wear helmetinorder tostart thevehicle. Thiswill ensure the acatalectic safety of the rider at all times.In this project Arduino UNO controller is used for detecting the alcohol consumption and based on the predefined limits the controller informs the details in the web link being updated in the program and it also stops the ignition of the vehicle if the rider has consumed alcohol beyond the limit. Thus this project developed mitigates the accidents due to drunken drive

Keywords—UNO Controller,Breadth analyzer.

360.   **KENAF DECORTICATOR**

Ms.J.Revathy [1], ROHINI.M [2], SIVASANKARI.P[3,] [1]Associate Professor, Student[2,3]
Indra Ganesan College of Engineering

Abstract

Natural products are environmentally safe from the process of extraction of raw materials to production, consumption and disposal .Generally wood material is used for paper production which costs billions and consumes   more time. An alternate and eco friendly product is kenaf, the so called 'pulichakeerai' is used for paper production. A machine is designed to seperate the bast and the core fibres of the kenaf stem. The bast fibres are used for paper extraction. Before the extraction of the fibres, accurate dimensions of the stem should be identified. For this 'Image processing technology' is incorporated for detecting the core- fibre edge dimensions. A simple design 'Solidworks' simulation tool is used for the decorticator.A sketch of decorticator is designed and a real shape is obtained. The solid work sketch designed can be used for extracting the paper in a eco-friendly, troble-free and economical manner.

Keywords : eco-friendly, kenaf fibre, kenaf paper, image processing, edge dimensions, solid *works*

361. DESIGN OF A NEW CDMA BASED ENCODING/DECODING FOR ON-CHIP COMMUNICATION

Ms.J.Revathy [1], RAJESWARI.K [2], JENIT KUMAR.A [3], [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

NoC technology is said to be the "front-end solution to a back-end problem". The major reasons why NoC's are necessary are that they reduce wire routing congestion, ease time closure, have higher operation frequencies and can change IP easily. The concept of Networking is introduced to SoC as provides a better and efficient method of inter-chip communication. Nowadays the Code division multiple access technique has step foot in NoC's for on-chip communication. Here we propose a newer encoding/decoding technique to leverage the performance and cost of CDMA NoC's in area, power consumption and throughput. The existing technique uses Walsh code for encoding/decoding operation and consumes more area and power. Our model uses Standard-Basis based encoding/decoding technique which could save a greater extent of area and power and also reduces the usage of logical gates and dedicated wires. Star topology is used here to apply CDMA technique to NoC. Software used is Xilinx ISE.

362. IOT BASED SMART PUBLIC DISTRIBUTION SYSTEM

Ms.J.Revathy [1], JENIFER. M [2], KEERTHIGA.A [3], [1]Associate Professor,Student[2,3] Indra Ganesan College of Engineering

Abstract

The project titled IOT based smart public distribution system proposes an automaticmethod of distribution of commodities to authenticated card holders The details of exchanges made are kept in a database. The clients need to access to their record through the Smart phone by entering their ID and password. They can view the stock accessibility. This system utilizes Raspberry-pi as controller and it is executed with Minutiae extraction based fingerprint matching algorithm. Automatic distribution of commodities is achieved by using DC motors controlled directly by Raspberry pi to open and close the valves.

PRINCIPAL
Indra Ganesan College of Enginee
IG Valley, Madurai Main Roa
Manikandam, Trichy-620 012

363.   IMAGE PROCESSING BASED PRODUCTION FLAW DETECTION IN KNITTING

Ms.J.Revathy [1], REVATHI.R [2], MARIYAMMAL.K [3,]   [1]Associate Professor,Student[2,3] Indra Ganesan College of Engineering

Abstract

One of the major problems in production is that the number of faults occurred while producing a fabric since it directly influences productivity. To overcome the losses, this paper provides a system with special surveillance of the knitting process to detect, identify and locate faults during production, by monitoring the fabric. The system also gives the user a valuable set of data related to production. This study has shown that image processing has huge potential to produce reliable measurements for identifying the flaws in the fabric. The flaw detection was automatically tested comparing fabric images captured by a digital camera. Therefore, the developed system is capable of stopping the circular knitting machine by using the processor as soon as a defect is captured by the webcamera.

Keywords—Image processing, Circular knitting machine, Web camera.

364.   A CHARGE CONTROLLER TECHNIQUES FOR SOLAR PV SYSTEM

Ms.J.Revathy [1], Nirmala.N [2], MANIKANDAN.D [3,] [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

The depletion of fossil fuel reserves and increased energy demand led to search of renewable energy resources. There are various renewable sources are available. Among these, the solar PV is most commonly used. In this paper a new converter topology has been discussed. There are two stages of conversion. In first stage, converter with high static voltage gain with reduced voltage stress is achieved. In second stage, the voltage gain of the converter is further improved with reduced conduction losses. This paper presents a cuk converter integrated with Boost and SEPIC converter. The design parameters of proposed DC-DC converter topology is discussed in this paper and the results are verified by MATLAB simulation.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

365. SMART IRRIGATION SYSTEM USING IOT AND IMAGE PROCESSING

Ms.J.Revathy [1], DAYANA TAMILARASI.S [2], ELAKKIYA.G [3], [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

Today the farmers are finding difficulty in monitoring the field about moisture content and temperature of the field. Hence, this project is developed to monitor the farms using the concept of Internet of Things (IoT) and Image processing. The solar panel is used in our project toutilize the renewable energy which acts as an uninterruptable power sources. The Battery is used to store the energy from the Solar panel via Charge Controller (MPPT). The Soil moisture sensor and the Humidity sensors are used to monitor the moisture content of the soil and also the temperature and humidity of the surroundings. The DC Pump can be controlled net shield. In image processing technique the health condition of the crop is intimated to the user with the help of Raspberry pi and webcam. The Raspberry pi captures the images of the crops and checks the images of the crops to detect its health condition whether it is infected or in Healthy condition. And the condition of the crops is intimated to the user by sending its images and health condition of the crops by E-mail notifications. This can be monitored from any part of the world.

Keywords – MPPT (Maximum Power Point Tracking), IoT (Internet of Things), DC (Direct Current

366. CUSTOMER'S CHOICE BASED INGREDIENTS SELECTION AND MENU ORDERING SYSTEM

Ms.A.Savariyamal Carolin A [1], Shalini p [2], Nivedha s [3], [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

Customary strategy that is normally been utilized in lodgings is by taking the client's requests and recording it on a bit of paper. The present time is said to be the universe of innovation. Such huge numbers of endeavors have been taken by eateries proprietors likewise to receive data and correspondence advances, for example, PDA, remote LAN, exorbitant multi contact on the association with servers to put arrange into the kitchen. In occupied long stretches of eatery this coordination is a test result in fulfillment to the clientSome systems use wireless technology where wireless application is user-friendly, improves efficiency and accuracy for restaurants by saving time, reduces human errors and provides customer feedback In this field, contact screen based propelled menu show and requesting framework idea is another creative thought where the customer can give his ingredient selection choice for the food that is to be ordered in the restaurant

Index Terms—hotels, restaurant, food, systems, applications

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-820 012

367. **DESIGN OF BOOST INVERTER FOR SOLAR POWER BASED STAND ALONE SYSTEMS**

Ms.A.Savariyamal Carolin A [1], **Ramya r** [2], **Sivasangari c** [3], [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

This paper presents a new ideology called as boost inverter which converts input DC supply into AC directly without using any filter circuit. The main part of today's research work is to use solar energy efficiently. While using for AC autonomous loads, the output from the solar panel should not suffer any losses during the various power conversion stages. The conventional voltage source inverter, which is currently in usage, produces an AC output voltage lower than the DC input supply and thus it requires another power conversion stage. It can be used to drive the loads only after removing the ripples using a filter. The main objective of the project is to produce an AC output voltage higher than the DC input voltage in a single stage. Thus the number of power conversion stages is reduced by using boost inverter circuit. Since Pulse Width Modulation technique is used to drive the circuit, the requirement of a filter at the output is not needed.

