



### CRITERION: 3.3.3

***Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during the year 2023-24***

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6	Screen shots of conference / Book chapter / Book publication MECH	26	101
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Sl. No	Name of the teacher	Title of the paper / Book / Book chapter	Name of the conference / Publisher	ISBN/ ISSN number of the proceeding	Name of the publisher
<b>CIVIL</b>					
1	Dr. R. Saravanan	Airports and Harbours	Lakshmi Publications	978-93-87950-97-9	Lakshmi Publications
2	Dr. R. Saravanan	Experimental Investigation On Reinforced Paver Block Using Weld Mesh And Design Aspect For All Climatic Conditions	International Conference on "Recent Trends in Engineering & Science	978-93-85057-34-2	Centre for Promotion of Research, Kings College of Engineering
3	Mr.K.Arun	Experimental analysis of recycled construction and demolition waste as partial replacement of coarse aggregates in concrete	International Conference on "Recent Trends in Engineering & Science	978-93-85057-34-2	Centre for Promotion of Research, Kings College of Engineering
4	Mr.D.Nandakumar	Study On Effect Of Green Corrosion Inhibitors used In Steel Reinforced Cement Concrete	International Conference on "Recent Trends in Engineering & Science	978-93-85057-34-2	Centre for Promotion of Research, Kings College of Engineering
5	Mr.R.Sundharan	Experimental investigation on partial replacement of cement by seashell powder in concrete	International Conference on "Recent Trends in Engineering & Science	978-93-85057-34-2	Centre for Promotion of Research, Kings College of Engineering
<b>CSE</b>					
6	Dr.S.M. Uma	Framework for Load Balancing Cross- Region task in Cloud Computing	International Conference on "Recent Trends in Engineering & Science	978-93-85057-34-2	Centre for Promotion of Research, Kings College of Engineering
7	Dr.S.M. Uma	Big Data Analytics using Artificial Neural Networks in Cloud Computing	International Conference on "Recent Trends in Engineering & Science	978-93-85057-34-2	Centre for Promotion of Research, Kings College of Engineering
8	Dr.S.M. Uma	Blockchain based on anonymous secure agreement protocol for multi-signature smart grid	International Conference on "Recent Trends in Engineering & Science	978-93-85057-34-2	Centre for Promotion of Research, Kings College of Engineering
9	Dr.S.M. Uma	Efficient Resource Allocation for wireless Routing Protocol	International Conference on "Recent Trends in Engineering & Science	978-93-85057-34-2	Centre for Promotion of Research, Kings College of Engineering
10	Dr. K. Abhirami	ResNet-GAN for Brain Tumor Identification and Classification	International Conference on "Recent Trends in Engineering & Science	978-93-85057-34-2	Centre for Promotion of Research, Kings College of Engineering

11	Dr. K. Abhirami	AI Enhanced resources Optimization Framework for E- Learning Platforms	International Conference on "Recent Trends in Engineering & Science	978-93-85057-34-2	Centre for Promotion of Research, Kings College of Engineering
12	Dr. K. Abhirami	Deep Learning Algorithms Are Used To Detect And Notify About Road Damage	International Conference on "Recent Trends in Engineering & Science	978-93-85057-34-2	Centre for Promotion of Research, Kings College of Engineering
13	Dr. K. Abhirami	AI Enabled Optimal Resources Allocation Model for E-Learning Portal	International Conference on Data Analytics and Intelligence Computing		Velammal Institute of Technology
14	Dr. K. Abhirami	Brain Tumor Classification using Resnet Discriminator	4th International Conference on		St. Joseph College of
15	Dr. K. Abhirami	Electricity Bill prediction using Machine Learning	National Conference on		University College of
16	Ms. S. Puvaneshwari	Smart Disaster Response Drones: Advancing detection, alarm system and payload Deployment with AI	International Conference on "Recent Trends in Engineering & Science	978-93-85057-34-2	Centre for Promotion of Research, Kings College of Engineering
17	Ms. S. Puvaneshwari	Enhanced Parkinson's Disease Detection from Brain MRI through Deep Learning	International Conference on "Recent Trends in Engineering & Science	978-93-85057-34-2	Centre for Promotion of Research, Kings College of Engineering
18	Ms. S. Puvaneshwari	Lung Disease Classification Using XceptionCnn Model	International Conference on "Recent Trends	978-93-85057-34-2	Centre for Promotion of Research, Kings
19	Ms. S. Puvaneshwari	AI Based Disaster Response Drone : Enhancing Human Detection, Alarm Generation	International Conference on Data Analytics		Velammal Institute of Technology
20	Ms. S. Puvaneshwari	Pneumonia Diseases Classification using Xception CNN Model	International Conference On Innovative Research In Engineering Science		Christ The King Engineering College
21	Mr. S. Rajarajan	Automated road hole Visual inspection system utilizing deep learning techniques	Envisin on 5G in AI, IOT & Cloud Computing		Parisutham Institute of Technology & Sciecne
22	Mr. S. Rajarajan	Emission Tracker: Real-time Monitoring and Predictive Analysis of Vehicle Exhaust Emissions for Environmental Sustainability	International Conference on "Recent Trends in Engineering & Science	978-93-85057-34-2	Centre for Promotion of Research, Kings College of Engineering
23	Mr. S. Rajarajan	Privacy-preserving biometric systems: implementing image steganography to secure facial data on printed ID's	International Conference on "Recent Trends in Engineering & Science	978-93-85057-34-2	Centre for Promotion of Research, Kings College of Engineering

24	Mr. S. Rajarajan	End-to-End Deep Convolutional Printed ID Facial Image Steganography	International Conference on Data Analytics and Intelligence		Velammal Institute of Technology
25	Mr. S. Rajarajan	HYBRID ARTIFICIAL INTELLIGENCE BASED VULNERABILITY ANALYSIS IN IOT USING DEEP	National Conference on Contemporary		Research Development Cell
26	Mr. S. Rajarajan	Real Time Monitoring and Prediction of Vehicle Exhaust Emissions using	International Conference On Innovative		Christ The King Engineering College
27	Mr. S. Rajarajan	Stock Prize prediction using AIML	National Conference on Recent Innovation in Engineering and Science		University College of Engineering, Pattukkottai
28	Ms. R. Suganthalakshmi	Revolutionizing Healthcare Security with Blockchain	1st international Conference on Data Analytics and Intelligence Computing-2024		Velammal Institute of Technology
29	Ms. R. Suganthalakshmi	A Blockchain-Based Health Record Security Mechanism	International Conference on "Recent Trends in Engineering & Science	978-93-85057-34-2	Centre for Promotion of Research, Kings College of Engineering
30	Ms. R. Suganthalakshmi	Healthcare Data Security: A Bird's Eye View	International Conference on "Recent Trends in Engineering & Science	978-93-85057-34-2	Centre for Promotion of Research, Kings College of Engineering
31	Ms. R. Suganthalakshmi	A Comparative Analysis Of Parking Solutions In Smart Cities Utilizing Blockchain Technology	International Conference on "Recent Trends in Engineering & Science	978-93-85057-34-2	Centre for Promotion of Research, Kings College of Engineering
32	Ms. R. Suganthalakshmi	Spot On: A Hassle Free Parking Application for Smart Cities using Block chain Technology	International Conference on Data Analytics and Intelligence Computing		Velammal Institute of Technology
33	Ms. R. Suganthalakshmi	Smart IDE Plugins	National Conference on Recent Innovation in Engineering and Science		University College of Engineering, Pattukkottai
34	Mr. M. Arun	Independent Navigation System For Visually Impaired People Using Deep Learning Technique	International Conference on "Recent Trends in Engineering & Science	978-93-85057-34-2	Centre for Promotion of Research, Kings College of Engineering