Keywords: Solar energy, Boost inverter, Pulse width modulation, Filter

368. **HIGH VOLTAGE DC GENERATION USING COCKCROFT WALTONMULTIPLIER CIRCUIT**

Ms.A.Savariyamal Carolin A [1], **Manikandan n** [2], **Shanmuganathan p**[3], [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

The objective of the paper is to design a voltage multiplier which should be able to multiply voltage from an input as low as 12 Volts to a maximum output of approximately 200 Volts. As High Voltage DC (HVDC) transmission is becoming more popular in the present scenario of bulk power transmission over long distance transmission, it is required to study the testing in the laboratory. In addition, it is very much costly. Cockcroft-Walton multiplier provides suitable high DC voltage source from a low input voltage i.e. 230 V AC voltage which is rectified by using half wave Capacitors and Diodes. Other specifications considered carefully while designing multiplier circuit and components have been chosen based on size consideration for expected load current and expected output voltage. The simulation of the entire circuit for production of high DC voltage is carried out in MATLAB simulation platform and the results were taken.

Key words: high voltage, dc, voltage multiplier circuit, cockcroft-walton multiplier.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

369.   HUMAN DETECTION ROBOT

Ms.A.Savariyamal Carolin A [1], Gowtham k [2], Dinesh kumar k[3,] [1]Associate Professor, Student[2,3]
Indra Ganesan College of Engineering

Abstract

This project aims to give a practical design to build the first and simplified version of a rescue robot which has to be active within disaster areas like collapsed buildings where rescue teams cannot operate due to a lot of technical difficulties. Human detection for rescue purpose is normally carried out by humans in such conditions, but when there is a risk of collapse or hazardous environment it will better to utilize some high tech equipment to achieve that mission rapidly and effectively. It can operate virtually in any place, By the way it can climb over small obstacles and can fit into small holes in which no human rescue team member can get into that. So we had implemented a microcontroller based robot.

Keywords: Robot, Disaster, Microcontroller based robot

370.   A SURVEY ON KCT CAMPUS FOR GREEN BUILDINGCERTIFICATION

Ms.A.Savariyamal Carolin A [1], Hariharan n[2], Kiruthiga v. [1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

In this paper, the concept of Green Building has been employed through the process of energy auditing. Green Building is the term used for a system which is efficient in all energy aspects-a sustainable system .In the existing buildings the major problem is that they are not sustainable.The inefficient use of the resources such as electricity, water etc., has led to the wastage of energy and increased monthly bills. This paper presents a preliminary survey on the various power consumption and has identified the areas that consume more energy and has suggested solutionsbased on recommendations given by Indian Green Building Council(IGBC).Hence, the MAHALINGAM VIGYAN BHAVAN in Kumaraguru College of Technology (KCT) campus was surveyed, analysed in energy consumption aspects for a better change in operation and economical wise. This paper will provide a base report if KCT wishes to apply for any Green building certifications.Visual Charts of the yearly power consumption and the yearly bills, calculation of the various loads have been made by walk-through Energy Audit. Estimation of payback periods and implementation costs have been proposed and given some recommendations.

Keywords— Energy audit, Energy Consumption, Energy conservation, Estimation, KCT, IGBC

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

371.   ENERGY MANAGEMENT SYSTEM USING ANN BASED LP APPROACH

Ms.A.Savariyamal Carolin A [1], Priyanga.g[2], Neethimozhi a [1]Associate Professor, Student[2,3] Indra
Ganesan College of Engineering

Abstract

This paper introduces an advancement technique to the interest side Energy Management
System (EMS) of a given shopper (e.g.an modern compound or college grounds) concerning
hourly power costs. This paper considers a bunch of interconnected cost responsive requests
in an Academic Campus. The requests can be provided through the fundamental framework
and stochastic Distributed Energy Resources (DERs, for example, wind and sun based power
sources. What's more, the group of requests possesses a vitality storeroom. The proposed
EMS has capacity that every shopper can utilize their own procedure to direct the present
load and costs in the power dissemination framework. To tackle this EMS issue and
advancement calculation dependent on Linear Programming (LP) approach has been
executed. Notwithstanding LP calculation an Artificial Neural Network was connected to
foresee the future power to alter the hourly load level. To assess the execution of the
proposed calculation an IEEE 14 transport framework was considered. The outcomes
demonstrates that the bunch of requests of vitality administration framework utilizing the
proposed methodology expanding the effectiveness and limiting the misfortunes than the
current strategies.

*Keywords- Energy management system, demand response, distributed energy resources,
neural network, real time pricing.*

372.   VIRTUAL QUALITY TESTING OF PUMPS

Ms.A.Savariyamal Carolin A [1], Jegathiswari.d[2], Mahendran s [1]Associate Professor, Student[2,3]
Indra Ganesan College of Engineering

Abstract

The wide application of pumps ranges from agricultural, domestic, chemical, industries etc.
It is essential to test the basic parameters of pumps to provide an expediency.Pump testing
should be carried out at a precised rate and also as it is resolute. In the present scenario,
pump testing is done using - manual methods, analog measurements or firm test bench
measurement.In this proposed system, real time display of the test data can be displayed.
Different types of reports reminiscent of ng process in pump manufacturing industry. The
endeavor of data. Composition of the test system and related data incorporated into the
graphical program can automatically generate device specific data points. The proposed data
acquisition system under consideration can be used to measure both electrical and non
electrical parameters. The automatic testing of the pump -set characteristics is realized easily
by giving the relevant data to the program

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

373. ENGINEERING, ENGLISH AND EFFECTIVE COMMUNICATION

Ms.A.Savariyamal Carolin A [1], SUJITHA.R[2], Shalini p[1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

The ongoing debate in the current scenario is the employability ratio of the graduated engineering students. A number of students having very good percentage of marks are not good enough to be employed. One of the reasons for this is that they lack the skill for effective communication. The reasons for their inability to communicate effectively many be many. But it primarily rests on their inadequacy in communicating in English. Though many students have realized this, the lack of proper aid leaves them in a helpless state. This paper attempts to find simple solutions to the stated problem.