35	Mr. M. Arun	Enhancing Diabetic Retinopathy And Retinal Detachment Detection Using Swin Transformer-Based Deep Learning Models	International Conference on "Recent Trends in Engineering & Science	978-93-85057-34-2	Centre for Promotion of Research, Kings College of Engineering
36	Mr. M. Arun	Big-Powered Deep Learning System: Revolutionizing Sports Injury Diagnosis	International Conference on "Recent Trends in Engineering & Science	978-93-85057-34-2	Centre for Promotion of Research, Kings College of Engineering
37	Mr. M. Arun	Independent Navigation System for Visually Impaired people using Deep Learning Techniques	4th International Conference on Intellectual Research in Science , Engineering and Management		St. Joseph College of Engineering
38	Mr. M. Arun	Diabetic Retinopathy and Retinal Detachment Disease Detection using SWIN Transformer-based Deep	International Conference on Data Analytics and Intelligence		Velammal Institute of Technology
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41	Ms. N. Dhamayndhi	Optimizing Disease Prediction: A Hybrid Model with Genetic Algorithm Feature Selection	International Conference on "Recent Trends in Engineering &	978-93-85057-34-2	Centre for Promotion of Research, Kings College of
42	Ms. N. Dhamayndhi	DeepPoolAI - An AI based Swimming Pool Lifeguard system	International Conference on Data Analytics and Intelligence		Velammal Institute of Technology
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52	Ms. S. Abikayil Aarthi	Speech Emotion Recognition using Machine Learning Techniques	1st International Conference on Innovation Research in Engineering Sciences		Christ the King Engineering College
53	Ms. S. Abikayil Aarthi	Speech Sensation Acknowledgement by means of Machine Learning	International Conference on "Recent Trends in Engineering & Science	978-93-85057-34-2	Centre for Promotion of Research, Kings College of Engineering
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56	Ms. S. Abikayil Aarthi	Survey on Application of E-Commerce in E-Learning	International Conference on "Recent Trends in Engineering & Science	978-93-85057-34-2	Centre for Promotion of Research, Kings College of Engineering
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74	<i>M.Vidhya, S. M. Uma</i>	Wireless technology (Li-Fi Technology)	International Conference on "Recent Trends in Engineering & Science	978-93-85057-34-2	Centre for Promotion of Research, Kings College of Engineering
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76	<i>S.Puvaneswari K.Abhirami R.Suganthalaks hmi B.Sangeetha D.Mangalambig ai</i>	Prediction of Gas Leakage in Polymer Industries using IOT and Deep learning Techniques	International Conference on "Recent Trends in Engineering & Science	978-93-85057-34-2	Centre for Promotion of Research, Kings College of Engineering
77	Ms. M. Kavitha Dr. S. M. Uma	Blockchain based on anonymous secure agreement protocol for multi-signatures smart grid system	International Conference on "Recent Trends in Engineering & Science	978-93-85057-34-2	Centre for Promotion of Research, Kings College of Engineering
78	<i>K.Abhirami, S.M.Uma, S.Puvaneswari, R. Sugantha Lakshmi D.Mangalambig ai</i>	Diagnosis To Detection Of Diseases Using Medical Image Analysis By Application of Deep Learning Technique	International Conference on "Recent Trends in Engineering & Science	978-93-85057-34-2	Centre for Promotion of Research, Kings College of Engineering



79	D.Mangalambiga ai S.M.Uma K. Abhirami S.Puvaneswari B.Sangeetha	Big Data Analytics Using Artificial Neural Networks in Cloud Gaming	International Conference on "Recent Trends in Engineering & Science	978-93- 85057- 34-2	Centre for Promotion of Research, Kings College of Engineering
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81	Dr. K.Abhirami, Dr. S.M.Uma ,S.Puvaneswari , R.Sugantha Lakshmi D.Mangalambiga i	Diagnosis to detection of disease using medical image analysis by application of Deep learning techniques	International Conference on "Recent Trends in Engineering & Science	978-93- 85057- 34-2	Centre for Promotion of Research, Kings College of Engineering
<b>ECE</b>					
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88	M.Tamilazhahi , J.Thenmozhi ,T .Thiyagalakshm i , T. Thirishamalini , M.Muthulakshm i	AI BASED HOME DEVICE AUTOMATION WITH SMART ENERGY MANAGEMENT SYSTEM FOR PHYSICALLY DISABLED PEOPLES	International Conference on Recent Trends in Engineering and Science (ICRTEs- 2024)	ISBN – 978-93- 85057- 34-2	Kings College of Engineering, Punalkulam

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97	U.Jeyamalar,D.K iruthika	Werable IOT Devices	International Conference on Recent Trends in Engineering and Science (ICRTES- 2024)	ISBN – 978-93- 85057- 34-2	Kings College of Engineering, Punalkulam

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116	Dr. P. Narasimman	Smart Farming Robot for Solar Harvesting: Capable of Identifying and Monitoring Leaf Disease Systems	International Conference on Recent Trends in Engineering and Science (ICRTEES- 2024)	ISBN – 978-93- 85057- 34-2	Kings College of Engineering, Punalkulam
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<b>MECH</b>					
119	S. Sabanayagam, S. Nelson Raja and M. Sakthivel	Oxidation Behavior of Plasma Sprayed IN625 Coating on SS304 for Boiler Environment	International Conference on Emerging Trends in Management, Education, Engineering, Science and Technology (ICEMEEST 2024)	ISBN – 978-81- 965070- 7-7	Indra Ganesan College of Engineering, Trichy
120	M. Vivekananthan, R. Rajadurai and S. Balaganesh	Experimental Investigation of Mechanical and Wear Behavior of Aluminium Alloy 6061 Composites	International Conference on Emerging Trends in Management, Education, Engineering, Science and Technology (ICEMEEST 2024)	ISBN – 978-81- 965070- 7-7	Indra Ganesan College of Engineering, Trichy
121	H. Agilan and, T. Pushparaj	Performance and Emission Characteristics of CI Engine Fueled with Hybrid Biodiesel and 1 Pentanol as an Additive	International Conference on Emerging Trends in Management, Education,	ISBN – 978-81- 965070- 7-7	Indra Ganesan College of Engineering, Trichy

			Engineering, Science and Technology (ICEMEEST 2024)		
122	H. Agilan, T. Pushparaj and S. Sabanayagam	Performance and Emission Characteristics of CI Engine Fueled with Hybrid Biodiesel and 1 Pentanol as an Additive	National Conference on Emerging Trends in Engineering and Technology (ETET 2024)	ISBN – 978-93-91977-49-8	NIT, Puduchery
123	S. Nelson Raja, S. Sabanayagam, M. Sakthivel and R. Rajadurai	Experimental Investigation on Physical and Morphological Properties of Al7075 Reinforced Hybrid Metal Matrix Composites	National Conference on Emerging Trends in Engineering and Technology (ETET 2024)	ISBN – 978-93-91977-49-8	NIT, Puduchery
124	R. Rajadurai, S. Balaganesh and V. Aravind	Optimization of Electric Discharge Machining (EDM) Process Parameters Using Grey Relational Analysis (GRA) for Incoloy 800HT	National Conference on Emerging Trends in Engineering and Technology (ETET 2024)	ISBN – 978-93-91977-49-8	NIT, Puduchery
125	S. Nelson Raja	Optimization of Electric Discharge Machining (EDM) Process Parameters Using Grey Relational Analysis (GRA) for Incoloy 800HT	National Conference on Envision on 5G in AI, IOT & Cloud Computing Applications (Conf Call 2024)	ISBN – 978-81-971735-6-7	Parisutham Institute of Science and Technology, Thanjavur
126	R.Shankar	Characterization of Nicrbsi Coating Super Nickel Metal	International Conference on Recent Trends in Engineering and Science (ICRTES-2024)	ISBN – 978-93-85057-34-2	Kings College of Engineering, Punalkulam
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128	M.Vivekananthan	Experimental Investigation on Physical and Mechanical Characteristics of Siliconnitride (Si3N4) - Titanium Nitride (Tin) Bio Ceramics	International Conference on Recent Trends in Engineering and Science (ICRTES-2024)	ISBN – 978-93-85057-34-2	Kings College of Engineering, Punalkulam
129	Agilan.H	Performance and Emission Characteristic of Hybrid Fuel (Karanja and Juliflora Oil) in CI Engine with 1 Pentanol	International Conference on Recent Trends in Engineering and Science (ICRTES-2024)	ISBN – 978-93-85057-34-2	Kings College of Engineering, Punalkulam

130	Agilan .H	Performance and Emission Characteristic of Hybrid Fuel In CI Engine with 1 Pentanol	International Conference on Recent Trends in Engineering and Science (ICRTE-2024)	ISBN – 978-93-85057-34-2	Kings College of Engineering, Punalkulam
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133	T.Pushparaj	Performance and Emission Study of Anona and Juliflora Biodiesel Blends in Diesel Engine	International Conference on Recent Trends in Engineering and Science (ICRTE-2024)	ISBN – 978-93-85057-34-2	Kings College of Engineering, Punalkulam
134	N.Magesh, M.Melwin Jagadeesh Sridhar	Performance, Combustion and Emission Characteristics of CI Engine by using Pumpkin and Maize Bio Diesel	International Conference on Recent Trends in Engineering and Science (ICRTE-2024)	ISBN – 978-93-85057-34-2	Kings College of Engineering, Punalkulam
135	M.Melwin Jagadeesh Sridhar	Impact of the Sic Addition on the Morphological, Structural & Mechanical Properties of Cu-Sic Composites prepared by PM Route	International Conference on Recent Trends in Engineering and Science (ICRTE-2024)	ISBN – 978-93-85057-34-2	Kings College of Engineering, Punalkulam
136	P.P. Shantharaman	Performance and Emission Characteristics of CI Engine by using Lemongrass and Neem Oil	International Conference on Recent Trends in Engineering and Science (ICRTE-2024)	ISBN – 978-93-85057-34-2	Kings College of Engineering, Punalkulam
137	S.Nelson Raja	Mechanical Properties upgrading over Fusion Deposition Modelling Process Parameter Effect on Polymer Matrix Composites	International Conference on Recent Trends in Engineering and Science (ICRTE-2024)	ISBN – 978-93-85057-34-2	Kings College of Engineering, Punalkulam
138	S. Nelson Raja	Tribology Properties upgrading over Fusion Deposition Modelling Process Parameter Effect on Polymer Matrix Composites	International Conference on Recent Trends in Engineering and Science (ICRTE-2024)	ISBN – 978-93-85057-34-2	Kings College of Engineering, Punalkulam
139	S.Sabanayagam	Designing a Joystick Operated Tricycle for Person With Disability	International Conference on Recent Trends in	ISBN – 978-93-85057-	Kings College of Engineering, Punalkulam

			Engineering and Science (ICRTE-2024)	34-2	
140	M.Vivekananthan	Study on preparation of Al – Sic Metal Matrix Composites using PM technique and its Mechanical Properties	International Conference on Recent Trends in Engineering and Science (ICRTE-2024)	ISBN – 978-93-85057-34-2	Kings College of Engineering, Punalkulam
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<b>S&amp;H</b>					
145	<b>Dr.S.Udayakumar</b>	Patent	EFFICIENT ROOM-TEMPERATURE	02/02/2024	Application No.20244100122 2 A
146	<b>Dr.S.Udayakumar</b>	Patent	PD-LOADED BISMUTH FERRITE (BIFEO3): A PEROVSKITE FOR ACETONE GAS SENSING AND PHOTOCATALYTIC DYE DEGRADATION	08/03/2024	Application No.20244100850 6 A
147	<b>Dr.P.Saravanan</b>	Patent	Ecofriendly materials and sustainable design in electronic	17/05/2024	Application No.20244410363 40 A
148	Dr.V.Sureskumar	Influence of Polythiophene-Beta naphthalein sulphonic acid on corrosion inhibition of mild steel in acid solution	Two day International Conference on "Current Trends in Advanced		Saranathan College of Engineering, Panjapur, Trichy



			Functional Materials (CTAFM-2023)"		
149	<b>Dr.S.Udayakumar</b>	Synthesis and characterization of Mn <sup>2+</sup> doped ZnO Nanorod by simple chemical precipitation Method	Two day International Conference on "Current Trends in Advanced Functional Materials (CTAFM-2023)"		Saranathan College of Engineering, Panjapur, Trichy
150	<b>Dr.P.Saravanan</b>	Effect of chitosan and mordants on the dye adility of silk fabrics with on ecofriendly natural dye from the barkx of urtica dioica L	Two day International Conference on "Current Trends in Advanced Functional Materials (CTAFM-2023)"		Saranathan College of Engineering, Panjapur, Trichy
151	<b>Dr.V.Sureskumar</b>	Biosorption of victoria blue using 2,2,phus onoplia seed modelling studies	International Conference on "Molecular Basics of Cancer and Prevention		Ponnaiyah Ramajayam Institute of Science and Technology (PRIST), Thanjavur
152	<b>Dr.S.Udayakumar</b>	Optical and thermal studies on transition metal ions doped ZnO nanorods by simple precipitation methods	International Conference on "Molecular Basics of Cancer and Prevention		Ponnaiyah Ramajayam Institute of Science and Technology (PRIST), Thanjavur
153	<b>Dr.P.Saravanan</b>	Gc-Ms analysis of phtochemical constituents in ethanolic leaves extract of acalypha indica L	International Conference on "Molecular Basics of Cancer and Prevention		Ponnaiyah Ramajayam Institute of Science and Technology (PRIST), Thanjavur
154	<b>Mrs.T.Gnanajeya</b>	Isomorphism properties on strong nutrosophic graphs	International Conference on "Recent Trends in Mathematics"		Idhya College for Women, Kumbakonam
155	<b>Dr.V.Sureskumar</b>	saffrainin - B dye removal studies using sene galia catechu activated carbon calginate polymeric composite beads	International Conference on "Recent Trends in Engineering, & Science (ICRTES-2024)"	ISBN – 978-93-85057-34-2	Kings College of Engineering during

156	<b>Dr.S.Udayakumar</b>	Optical studies and thermal studies on transition metal ions doped ZnO nanorods by simple chemical precipitation methods	International Conference on "Recent Trends in Engineering, & Science (ICRTE-2024)"	ISBN – 978-93-85057-34-2	Kings College of Engineering during
157	<b>Dr.P.Saravanan</b>	Extraction and applications of ecofriendly natural dye extracted from flowers of tagetes nelsonii on wool fabrics	International Conference on "Recent Trends in Engineering, & Science (ICRTE-2024)"	ISBN – 978-93-85057-34-2	Kings College of Engineering during
158	<b>Dr.V.Vijayalaksmi</b>	Modelling HIV Dyanamics insights in to transmission and intervention strategies	International Conference on "Recent Trends in Engineering, & Science (ICRTE-2024)"	ISBN – 978-93-85057-34-2	Kings College of Engineering during
159	<b>Dr.G.Jeyakrishnan</b>	On decogonal numbers	International Conference on "Recent Trends in Engineering, & Science (ICRTE-2024)"	ISBN – 978-93-85057-34-2	Kings College of Engineering during
160	<b>Dr.G.Sankara Kalidoss</b>	On decogonal numbers	International Conference on "Recent Trends in Engineering, & Science (ICRTE-2024)"	ISBN – 978-93-85057-34-2	Kings College of Engineering during
161	<b>Dr.S.Revathi</b>	strong(weak) triple connected equitable domination number of a fuzzy graph	International Conference on "Recent Trends in Engineering, & Science (ICRTE-2024)"	ISBN – 978-93-85057-34-2	Kings College of Engineering during