Key words - employability, inability, effective communication, English.

374. ENHANCEMENT OF THE THERMAL EFFICIENCY IN THE DISTILLATION COLUMN

Ms.A.Savariyamal Carolin A [1], SIVASANKARI.P[2], ISWARYA.B[1]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

Wax temperature control is a challenging problem because of severe disturbances. Hence the disturbance parameters for the control loops in wax molding unit were identified and in order to achieve a satisfactory performance in its operation, a suitable control methodology was proposed. The wax molding outlet temperature control was improvised using multivariable control considering inlet temperature in four passes as disturbance parameter. PID control was used considering inlet and final temperature into the wax molding as disturbance parameter to improvise tray temperature control. A Labview based independent control system to be developed which can measure the disturbance and automatically correct the accordingly. We suggest that the overhead condensate temperature control will suppress the disturbance as it has had the chance to affect the temperature.

375. **AUTOMATIC IRRIGATION SYSTEM USING RPI – IOT**

Ms.A.Savariyamal Carolin A [1], **SIVASANKARI.P**[2], **ISWARYA.B**[3]Associate Professor, Student[2,3]
Indra Ganesan College of Engineering

Abstract

In tropical countries, the temperature is very high and evaporation is more rapid. So, the automatic irrigation is necessary for ample supply of water and to prevent scarcity of water in the dry winter season. To achieve the benefits of the ecosystem such as water and solar energy conservation the efficiency of irrigation system must be improved. By using modern technologies to control the water level of farming and providing the automatic fertilization as per the nutrition requirements in the plants. The use of organic fertilizers may lead to a reduction in the use of chemical fertilizers such as pesticides, insecticides, chemical manures etc. The automation of the process is further induced by using WI-FI module which will lead to control the process from various distances apart. The manpower is ultimately reduced by subsequent improvement in the drip irrigation system. The ultimate aim of the project is to improve the quality and quantity of the irrigation system. This proposed system has overcome limitations of previous systems like distance problem, range problem.

Keywords: - IoT, Microcontroller, sensors, Rpi, irrigation system

376. **FREQUENCY ERROR TIMING ANALYSIS IN PID CONTROLLER**

Ms.G.Mahalakshmi [1], **Sasikumar r**[2], **Vigna sri s**[3]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

Power consumption has become very critical in circuit-level timing analysis in PID controllers. Razor Flip Flop is a major vital role to detect the time errors in critical path circuit. Integrated Sequential circuits are occurredin time error by voltage scaling in supply voltage. In this work, we proposed the method Razor II Clock gated Flip Flop (R-II CGFF) by using Pulse-Triggered Flip-Flop. R-II CGFF is compared with previous work such as SDFF, HDFF,andClocked CMOS(CCMOS). This approach reduces the timing error and increases the robustness in Integrated Sequential Circuits. R-II CGFF is mainlycontributing to high-precision, high-speed, power reduction in static and average power consumption in PID controller. This technique is suitable for low power and data communication in PID controller. Results are validated by simulations, 74% of power reduction occurs compare to conventional design, by using IBM 130nm with 1.8 supply voltage.

Keywords: PID, Pulse triggered FF, Razor

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

377.   **EFFICIENT WIRELESS POWER TRANSFER USING FAR FIELD TECHNIQUE**

Ms.G.Mahalakshmi [1], **Arun praveen raj a**[2], **Vinothini s**[3]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

Wireless charging brings forward several new challenges in designing energy efficient wireless sensor networks. This work proposes the application of wireless power transfer (WPT) using far-field technique for charging sensors and electric-powered Unmanned Aerial Vehicles (UAVs) like drones. Far-field (radiative) technique can transport energy over long distances being aimed at the receiver. A rectenna design for an input power of 30 dBm is proposed to work at 2.45 GHz. Two topologies are analysed, i.e., Radio Frequency (RF) Combining Circuit (RFCC) and Direct Current (DC) Combining Circuit (DCCC). It is seen that the efficiency transfer condition. The design has been extended for multiple antenna elements with RF switch to route high frequency signals through transmission paths providing better efficiency and steady output.

Keywords: Wireless Power Transfer, far-field, micro-strip, rectenna array, Radio Frequency Combining Circuit (RFCC), Direct Current Combining Circuit (DCCC), Rectenna Topology Indicator (RTI).

378.   **PROCESS AUTOMATION FOR pH MONITORING AND QUALITYCONTROL IN SUGAR INDUSTRY**

Ms.G.Mahalakshmi [1], **Arun praveen raj a**[2], **Vinothini s**[3]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

The quality of white sugar is depends on the important parameter of pH Valve of sugar cane juice in Clarification process in sugar manufacturing industries. It is a highly non-linearity process the pH has makes an impact of affecting the quality of white sugar. So that an automatic control has been developed to maintain the pH parameter and stabilize the clarifying process using PLC and SCADA system. On line estimation of pH valve is to be measured and implementation of PID control using PLC. PLC Control is implemented to automatic control in clarifying process of sugar juice based on relevant error values of on line pH parameter from clarification process. The pH being non-linear in nature, implementation of PID control using PLC logic method was used to optimize and control the neutralized pH value in the clarifying process of sugar juice. The SCADA has been developed to monitor throughout the process. This has been great impact on the result of stabilising the clarifying process and enhancing the quality of the purified juice and lastly enhancing the quality of white sugar.

Keywords :pH,PLC,PID,SCADA,VFD

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

379.   THE STATUS OF WOMEN IN THE 21st CENTURY

Ms.G.Mahalakshmi [1], **Ramesh.M** [2], **Prasanth R** [3] Associate Professor, Student [2,3] Indra Ganesan College of Engineering

Abstract

Women are not born, but made. What better than India to exemplify this statement by Simone de Beauvoir. With the whole world celebrating International women's day with great pomp and show, it would be only apt to analyze the position and space Indian women occupy today, and comparing it to the time 60 years ago when the country had just gained independence. With women participating in nationalist movements, to being pushed into the domestic household space, to their resurgence as super – women today, women in our country have seen it all. There have been innumerable debates about gender in India over the years. Much of it includes women's positing in society, their education, health, economic position, gender equality etc. what one can conclude from such discussions is that women have always held a certain paradoxical position in our developing country. While on one hand, India has seen an increased percentage of literacy among women, women are now entering professional fields Constitution was formulated, it granted equal rights to women, considering them legal citizens of the country and as an equal to men in terms of freedom and opportunity. The sex ratio of women at this time was slightly better than what it is today, standing at 945 females per 1000 males. Yet the condition of women screamed a different reality.

Keywords: Simone de Beauvoir, Patriarchy, Paradoxical position, Women Nationalists

380.   METHODS OF EMERGING INSCRIPTION SKILLS

Ms.G.Mahalakshmi [1], **SUJITHA.R** [2], **Velrajeswari M R** [3] Associate Professor, Student [2,3] Indra Ganesan College of Engineering

Abstract

"Start writing, no matter what. The water does not flow until the faucet is turned on."— Louis L'Amour. Some of us may wonder why it is not enough to teach our students how to speak English adequately: won't they then obviously be able to write it? Not necessarily, for writing is not simply speech written down on paper. Learning to write is not just a "natural" extension of learning to speak a language. We learnt to speak our first language at home without systematic instruction, whereas most of us had to be taught in school how to write that same language. Many adult native speakers of a language find writing difficult. The two processes, speaking and writing, are not identical. This paper deals with the methods of emerging writing skills.

Keywords: Writing, approaches, communicative approach, relevance of communicative approach, process

381. ICT IN ELT FOR A VIBRANT LEARNING

Ms.G.Mahalakshmi [1], Gwendolyn Rosetta.G[2], Aswini. M[3] Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

Teaching leads to pleasure always. Teaching through technology multiplies the pleasure. The interest of students and teachers do not remain slumber in the classroom on using ICT tools. It is not that conventional method of teaching is a boredom or outdated pedagogy but it is the base. ICT tools in teaching grow on the base and emerge as a beautiful building. One could be a creative teacher, but to channelize one's creativity, a mode is needed. ICT tools are such modes for properly channelizing a teacher's creativity. Teaching- Learning becomes blissful on working with ICT tools. There are a lot number of ICT tools which can be used for free of cost. This research study is intended on the exploitation of ICT tools in English teaching classrooms and disseminating information and imparting knowledge to kindle the skill sets of the students. ICT tools and light-heartedness. It is not that things are done beyond the horizon with ICT tools but an extension of the learning horizon. As literature aims at instructing and delighting, ICT tools too do the same in all the contexts. The usage and benefit of some ICT tools in detail would be the contents of the full paper.

Keywords:ICT tools, creativity, information, imparting, teaching, learning

382. COPING STRESS WITH EMOTIONAL INTELLIGENCE

Ms.G.Mahalakshmi [1], JANSIRANI.K[2], MONISHA.A[3] Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract
Emotional Intelligence is a theory which has gained much significance in the recent decades. The propagators of this theory were John Mayor and Peter Salovay. The publication of Daniel Goleman's book Emotional Intelligence revealed the practical dimensions of this theory. The present study is focussed on assessing the cognition levels of students in the first year of graduation and the impact of stress. An online survey questionnaire is filled by the students and the observations are recorded. The level of stress in students, their capability to cope with stress and excellence in studies are ascertained. The study emphasizes the need to promote development of emotional intelligence in students.

Keywords:Emotional intelligence,John Mayor, Peter Salovay, cognition, stress

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

383. UTILIZATION OF SLUDGE WASTE IN MANUFACTURING OF CONCRETE PAVER BLOCKS

Ms.G.Mahalakshmi [1], GAYATHRI.P[2], NAVEEN .A[3] Associate Professor, Student[2,3]   Indra Ganesan College of Engineering

Abstract

Study deals with reuse of textile mill sludge in making cement based Solid blocks which can be used in practice for bulk   usage of   sludge.   Textile sludge is mixed with cement and later with combination of cement to make paver blocks. Solid blocks are tested for compressive strength. To study the post effects of the sludge reuse, water used for curing (curing water) is also   analyzed   for   different parameters such as pH, landfilling   disposal   option. The   carbon   dioxide emitted from the worldwide production of ordinary Portland cement corresponds to approximately 7% of the total greenhouse gas   emissions   into   the   atmosphere. Hence there is a demand on byproduct which can partially replace cement.

Keywords: Textile sludge, pavers, concrete

384. ANALYSIS ON THE UTILIZATION OF BIODEGRADABLE NON WOVENS AS TOP LAYER FOR SANITARY NAPKINS

Ms.G.Mahalakshmi [1], DINESHKUMAR.G[2], Dharmaseelan M[3] Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

This project deals with the analysis of using biodegradable non woven's as top layer for sanitary napkins.

Commercial sanitary napkin is made up of 80% of plastics and takes nearly 500 -800 years to degrade in landfills. It also releases toxic gases on burning. So this project aims at utilizing Viscose and bamboo spun lace non woven for the top layer of the sanitary napkin. These non wovens will be tested for overall moisture management capability, Wetting time, absorption rate, maximum wetted radius, spreading speed, one way transport index. The results are expected to reveal the suitability for top layer of a sanitary napkin. Thus this project focuses mainly on eco- friendliness and sustainable development.

Keywords: Viscose, Bamboo, Spun lace non woven, Top layer characterization, Sanitary napkins

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

385. LOW COST BIODEGRADABLE ARECAHUSK FIBRE FOR THE REMOVAL OF DIRECT DYE FROM EFFLUENT

Ms.G.Mahalakshmi [1], JENIFER. M[2], GANGA.R[3]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

As treatment of dye plant effluent is becoming a mandatory requirement, search for cheap and best technology is progressing.Different treatment methods like filtration, flocculation, chemical precipitation, ion exchange, membrane separation and adsorption are being used in Industry. The adsorption process is one of the efficient methods to remove the contaminant from the effluent. New approaches based on the use of natural, inexpensive sorbent materials for effluent treatment are reported often. Areca husk fibre, a commonly available agriculture waste, is of dye solution and effect of the amount of adsorbent on the percentage of removal of direct dyes.

Keywords: Areca fibre, adsorption, direct dye, effluent treatment, hemicellulose

386. A CRITICAL REVIEW ON FRICTIONAL CHARACTERISTICS OFWOOL FIBRE

Ms.G.Mahalakshmi [1], ABINAYA.P[2], ARUN KUMAR.A[3]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

This paper examines wool's attributes for technical textiles and introduces a wide range of new and future applications. Directional frictional effect (DFE) of wool causes friction under applied force polishes the abrasive surfaces. Interlocking of scales of wool involves in ratchet mechanism. In this review, study of DFE characteristics of wool fibre discussed related to various applications for industrial textiles. Wool as a protein fibre has a unique property is its scaliness. Due to its scales on the surface of the fibres, friction increases and due to of particular gsm and density are calculated and made into a composite disc by use of resin. The disc roller is so designed in grooved pattern for technical reasons. The abrasion characteristics are so compared with the woollen fabric treated with Potassium permanganate solution which increases the friction characteristics. The abrasion resistances of both the fabrics are compared and their abrasive properties are studied.

Keywords: Directional frictional effect, technical textiles, industrial textiles, woven fabric.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

387. A CRITICAL STUDY ON IMPROVING PRODUCTIVITY AND LIVELIHOOD OF HANDLOOM WEAVERS

Mrs.B.Kiruthiga [1], **Thivya Priya R**[2], **Aravindh samy p**[3] Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

Weight of traditional jacquard machine is reduced by modifying its components dimension and size. Pneumatic and electric lifting mechanism adopted on jacquard machine handloom and its productivity was studied and compared with traditional jacquard machine. Its productivity and earnings are discussed in this paper to enhance the livelihood of handloom weavers.

Keywords: Handlooms,Jacquard, Productivity, Earnings. Lifting mechanism.