**3.3.3 Number of books and chapters in edited volumes/books published and papers published in national/international conference proceedings per teacher during year (2023-2024)**

Sl. No.	Name of the teacher	Title of the book/chapters published	Title of the paper	Title of the proceedings of the conference	Name of the conference	National / International	Year of publication	ISBN/ISSN number of the proceeding	Affiliating Institute at the time of publication	Name of the publisher
<b>CIVIL</b>										
1	Dr. R. Saravanan	Airports and Harbours				National	March 2024	978-93-87950-97-9	Kings College of Engineering	Lakshmi Publications
2	Dr. R. Saravanan		Experimental Investigation On Reinforced Paver Block Using Weld Mesh And Design Aspect For All Climatic Conditions	ICRTES 2024	International Conference on "Recent Trends in Engineering & Science	International	2nd May 2024	978-93-85057-34-2	Kings College of Engineering	Centre for Promotion of Research, Kings College of Engineering

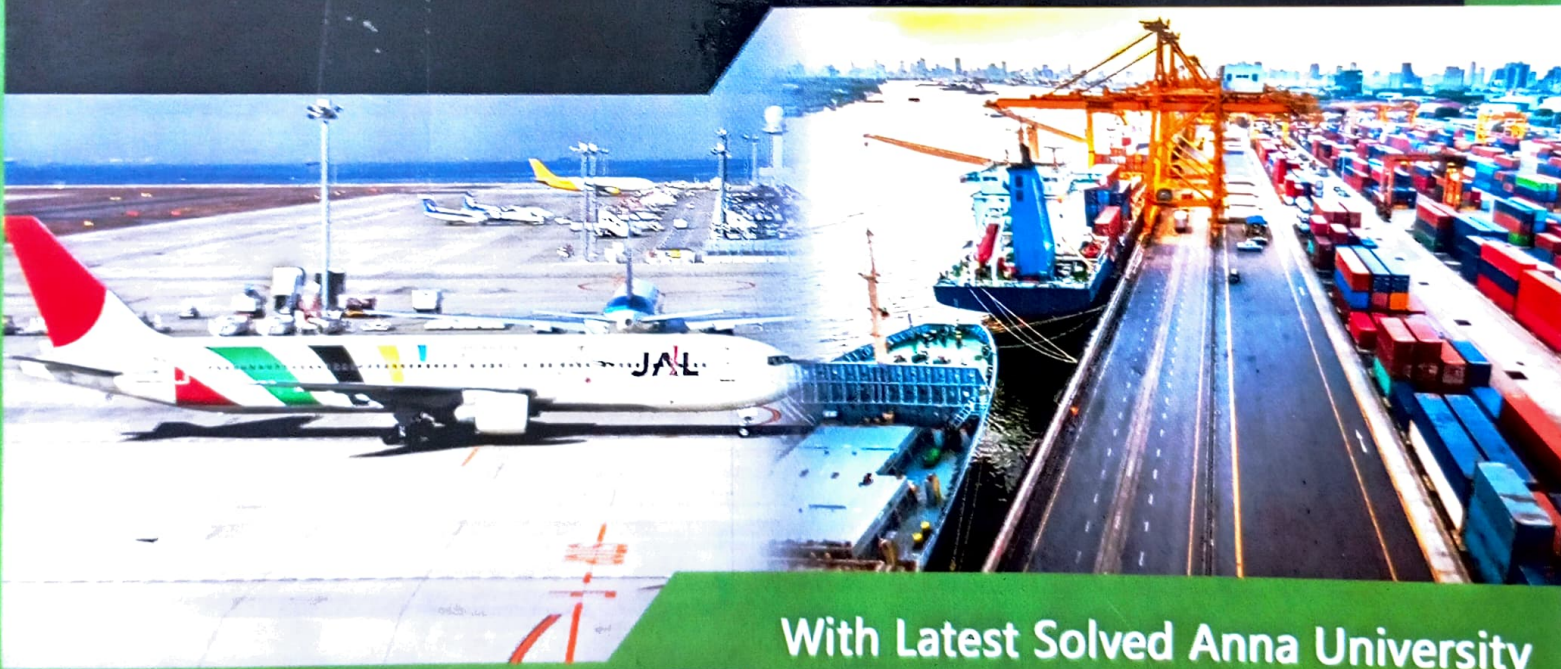
Sl. No.	Name of the teacher	Title of the book/chapters published	Title of the paper	Title of the proceedings of the conference	Name of the conference	National / International	Year of publication	ISBN/ISSN number of the proceeding	Affiliating Institute at the time of publication	Name of the publisher
3	Mr.K.Arun		Experimental analysis of recycled construction and demolition waste as partial replacement of coarse aggregates in concrete	ICRTES 2024	International Conference on "Recent Trends in Engineering & Science	International	2nd May 2024	978-93-85057-34-2	Kings College of Engineering	Centre for Promotion of Research, Kings College of Engineering
4	Mr.D.Nandakumar		Study On Effect Of Green Corrosion Inhibitors used In Steel Reinforced Cement Concrete	ICRTES 2024	International Conference on "Recent Trends in Engineering & Science	International	2nd May 2024	978-93-85057-34-2	Kings College of Engineering	Centre for Promotion of Research, Kings College of Engineering
5	Mr.R.Sundharam		Experimental investigation on partial replacement of cement by seashell powder in concrete	ICRTES 2024	International Conference on "Recent Trends in Engineering & Science	International	2nd May 2024	978-93-85057-34-2	Kings College of Engineering	Centre for Promotion of Research, Kings College of Engineering

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Er. Dinesh Kumar Rangasamy

First Edition: March 2024

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<b>CE2432</b>	<p><b>Sustainability Development In Construction</b></p> <p><i><sup>1</sup>M Kiruthika, <sup>2</sup>S Vijitha, <sup>3</sup>S.Vithyalakshmi, <sup>1,2</sup>2nd year Masters in Architecture, Periyar Maniammal Institute of Science and Technology, Vallam, Thanjavur <sup>3</sup>Assistant Professor, Department of Architecture, Periyar Maniammal Institute of Science and Technology, Vallam, Thanjavur-613 403.</i></p>
<p>This project is based on the development Sustainability in the long-term viability of a community, set of social institutions, or societal practice.general, sustainability is understood as a form of intergenerational ethics in which the environmental and economic actions taken by present persons do not diminish the opportunities of future persons to enjoy similar levels of wealth, utility, or welfare. The idea of sustainable development has been there, ever since human beings started using natural resources for their development.All forms of development, be it economic, educational, technological, agricultural or social, have taken a toll on the consumption of environmental resources.-Sustainable development talks about a development scenario where resources are consumed so that humans needs are not compromised in the present, and resource availability is also ensured for the future. Since the beginning, we have consumed natural resources, but the consumption rate has increased exponentially after the industrial revolution.</p> <p><b>Keywords:</b> <i>Sustainable construction materials-foam concrete-flyash brick-bamboo - rammed earth.</i></p>	
<b>CE2433</b>	<p><b>Experimental Investigation On Reinforced Paver Block Using Weld Mesh And Design Aspect For All Climatic Conditions</b></p> <p><i>K. Dharun Kumar *1, B. Hariharan*2, B. Mohamed Faisal*3, S. Madhavan*4, <b>Dr. R. Saravanan</b>*5</i></p> <p><i><sup>*1234</sup> student, department of civil engineering, kings college of engineering, punalkulam, Pudukkottai <sup>*5</sup>Professor and Head, Department of Civil Engineering, Kings College of Engineering. punalkulam, Pudukkottai</i></p>
<p>In this project, we are experimentally investigating the reinforced paver block design the normal conventional paver block alternative method. The re-designed paver block changes the ordinary thickness and increase the strength. The reinforced paver block takes the time of heat reduction in less in compared to conventional block. Optimize the production material. The ordinary paver block thickness is 100 mm to 150 mm in locally available sizes and is followed by Indian Standard of precast concrete block for paving (IS-15658: 2006). Thickness of paver block. The minimum thickness of paver block is weakness of the bearing strength in vertical load applying. And provide the weld mesh it happened to increase bearing strength with the help of reinforcement. The ordinary conventional paver block such make the difficulties eater the infiltration process in thickness of paver block. This project covered major aspect of concrete mix design as the quality control measure of concrete production, as per the Indian Standard Code IS: 10262-1982. It is aimed at highlighting the importance of reinforced designed concrete as compared to ordinary ratio. The superior interlock system provides the surface stability of the pavement surface. Interlocking concrete</p>	