388. EFFECT OF SUSTAINABLE BLENDED FABRICS FOR APPARELS

Mrs.B.Kiruthiga [1], **DINESH.J**[2], **Ruthramoorthy M**[3] Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

Recently fashion world is slowly adopting for sustainability by choosing natural fibres and more eco- friendly processes. In the last decade, there has been revived interest in India, and now in China, to use banana fibre to make textiles. This paper deals with the combination of fabric using banana and bamboo fibres due to its sustainability towards environment. It helps companies in the fashion and textile industry to develop, advance and communicate their sustainability and circularity work more successful. Naturally these fibres having properties like bacteriostatic, antifungal, antibacterial, hypoallergenic, hydroscopic and resistance against UV light. This garment may protects the end-users taking into account both environmental and socio-economic aspects.Thus environmental impacts of petroleum-based fibres can be minimized.

KEYWORDS: Eco-friendly, Bio-degradable, Natural fibres, UV Protection

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

389. OPTIMISATION OF PROCESS PARAMETERS IN KENAF/ POLYPROPYLENE COMPOSITES IN COMPRESSION MOULDING

Mrs.B.Kiruthiga [1], **AMUTHA.P**[2], **ARUL JOTHI . V**[3]Associate Professor, Student[2,3]   Indra Ganesan College of Engineering

Abstract

Renewable natural fibers like kenafcan be used to produce composites as replacement to plastic boards in household and industrial applications. The objective of this study is to to optimise the process parameters for compression moulding of kenaf polypropylene composite to get maximum tensile, flexural and impact strength. Three levels of Temperature (160 ° C, 180 ° C and 200° C), compression pressure (7, 9 and 11 Mpa) and time of application (10,20 and 30 min) have been used for producing kenaf/ polypropylene blend ratios of 50:50, 65:35 and 80:20. The samples were produced through carding for web formation, needle punching for nonwoven making and finally in compression moulding machine for boards making. All the composite boards were analysed for tensile, flexural and impact strength .Itwas found that the temperature and time has positive correlation with tensile strength and flexural strength in all blend ratios whereas pressure has positive correlation with Impact strength in 50:50and 65:35 machine gives highest tensile strength and flexural strength. The maximum Impact strength is achieved with 80:20 blend at 180 ° C, 7 Mpa pressure and 30 minutes duration. The tensile and flexural strength is the highest at a blend ratio of 65:35 whereas the Impact strength increases with the increase kenaf content up to 80:20

Keywords:Tensile strength, Flexural strength, Impact strength, Temperature, Pressure, Time, natural fibre

390. A STUDY ON THE INFLUENCE OF VARIOUS PROPERTIES IN FABRICS COMMONLY USED FOR A SAREE BLOUSE

Mrs.B.Kiruthiga [1], **PARKAVI.A**[2], **MANIKANDAN.D**[3]Associate Professor, Student[2,3]   Indra Ganesan College of Engineering

Abstract

This study deals with the analysis on the properties of three fabrics commonly used a saree blouse. The three fabrics chosen for the study are 2 by 2, Full voile and Amber. All the three materials were tested for GSM, thickness, Tensile strength, elongation, bending, drape and abrasion resistance. The results revealed that 2 by 2 fabric.

Keywords::2 by 2, Full voile, Amber, properties, Tailorability.

391. IMPLEMENTING, ENHANCING AND FABRICATION WITH NATURAL FIBRES IN HELMET

Mrs.B.Kiruthiga [1], Mahendran s[2], Arun praveen raj a[3] Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

The helmet plays a major role in human safety especially at road. The helmets are made up of a number of different items. Mainly helmets comprises the use different kinds of fibres and also plastic materials. In fibres mostly synthetic fibres are being used, which mostly aren't good absorbers of heat and sweat. Hence this issue could be resolved by the use of more natural fibres which improves the advantage of heat and sweat absorbance this making the helmet comfortable to wear by all. There are many natural fibres that serve this very purpose let's dig into it.

Keywords: Helmet, Natural fibres, Sweat absorbance, Comfort

392. DEVELOPMENT OF BIODEGRADABLE ABSORBENT CORE FOR BABY DIAPERS FROM BANANA FIBRES

Mrs.B.Kiruthiga [1], KANIMOZHI.K[2], MANIKANDAN.D[3] Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

As people were concerned about the environment, everyone wants a sustainable product and people will be more cautious in using hygienic products. Some natural fibres have been left unused and it is to be properly utilized. Banana is one of the most sustainable fibres which is left unused, it was obtained from the pseudostem of the banana plant which was thrown as agricultural waste. Banana and cotton are known for its absorbency. It is one of the most essential feature always demanded by consumers. Wood pulp is the major raw material used in most hygienic products like a diaper, napkin etc., from destroying the trees, which was replaced by banana and cotton fibres. Cotton has chosen for its easy availability, low cost, comfort and hygienic properties. This paper deals with the study on the development of absorbent core absorbent core. The developed absorbent core has been tested for free swell absorption, centrifuge retention and antimicrobial properties. These properties are to be compared with commercial diapers as per the standards. Various types of absorbent core have been developed by varying the combination of banana and cotton fibres.

Keywords: Banana, cotton, absorbent core, diapers

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-62

393. COMPARATIVE STUDY OF NATURAL FIBRE COMPOSITE FOR TECHNICAL APPLICATION

Mrs.B.Kiruthiga [1], **REVATHI.R** [2], **PARKAVI.A** [3] Associate Professor, Student [2,3] Indra Ganesan College of Engineering

Abstract

Natural fibres with low density, biodegradable, recyclable and environmental friendly are abundantly used in all fields to replace polymers. Natural fibers has its origin from cultivated plants, animals and trees which have intrinsic properties such as low weight, cost, high specific strength, and specific stiffness. These natural fibres offer a number of advantages over traditional synthetic fibres. Natural fibres which have low specific gravity, tensile strength, high modulus which also offers renewability biodegradability and cost saving when compare to synthetic polymers and fibres. Some biodegradable fibers, flax, hemp, may provide the specific mechanical properties compared to those of the glass fiber, due to their high strength and low density of their volume. Due to these characteristics the replacement of the synthetic fibers with natural fibers has a wide range of technical application. Due to these characteristics, fibres and their application in composite and protective textiles.

Keywords: biodegradable, density, synthetic fibres, protective textiles, composite.

394. IMPROVING THE EFFICIENCY OF CLUSTERING WITH DRIFTING CONCEPTS USING DIFFERENTIAL EVOLUTIONARY PARTICLE SWARM OPTIMIZATION ALGORITHM

Mrs.B.Kiruthiga [1], **REVATHI.R** [2], **KANIMOZHI.K** [3] Associate Professor, Student [2,3] Indra Ganesan College of Engineering

Abstract

Data mining is the process of extracting the knowledge or patterns from large volume of database.

Clustering is the process of grouping the similar data objects in to clusters so that the objects in the same cluster have high similarity but are very dissimilar with objects in other clusters. An existing system uses an iterative optimization algorithm for clustering the data objects with drifting concepts using some cluster validity function to evaluate the effectiveness of the clustering model while each new input data subset is flowing. The Proposed system uses Differential Evolutionary Particle Swarm Optimization(DEPSO) model for effectively clustering with drifting concepts. The experimental result shows the superior performance of the proposed algorithm.