<p>paving system has several advantages, including resist to freeze-thaw and skid resistance. and people did not focus on it, but over the last 100 years the usage of pavement has been increased widely for vehicular traffic and it is eco-friendly, it does not damage environment. This paver block will be suitable for all climatic conditions like sunny, rainy, and winter season. These are not only used in commercial areas they are also used in industries and residential areas also. Over the last 20 years the concrete blocks were came into usage widely these are segmental blocks of different shapes, Due to this segmental block the Interlocking capacity is increased when it is subjected to heavy traffic load. Concrete paving blocks are ideal materials on Open spaces surrounding residential, public, commercial, &amp; industrial buildings. They are used for the footpaths in the city and walk way in the gardens know a day's paving blocks are also used for light and heavy traffic roads due to their easy laying, better look and finish.</p>	
<p><b>CE2434</b></p>	<p><b>Experimental analysis of recycled construction and demolition waste as partial replacement of coarse aggregates in concrete</b></p> <p><i>Mr.K.Arun*</i>, <i>Bharath.G**</i>, <i>Hariharan.U**</i>, <i>Joshuva.M**</i>, <i>Krishnakant.N**</i>  <i>*Assistant Professor/Civil, **IV Year Civil Students, Department of Civil Engineering, Kings College of Engineering, Punalkulam, Pudukkottai</i></p>
<p>The construction industry uses more resources and produces more waste than any other industrial sector; sustainable development depends on the reduction of both, while providing for a growing global population. The reuse of existing building components could support this goal. The experimental analysis conducted in this study focuses on the utilization of recycled construction and demolition (C&amp;D) waste as a partial replacement for coarse aggregates in concrete. The study aims to investigate the feasibility of incorporating C&amp;D waste into concrete mixes to reduce the demand for natural resources while addressing waste management concerns. Various tests were conducted to evaluate the mechanical properties and workability of concrete mixes containing recycled C&amp;D waste aggregates. In this study we have replaced coarse aggregates with C&amp;D waste in the ratio 10%, 20% &amp; 30 %. The results indicate the potential for achieving comparable performance to conventional concrete mixes, highlighting the viability of utilizing recycled materials in sustainable construction practices.</p> <p><b>Keywords:</b> <i>construction and demolition (C&amp;D) waste, solid waste disposal, eco friendly.</i></p>	
<p><b>CE2435</b></p>	<p><b>Study On Effect Of Green Corrosion Inhibitors used In Steel Reinforced Cement Concrete</b></p> <p><i><sup>1</sup>Jenova Jasmine.N, <sup>2</sup>Sneha.S, <sup>3</sup>Nandakumar.D</i> <sup>1,2</sup> <i>UG Students, Department of civil engineering, Kings college of Engineering</i> <sup>3</sup><i>Assistant professor, Department of civil engineering, Kings college of Engineering</i></p>
<p>Extracts of naturally occurring products contain mixtures of compounds and are biodegradable in nature. These compounds having nitrogen and sulfur as constituent atoms were studied as corrosion inhibitor inHCl medium. Green corrosion inhibitors from plant extracts are cheap, easily available and non-toxic to environment. This</p>	



study is about the Limonia Acidissima plant extract as a green corrosion inhibitor. To know the plant extract characteristics, tests like Ultraviolet visible spectrum (UV), Gas Chromatography Mass Spectrometer (GC-MS), Fourier Transformed Infra Red (FTIR), and X-ray diffraction (XRD) are conducted. This study involves comparing the corrosion inhibition efficiency in Mild steel reinforced concrete cylinder with and without plant extract and the corrosion inhibition in Tor steel reinforced concrete cylinder with and without plant and comparing corrosion inhibition efficiency between inorganic corrosion inhibitor and green corrosion inhibitor in Mild steel and Tor steel. The steel is coated with plant extract and inorganic corrosion inhibitor and dried for one day. The concrete is reinforced with coated steel bars. Then, Half cell potential test and Accelerated corrosion test is conducted on reinforced concrete cylinder. The main scope of this study is to know the corrosion inhibition efficiency of Limonia Acidissima plant extract.

**CE2436**

**Experimental investigation on partial replacement of cement by seashell powder in concrete**

**R.Sundharam<sup>1</sup>, P.Kathireswari<sup>2</sup>, J.Kiruthikasri<sup>3</sup>, J.Niksha<sup>4</sup>**  
*Assistant Professor<sup>1</sup>, UG students<sup>2,3,4</sup>*  
*Kings College of Engineering, Punalkulam, Pudukkottai.*

In this project, the cement is partially replaced by seashell powder in concrete. Seashell powder contains high silicon content and it reacts with alkalis forms high cementitious material. We have used the seashell powder as the partial replacement of cement to reduce the usage of cement .In this era, day by day the waste materials generated in our world. The waste materials are destroying the environment. In other side the production of cement in world has greatly increased, so the co2 emission has been also increased. It will ultimately lead to the environmental pollution. The cement cause the air pollution in form of dust, gases etc. So we have planned to replace the cement by seashell powder as green concrete for sustainable construction. We use M30 grade of concrete for mixing. The fresh concrete properties such as Slump Cone test, Compaction Factor test and mechanical properties of hardened concrete such as Compressive strength, Split tensile strength test conducted on the sample in our laboratory.

**Keywords** – *Cement, seashell powder, cementitious material, environmental pollution, green concrete, compressive strength, split tensile strength.*



### CRITERION: 3.3.3

**Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during the year 2023-24**

Proofs:

Dr. S. M. Uma

1.



2.



Activate Window

3.



4.



5.

*Proceedings of ICRTES-2024  
CPR, Kings College of Engineering, Thanjavur, India, 2-6/3-5, May 2024  
ISBN:978-93-85057-34-2*

<p>Employing a real-time video object detection system, the system utilizes a web camera as the input source and leverages the You Only Look Once (YOLO) model, a CNN-based technique for real-time object detection. This system aims to assist visually impaired individuals by providing audio or haptic feedback on the objects present in their surroundings, ultimately enhancing their safety and fostering greater independence in daily life.</p> <p><b>Keywords:</b> <i>Deep Learning, YOLO, CNN</i></p>	
<b>CS2424</b>	<p><b>HANDS THAT SPEAK: REFLECTIONS FROM THE SIGN LANGUAGE</b></p> <p><i>D.Mangalambikai, D.Deepak Kumar, G.Krishnakumar, K.Rajkumar, M.Sarjaprasad</i></p> <p><i><sup>1</sup>Department of Computer Science and Engineering, Kings College of Engineering, Panakkal, Pudukkottai, Tamil Nadu, India</i></p>
<p>Sign language is the only tool of communication for the person who are not able to speak and hear anything. This project aims to develop a sign language interpreter system using machine learning techniques. The system will capture hand gestures and movements through a camera and translate them into text. Machine learning algorithms are used to recognize and classify the hand gestures and movements, which will be mapped to corresponding words or phrases. The project will involve collecting and annotating a large dataset of sign language gestures, training and fine-tuning a deep learning model, and building a user-friendly interface for the interpreter system.</p> <p><b>Keywords :</b> <i>Machine Learning, Hand Sign Recognition, Image Processing</i></p>	
<b>CS2425</b>	<p><b>RESNET-GAN FOR BRAIN TUMOR IDENTIFICATION AND CLASSIFICATION</b></p> <p><i>KAbhirami,S.Elamaran, B.Harish,S.Thirumurugan,M.Muruguraj</i></p> <p><i>Department of Computer Science and Engineering, Kings College of Engineering, Panakkal, Pudukkottai, Tamil Nadu, India</i></p>
<p>Adversarial training in the context of a Generative Adversarial Network (GAN) involves two neural networks - a generator and a discriminator - competing against each other in a minimax game. The generator aims to produce realistic synthetic data samples (in this case, brain tumor images) that are indistinguishable from real data, while the discriminator aims to accurately distinguish between real and generated data. During training, the generator learns to generate increasingly realistic samples by minimizing the probability of the discriminator correctly classifying its outputs as fake. Simultaneously, the discriminator learns to better distinguish between real and</p>	

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6.

*Proceedings of ICRTES-2024  
CPR, Kings College of Engineering, Thanjavur, India, 2-6/3-5, May 2024  
ISBN:978-93-85057-34-2*

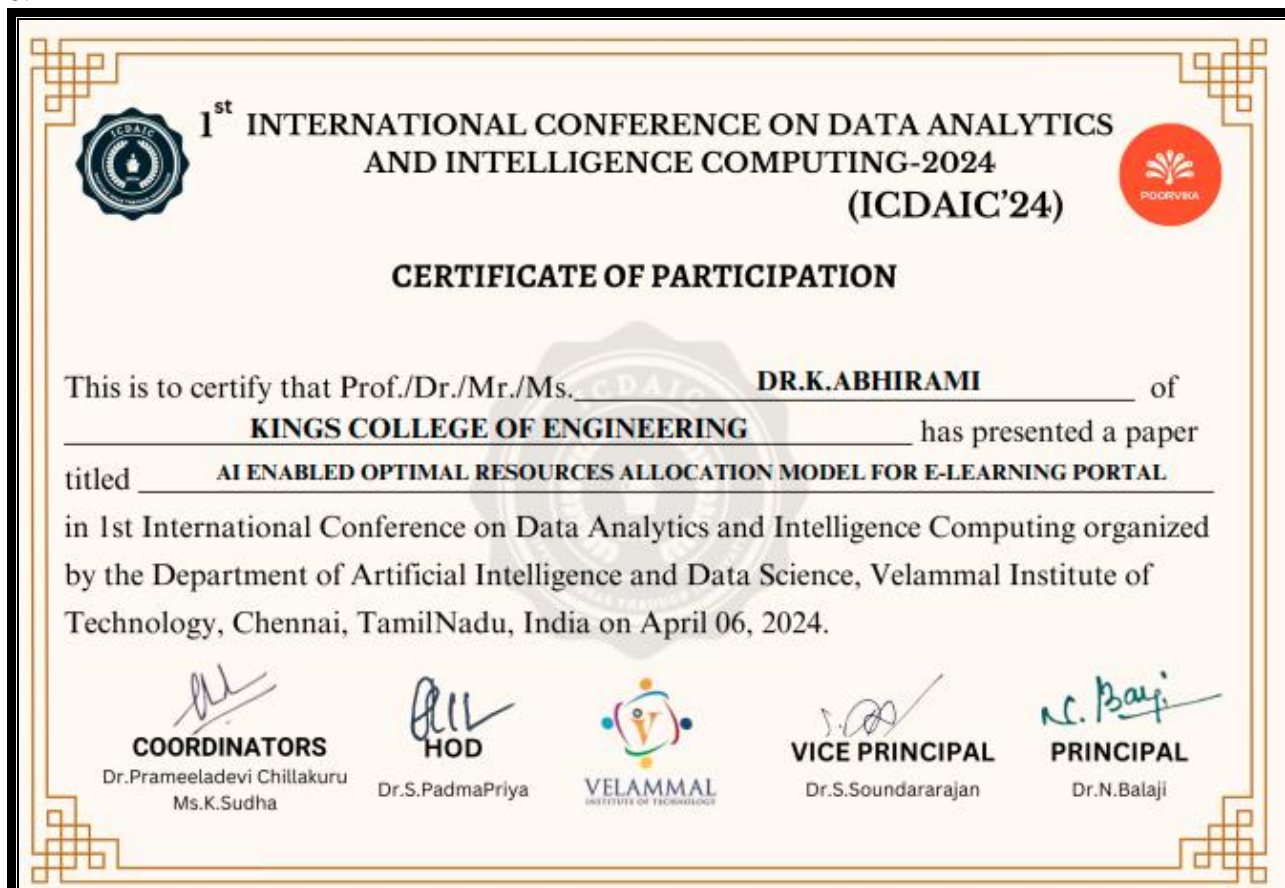
<b>CS2460</b>	<p><b>ENHANCED RESOURCES OPTIMIZATION FRAMEWORK</b></p> <p><i>K.Abhirami, J.Lavanya, D.Parkavi, M.Vinithya</i></p> <p><i><sup>1</sup>Department of Computer Science and Engineering, Kings College of Engineering, Pudukkottai, Tamil Nadu, India</i></p>
<p>We propose an advanced AI-driven solution to revolutionize resource allocation in learning platforms, enhancing both efficiency and user satisfaction while minimizing costs. Traditional methods struggle to adapt dynamically to fluctuating demands for servers, bandwidth, and instructor availability. Our model leverages cutting-edge machine learning and reinforcement learning techniques, empowered by historical data, to make real-time allocation decisions. By continuously analyzing user behaviors and content demands, our model optimizes the distribution of computing power, bandwidth, and content delivery resources. Scalability is a core focus, allowing our solution to seamlessly accommodate growing numbers of users without compromising performance. We utilize Hazel cast's distributed computing capabilities to maintain real-time information on server availability and load, ensuring that resources are allocated efficiently across the e-learning platform. We use The IP hash function for load balancing in an e-learning portal distributes incoming client requests across servers based on their source IP addresses, ensuring consistent routing for each client session and optimizing resource utilization. Content Delivery Network (CDN) is used in an e-learning portal to efficiently distribute content such as audio, video and video description to users across different geographic locations. Our approach undergoes rigorous testing and validation in a controlled e-learning environment to ensure its effectiveness.</p> <p><b>Keywords:</b> <i>Resource allocation, Load Balancing, E-learning, IP</i></p>	

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8.



9.

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**4<sup>TH</sup> INTERNATIONAL CONFERENCE ON INTELLECTUAL RESEARCH IN SCIENCE, ENGINEERING AND MANAGEMENT (ICIRSEM 2024)**

*Certificate of Participation*

This is to certify that Dr. / Mr. / Ms. Dr. K. Abhirami AP/ CSE  
(Faculty / Student / Research Scholar) of Computer Science and Engineering  
Kings College of Engineering, Punalkulam has presented a paper entitled  
Brain Tumor Classification using Resnet Discriminator  
in the 4<sup>th</sup> International Conference on Intellectual Research in Science, Engineering and Management (ICIRSEM 2024) held on 24<sup>th</sup> April 2024.