Keywords: Cluster analysis, Differential evolutionary, Particle Swarm Optimization, Drifting concepts detection

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

395.   A RECAPITALIZATION ON CRYPTOJACKING AND END TO END ANALYSIS OF RANSOMWARE ATTACKS

Mr.M.Raja[1], Vaishnavi g[2], Abinash P[3] Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

The recent trend of today's digital media is the usage of poisoned website to mine crypto currencies ,these currencies are alternatives to traditional currencies which work based on decentralization, bit coin was the first currency to be establish in this way, crypto currencies are protected with block chain which can be simplified as growing chain. This block chain is managed by peer to peer network, based upon this blockchain network crypto jacking takes place, and hence cryptojacking is mining of one's digital currencies without their knowledge, hackers find cryptojacking more profitable because they are a lot cheaper and safe than compared to other digital thefts. Tracking and finding the cause of theft becomes very hard in this method because mining kits can be purchased at a very cheap cost. There are primarily two methods to be followed to get to the computer and to perform cryptojacking, one is to run a infected code on the host computer and the other is to make the user click the content with threat types of cyber crimes prevalent are discussed.

Keywords:Crypto jacking, Crypto currencies, Mining , Online scams

396.   A CRITICAL ANALYSIS OF LPWAN AND OTHER IOT CONNECTIVITY OPTIONS

Mr.M.Raja[1], Vijaya dharani k[2], Manikandan n[3] Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

This paper compares various approaches to IoT connectivity and then throws light on various features of the LPWAN paradigm. It also compares the various network architectures of the licensed and the unlicensed LPWAN connectivity option and the scope of research in LPWAN-IoT security. Low-Power Wide Area Networks LPWAN has been chosen as the most promising connectivity option in most sectors due to its low power operation, wide range, low cost and scalability. One of the factors by which it is able to achieve the above-mentioned properties is the use of star network topology.

Keywords:IoT, Connectivity, IoT Security, Low Power, High Range, Network Security

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

397. SALES PREDICTION FOR A MANUFACTURER

Mr.M.Raja[1], Sudhakaran c[2], Jeya stephen s[3] Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

This paper introduces the complex system perspective into retail market analysis. To understand the retail market, a person has to search for local patterns at the micro level which includes segmentation, separation and profiling of diversified group of consumers. Hence, markets are modelled as complex systems. Such strategy is able to uncover emerging regularities and patterns that make markets more predictable. This strategy considers the system as a whole to detect the emerging pattern as a result of the interaction between its self-organizing parts. The global behaviour of the retail market naturally emerges as a novel description of its properties. This task demands for a data-driven empirical framework. In this paper, we analyse a transaction database, recording the micro- purchases of a million customers in the stores of a supermarket chain.

Keywords: sales prediction, retail analysis, forecasting

398. SURVEY OF DEEP LEARNING ARCHITECTURES AND DIFFERENT TASKS OF OBJECT DETECTION

Mr.M.Raja[1], Dharshini a[2], PRIYADHARSHINI.M[3] Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

Deep learning is a subset of the field of machine learning, which is a subfield of AI. The facts that differentiate deep learning networks in general from "canonical" feed-forward multilayer networks are More neurons than previous networks, More complex ways of connecting layers, "Cambrian explosion" of computing power to train and Automatic feature extraction. Deep learning is defined as neural networks with a large number of parameters and layers in fundamental network architectures. Some of the network architectures are Convolutional Neural Networks,Recurrent Neural Networks Recursive Neural Networks, RCNN (Region Based CNN), Fast RCNN, Google Net. Object Detection is an important computer vision problem with a variety of applications. The tasks involved are classification, Object Localisation and instance segmentation. This paper will discuss how the different architectures are useful to detect the object.

Keywords: Deep learning, RNN, CNN, YOLO, SSD

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

399. VARIOUS APPROACHES FOR RECOMMENDATION SYSTEM

Mr.M.Raja[1], Kesavamurthi M[2], Sumathi[3] Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

Recommender systems(RSs) are used in application domains to assist customers in the search for their favorite products. Recommender system filters information which takes users ratings and predict user preferences in ecommerce and other categorical websites. we investigate personal recommendation based on customer preferences and search the neighbors through the customer preferences.It generates recommendations based on implicit feedback or explicit feedback. Implicit feedback is based on analysis of browsing patterns of the user. Explicit feedback is generated from the ratings provided by the user. More broadly addressed was the topic of machine learning's algorithms, focused on filtering algorithms based on the users or objects, and based on content.

Keywords: Recommendation System, text mining, decision making

400. VOICE NORMALIZATION AND AUDIO QUALITY ANALYSISIN CELLULAR CONFERENCE CALL MAINTENANCE

Mr.M.Raja[1], Kiruthiga v[2], Moorthi c[3] Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

Conference call is the one which can be used in many types of communication resources. In this case, the conference call resource will interconnect many number of peoples to share the same or different information. There is many types of issues evolved during generation or communicating through the conference calls. Such as the back ground noise, audio delays and the unrecognised speaker volume. The proposed approach Voice Normalization and Audio Analysis (VNAA) call connecting will detect the error codes and improve the quality of calls, when connected with many number of users. By this approach the error ranges and quality ratios are identified and rectified for the received calls.

Keywords: Voice Normalization and Audio Conference (VNAC), Error signal detection, Amplification

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

401. PSYCHIATRIC COUNSELLING WITH CHATBOTS

Mr.M.Raja[1], SIVASANKARI.P[2], SOWMIYA.D[3]Associate Professor, Student[2,3]
Indra
Ganesan College of Engineering

Abstract

Chatbots, or conversational interfaces are a new way for individuals to interact with computer systems. Recent advances in machine learning have greatly improved the accuracy and effectiveness of natural language processing and chatbots are becoming an option for many organizations. Most commercial chatbots are dependent on platforms created by the technology giants for their natural language processing. There are early studies where users are given psychiatric counselling with chatbot which have changed the drinking habit based on intervention approach. This is a more accurate and continuous emotion recognition with better satisfaction to users who need mental health care. All g (NLU), and emotion recognition based on multi-modal approach. These methodologies enable continuous observation of emotional changes sensitively and a case-based counselling response model is proposed for psychiatric counselling.

Keywords: Chatbots, Psychiatric counselling, Natural Language Understanding, Emotional changes, Machine Learning

402. SCALABLE IOT BASED HOME AUTOMATION SYSTEM

Mr.N.Karthikeyan[1], PARKAVI.A[2], PRAKASH.M[3]Associate Professor, Student[2,3]   Indra
Ganesan College of Engineering

Abstract

Home automation is becoming popular due to its numerous benefits. Home automation refers to the control of home appliances and domestic features by local networking or by remote control. The proposed system consists of two main components; the first part is the web server, which presents system core that manages, controls, and monitors users' home. Users can locally or remotely manage and control the system is scalable that one server can manage many hardware interface modules as long as it exists on Wi-Fi network coverage. System supports a wide range of home automation devices like power management components, and security components. Using the, and control the device status according to the particular device configurations. The proposed system is expected to be better from the scalability and flexibility point of view than the commercially available home automation systems.

Keywords: IoT, Cloud, Home automation, Mobile Application

403. DE-NOISING MEDICAL IMAGES BY HYBRID FILTER IN WAVELET DOMAIN

Mr.N.Karthikeyan[1], DINESH.J[2], SRIVIDHYA.K[3] Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

De-noising is one of the most important task in nearly all medical imaging applications. In this paper, a new hybrid method for de-noising medical images based on hybrid filters in the wavelet domain is proposed and analyzed. The wavelet transform is applied to decompose the medical image into its four sub-bands. The RMSE and PSNR measures are used to analyze the improvement in de-noising medical images. The experimental results indicates that the proposed method gives the better result than conventional de-noising methods.

Keywords:Medical image, Hybrid filter, Wavelet Transform, PSNR and RMSE

404. WEAKLY GENERALIZED CONNECTEDNESS IN INTUITIONISTIC FUZZY TOPOLOGICAL SPACES

Mr.N.Karthikeyan[1], Sudhakaran c[2], Sathasivam p[3] Associate Professor, Student[2,3]   Indra Ganesan College of Engineering

Abstract

In this paper we have introduced the intuitionistic fuzzy weakly generalized connected space, intuitionistic fuzzy weakly generalized super connected space and intuitionistic fuzzy weakly generalized strongly connected space. We investigated some of their properties. Also we characterized the intuitionistic fuzzy weakly generalized connected space.

Keywords: Intuitionistic fuzzy topology, intuitionistic fuzzy weakly generalized connected space, intuitionistic fuzzy weakly generalized super connected space and intuitionistic fuzzy weakly generalized strongly connected space.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

405. EXISTENCE OF SOLUTIONS OF FOREST DYNAMICS

Mr.N.Karthikeyan[1], Nivedha s[2], Manikandan n[3] Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

A diffusion model of forest boundary dynamics is attempted. An analytic solution is established with homotopy analysis method. Impact of exothermic and endothermic factors are discussed.

Keywords: Homotopy analysis method, forest boundary dynamics, seed dynamics.

406. NANOGENERALIZED-SEMI HOMEOMORPHISMS IN NANO TOPOLOGICAL SPACE

Mr.N.Karthikeyan[1], Selvi margrate a[2], Ramya r[3] Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

The concept of generalized-semi homeomorphism was introduced andstudied by Devi et. al and several topologists analysed the notion of nano homeomorphism in nano topological space.In this paper,nanogeneralized-semi closed functions and nanogeneralized-semi open functions in nano topological space are analysed in relation with existing functions . Also, new notions like nanogeneralized-semi homeomorphisms and nanogeneralized-semi* homeomorphisms are introduced and some of their properties are analysed.The new concepts namely, nanogeneralized-semi compactness and nanogeneralized-semi connectedness in nano topological spaces are also introduced.

Keywords: Nano continuity, Nano sg-continuity, Nano sg-irresoluteness, Nano gs-open sets, Nano gs-closed sets, Nano gs-continuity,Nanosg-homeomorphism.

PRINCIPAL
Indra Ganesan College of Engineering
G Valley, Madurai Main Road
Manikandam, Trichy-029

407. BAYESIAN LEARNING OF ENSEMBLES WITH ECHO STATE NETWORK (BLE-ESN) FOR TEMPERATURE PREDICTION

Mr.C.Murugesan[1], Selvi margrate a[2], Nivedha s[3] Associate Professor, Student[2,3]   Indra Ganesan College of Engineering

Abstract

Temperature prediction is a challenging problem and a concern in energy, environment, industry and agriculture etc. Climate models and statistical time-series forecasting methods are the ineffective forecasting tools of the long-range temperature prediction. Based on analysis of monthly temperature data sets, a new Recursive Bayesian Linear Regression algorithm with echo state network (RBLR-ESN) algorithm is proposed for prediction of long-term temperature. But the major issue of this work is the computational complexity and accuracy or prediction rate of the algorithm is not enhanced correctly. To solve this computation complexity issue, in this work Bayesian Learning of Ensembles with echo state network (BLE-ESN) algorithm. BLE-ESN algorithm is for producing ensembles of predictors based on holdout estimations of their generalization performances. This approach uses a prior directly on the performance of shown that BLE-ESN has a good and competitive accuracy with current state-of-the-art methods for temperature prediction.

Keywords: Bayesian learning, Ensemble learning. Linear Regression algorithm, prediction

408. SURVEY ON SECURITY OF INTERNET OF THINGS

Mr.C.Murugesan[1], Moorthi c[2], Nivedha s[3] Associate Professor, Student[2,3]   Indra Ganesan College of Engineering

Abstract

Internet of Things plays major role in the current network scenario. It connects and collaborate with anywhere anything at anyplace through the internet. In future, it will change our living styles. But providing security is the major challenging factor. Currently available security technologies are unable to fulfil the safety requirements of IoT environment. IoT networks needed to ensure confidentiality, authentication, access control and integrity. To provide better security need to understand about the security issues and challenges.

This paper is a general survey of all the security issues existing in the internet of things. This survey focused on various aspects for the identification of security and privacy issues in the current IoT network.

Keywords: Internet of Things (IoT), Security, Privacy, Survey.

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

409. A STUDY ON NETWORK MANAGEMENT IN SOFTWARE DEFINED INTERNET OF THINGS (SDIOT)

Mr.C.Murugesan[1], Moorthi c[2], Sarmila M[3]Associate Professor, Student[2,3] Indra Ganesan College of Engineering

Abstract

With the rapid growth of hi-tech world, the network and its operations are playing the vital role in day to day activities of individuals and organizations. The network users are increasing day by day in a hasty manner. In addition to Internet of Things (IoT) connects more and more devices and supports an ever-growing diversity of applications. The heterogeneity of the devices, unified network management for large scale of the network, information sharing and protecting the information are the main challenges Defined Internet of Things (SDIOT) provides the promising solutions to the traditional networks and also provides a new feature into the networking environment. The integration of SDN architecture into the Internet of Things (SDIOT) is providing an essential controlling the entire network and ensures the efficiency of the large scale network. This paper highlights the key features and open research challenges of various network manageent in SDIOT.

Keywords: Software Defined Network, Internet of Things, Topology, Security.