 Convener  
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This is to certify that Dr./Mr./Ms. K. ABHIRAMI of  
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ELECTRICITY BILL PREDICTION USING MACHINE LEARNING in the  
**National Conference on Recent Innovations in Engineering and Science (NCORIES'2K24)**  
on 27<sup>th</sup> May 2024.

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11.

Ms. S. Puvaneshwari

*Proceedings of ICRTES-2024  
CPR, Kings College of Engineering, Thanjavur, India, 2-4 May 2024  
ISBN:978-93-85057-34-2*

<b>CS2421</b>	<p><b>SMART DISASTER RESPONSE DRONES: ADVANCING DETECTION, ALARM SYSTEM AND PAYLOAD DEPLOYMENT WITH AI</b></p> <p style="text-align: center;"><i>S.Puvaneshwari,S.Reema,R.Sathyu,A.Selvapriya</i></p> <p style="text-align: center;"><i>Department of Computer Science and Engineering, Kings College of Engineering, Pudukkottai, Tamil Nadu, India</i></p>
<p>Amidst increasing natural disasters and humanitarian crises, technology plays a crucial role in emergency response. Drones offer enhanced human identification, realtime warning generation, and efficient payload delivery, seamlessly integrating with existing disaster response frameworks. Their ability to deliver emergency supplies and medical payloads is vital, navigating through challenging terrain with precision using autonomous navigation, obstacle avoidance, and mapping technology. Drones adapt dynamically to changing conditions, ensuring effectiveness in various scenarios. Centralized operation via a remote control center enables efficient monitoring and management of multiple drones simultaneously. Employing deep learning and real-time processing enhances situational awareness, supporting disaster management, surveillance, and search and rescue efforts. Equipped with advanced AI algorithms and computer vision systems, drones analyze the environment, identify human presence, track movements, and even employ the Grassmann algorithm for facial feature detection.</p>	
<b>CS2422</b>	<p><b>REVOLUTIONIZING ROAD MAINTENANCE: UAV-ENABLED AUTOMATED DAMAGE DETECTION WITH DEEP LEARNING</b></p> <p style="text-align: center;"><i>M.Kavitha,V.Bharatharasi,J.Geetha,S.Nandhini</i></p> <p style="text-align: center;"><i>Department of Computer Science and Engineering, Kings College of Engineering, Pudukkottai, Pudukkottai</i></p>
<p>One of the main challenges in automated road damage detection is the large volume of data generated by UAV imagery, requiring efficient processing and analysis methods. Deep learning algorithms offer a scalable solution to this challenge, enabling rapid analysis of large datasets and real-time detection of road damage. Furthermore, the use of UAVs allows for comprehensive coverage of road networks, including remote and inaccessible areas, which may be difficult to monitor using traditional methods. Automated road damage detection using Unmanned Aerial Vehicle (UAV) images and deep learning techniques has emerged as a promising approach for efficiently monitoring and maintaining road infrastructure. The combination of UAV technology and deep learning algorithms enables rapid and accurate identification of various types</p>	

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*Proceedings of ICRTES-2024  
CPE, Kings College of Engineering, Thanjavur, India, 2-6/3-5, May 2024  
ISBN-978-93-85057-34-2*

<b>CS2454</b>	<b>LUNG DISEASE CLASSIFICATION USING XCEPTION CNN MODEL</b> S. Puvanewari <sup>1</sup> , J. Ansha <sup>2</sup> , K. Deepika <sup>2</sup> , K. Jayavani <sup>2</sup> <sup>1</sup> Department of Computer Science and Engineering, Kings College of Engineering, Panakkalam, Pudukkottai, Tamil Nadu, India
<p>Pneumonia is a prevalent and potentially life-threatening respiratory infection that affects millions of people worldwide each year. Early and accurate diagnosis of pneumonia is crucial for timely treatment and better patient outcomes. With the advancements in deep learning and convolutional neural networks (CNN's), computer-aided diagnosis systems have shown promising results in automating the detection of pneumonia from medical images, particularly chest X-rays. In this study, we propose a novel approach for pneumonia disease classification utilizing the Xception CNN model. Xception is a state-of-the-art CNN architecture that has demonstrated superior performance in various image recognition tasks. We employ transfer learning techniques to fine-tune the pre-trained Xception model on a large dataset of chest X-ray images to effectively learn discriminative features for pneumonia classification. The dataset used in this study comprises labeled chest X-ray images of both pneumonia-positive and pneumonia-negative cases. We preprocess the images and augment the dataset to improve the model's generalization ability and robustness. The fine-tuned Xception model is trained using a deep learning framework, and its performance is evaluated using standard metrics such as accuracy, precision, recall, and F1-score. Our experimental results demonstrate the effectiveness of the proposed Xception CNN model for pneumonia classification. The model achieves high accuracy and outperforms baseline methods, indicating its potential for accurate and reliable pneumonia diagnosis. Moreover, we conduct comparative analyses with other CNN architectures to validate the superiority of Xception in this medical imaging task.</p>	
<b>CS2455</b>	<b>HANDS THAT SPEAK: REFLECTIONS FROM THE SIGN LANGUAGE</b> D. Mangalambigai, D. Deepak kumar, G. Krishnakumar, K. Rajkumar, M. Suriyaprakash <sup>1</sup> Department of Computer Science and Engineering, Kings College of Engineering, Panakkalam, Pudukkottai, Tamil Nadu, India
<p>Sign language is the only tool of communication for the person who are not able to speak and hear anything. This project aims to develop a sign language interpreter system using machine learning techniques. The system will capture hand gestures and movements through a camera and translate them into text. Machine learning algorithms are used to recognize and classify the hand gestures and movements, which will be mapped to corresponding words or phrases. The project will involve collecting and annotating a large dataset of sign language gestures, training and fine-tuning a deep learning model, and building a user-friendly interface for the interpreter system.</p> <p><b>Keywords:</b> Machine Learning, Hand Sign Recognition, Image Processing</p>	

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Mr.S. Rajarajan



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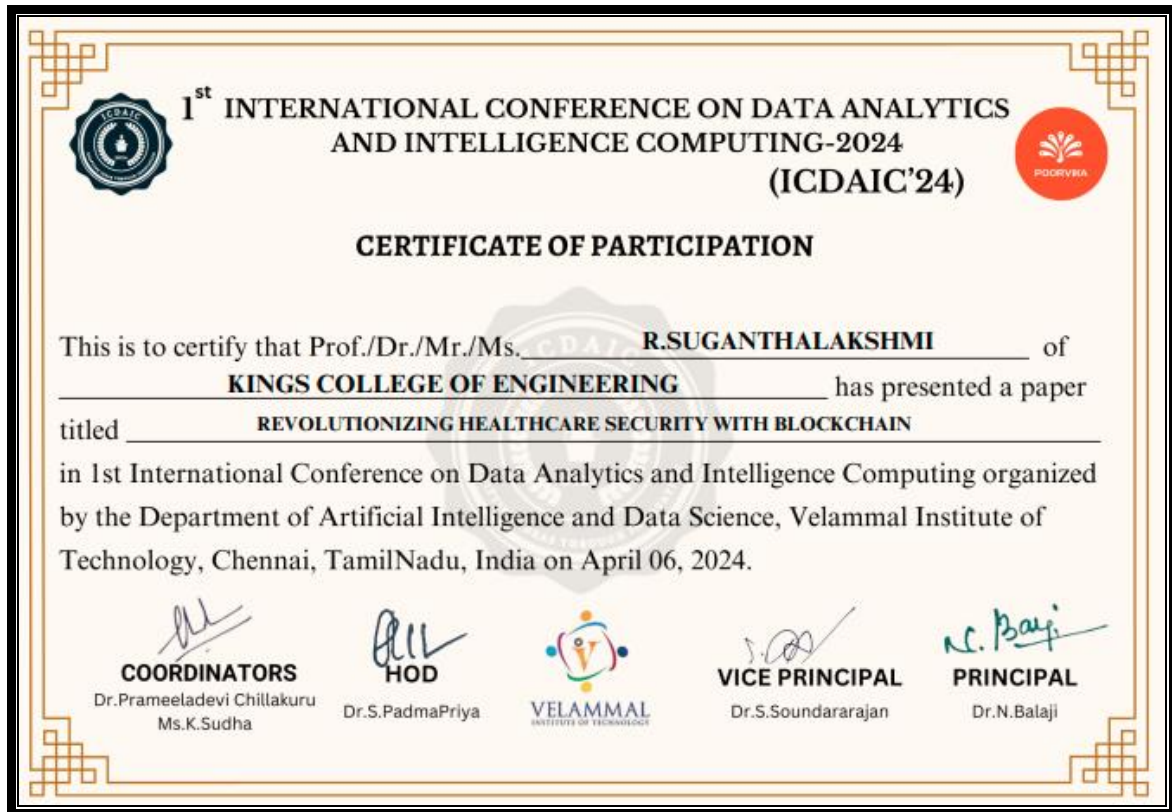