410. A STUDY ON INVESTORS PREFERENCES TOWARDS MUTUAL FUNDS IN ERODE DISTRICT

Mr.C.Murugesan[1], Moorthi c[2], Kanagaraj k s[3]Associate Professor, Student[2,3] Indra Ganesan College of Engineering
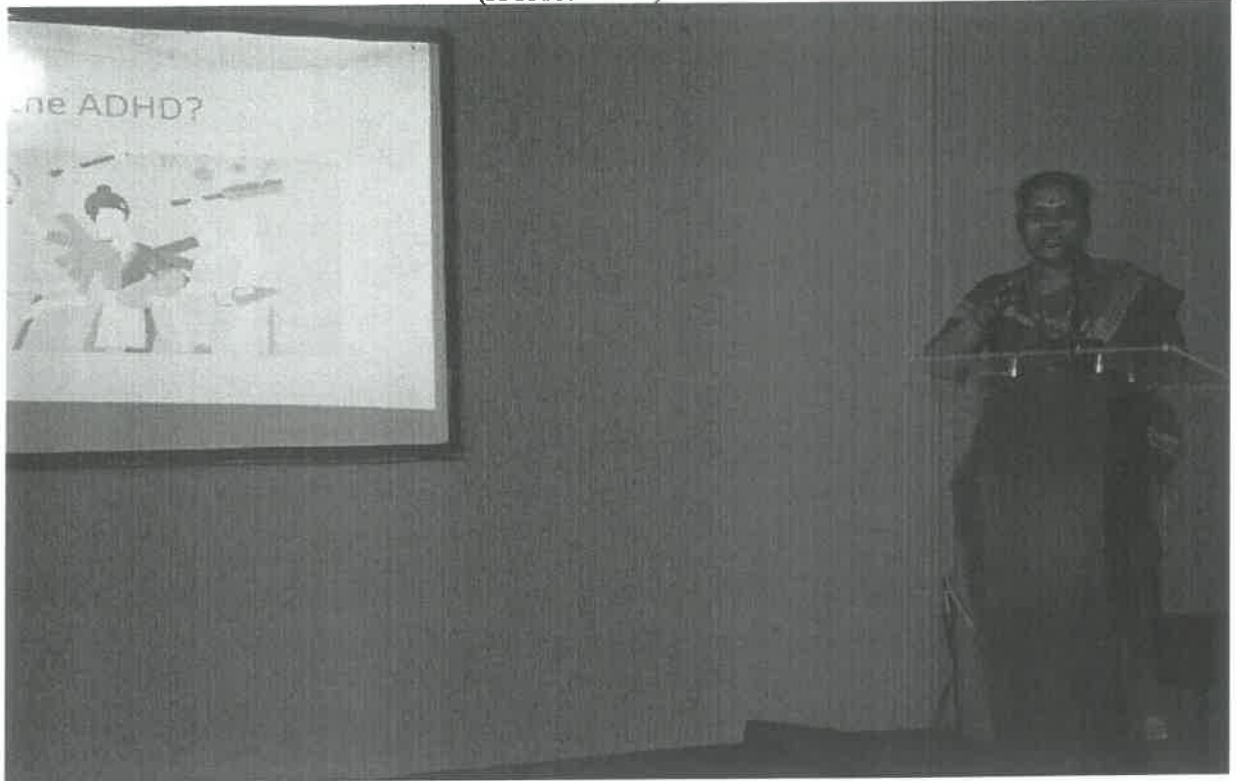
Abstract

Every Investor and every investment is unique. They have their own preferences and features respectively. People save and invest a part of money for their future requirements. There are lots of investment avenues available. So, it is crucial to choose the correct investment, which fulfill the investor's needs and wants. The mutual fund organizations always have a challenge to understand customers. So this study examines the factors influencing the investment behavior, rapid fluctuation among to the convenient sampling method which covered both urban rural part of Erode City. The target population was Erode investors. The sample collected for this study is 150 individual investors. Findings revealed that most of the respondents are interested in post office NSC prefer safety Investment with moderate returns than risky investment with higher return. The investment should have some liquidity in case of emergency. No investment has 0% risk and 100% return.

Keywords: Investment Preferences, Mutual Funds, Safety, Risk-taking Ability

PRINCIPAL
Indra Ganesan College of Engineering
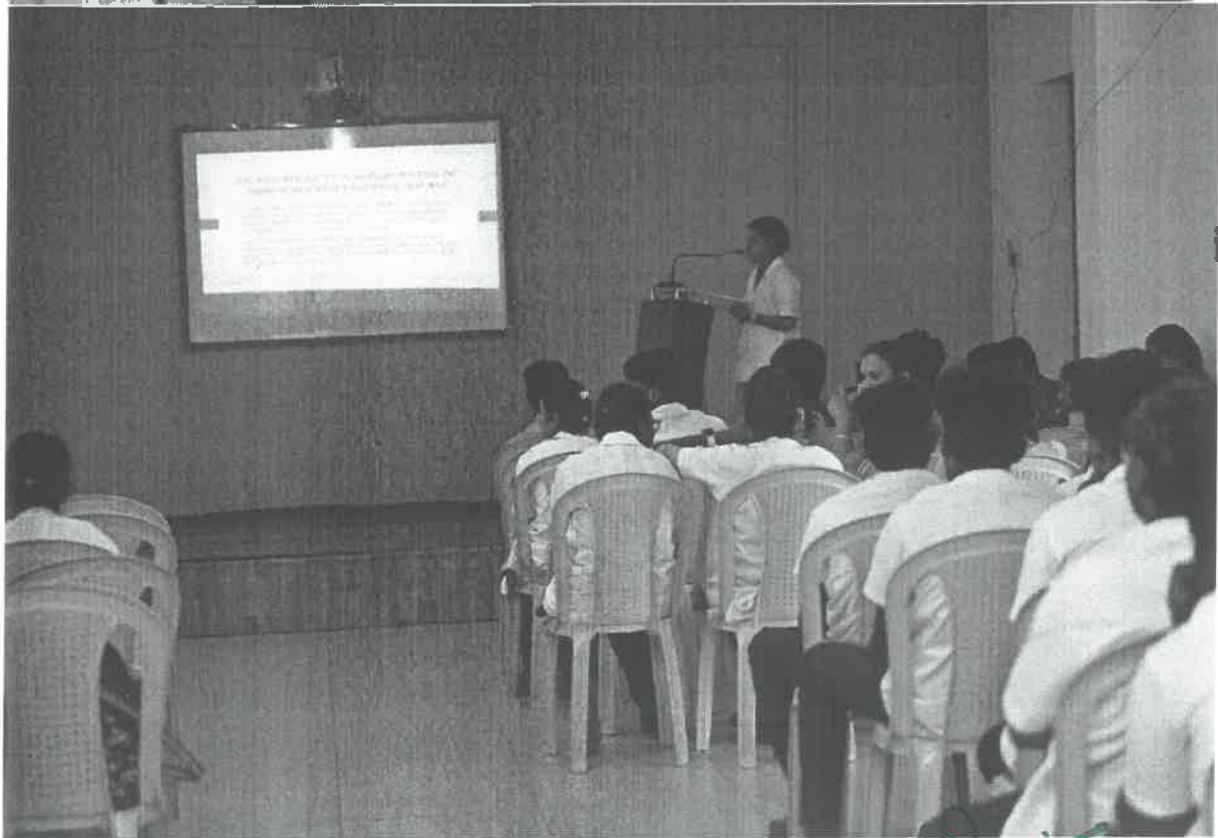IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012

PRINCIPAL
Indra Ganesan College of Engineering
IG Valley, Madurai Main Road
Manikandam, Trichy-620 012