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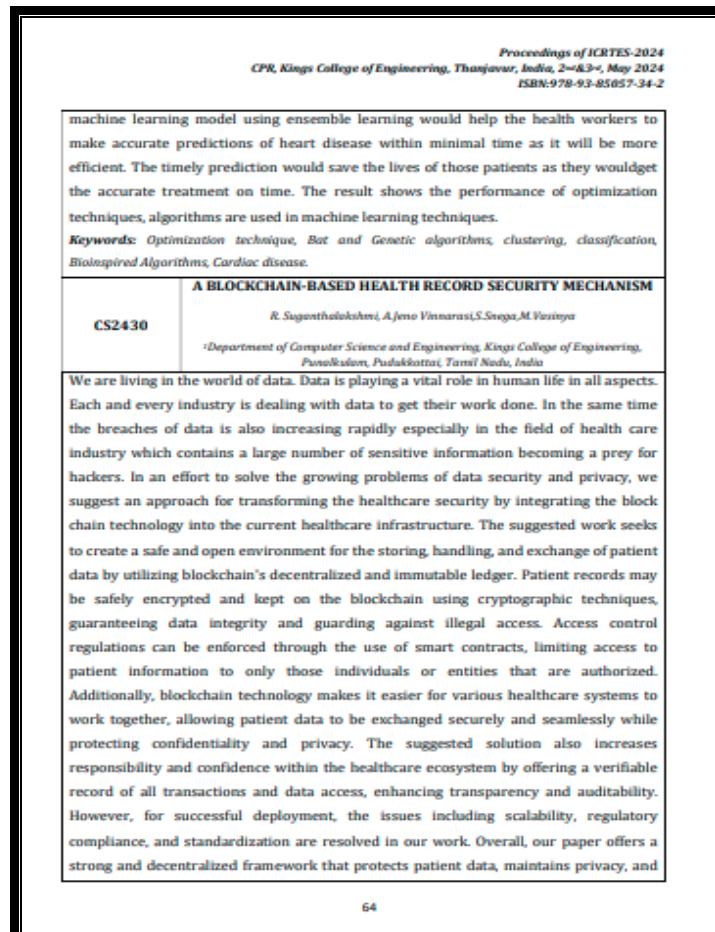


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Ms.R.Suganthalakshmi



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empowers decision-makers to implement timely interventions, contributing to cleaner air quality and enhanced public health.

CS2434	<p><b>HEALTHCARE DATA SECURITY: A BIRD'S EYE VIEW</b></p> <p><i>Mr. R. Suganthakshemi, Dr. R. Eugene, Dr. R. Dinesh</i></p> <p><i>1 Ph.D., Suganthakshemi, Dr. R. Eugene, Dr. R. Dinesh</i>  <i>2 Ph.D., Suganthakshemi, Dr. R. Eugene, Dr. R. Dinesh</i>  <i>3 Ph.D., Suganthakshemi, Dr. R. Eugene, Dr. R. Dinesh</i></p>
	<p><i>Department of Computer Science and Engineering, Kings College of Engineering, Pudukkottai</i></p>

data is the heartbeat of the modern world, pulsating through every aspect of our lives, with unparalleled significance. It's not merely a collection of numbers and characters; rather, it's the lifeblood that fuels innovation, drives decision-making, and shapes the trajectory of human progress. In our interconnected global society, data serves as the

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*Proceedings of ICRTES-2024*  
*CPR, Kings College of Engineering, Thanjavur, India, 2<sup>nd</sup>-6<sup>th</sup>, May 2024*  
*ISBN:978-93-85057-34-2*

foundation upon which businesses thrive, governments govern, and individuals navigate their daily lives. From the moment we wake up to the moment we sleep, we are immersed in a sea of data, constantly generating, consuming, and leveraging information to inform our actions and shape our understanding of the world. As we navigate the complexities of the digital age, we come to know that, "Data protection is not optional, it's essential". Failing to adequately protect data can have serious consequences for individuals, organizations, and society as a whole. Applications using data is playing a remarkable role in the advancement of many fields such as healthcare, smart grids, supply chain management, etc. As a result, many challenges and problems arise such as security, authenticity, reliability, and scalability. Based on that and taking into account the anticipated evolution of the data usage, it is extremely vital not only to maintain but to increase confidence in and reliance on crucial systems by tackling the aforementioned issues. In the healthcare sector, electronic health records (EHRs) contain one of the most important pieces of information in the world (sensitive patient data). This, in turn, makes them a tempting target to hackers. The healthcare industry is facing a difficult challenge in protecting confidential patient information through data security. In the past, it was fairly easy to protect patient data and keep it secure because the information was recorded on paper and locked in filing cabinets. However today, due to the advances in technology and the digital age, patient records are now stored electronically on computers, servers, and storage devices. With electronic records come increased risks of data breaches, malware, viruses, and other malicious attacks. Today, nurses, doctors, and other healthcare professionals rely on technologies, such as computers and tablets, to access, update, and record patient data. Data may also be shared between multiple facilities and healthcare providers. As such, better healthcare data security solutions are needed to help reduce the risks of malicious data attacks or technical failures.

*Keywords:* Data protection, Electronic health records, Data security, Data breaches.

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*Proceedings of ICRTES-2024*  
*CPR, Kings College of Engineering, Thanjavur, India, 2<sup>nd</sup>-6<sup>th</sup>, May 2024*  
*ISBN:978-93-85057-34-2*

CS2456	<p><b>A COMPARATIVE ANALYSIS OF PARKING SOLUTIONS IN SMART CITIES UTILIZING BLOCKCHAIN TECHNOLOGY</b></p> <p><i>R. Suganthakshemi, S. Mohammed Shamer, S. Sarvesh, S. Dinesh, D. Gahan</i></p> <p><i>Department of Computer Science and Engineering, Kings College of Engineering, Pudukkottai, Tamil Nadu, India</i></p>
	<p>In today's scenario, the vehicle is not just a mode of transportation; it has become an essential extension of human capability and freedom. Owing a vehicle comes with its own set of challenges from maintenance woes to navigating through traffic. Another important struggle with vehicle is its parking which is a universal inconvenience, where finding a spot becomes a quest and navigating tight spaces can test one's patience. Yet, it's a testament to the sheer demand for mobility and convenience in our modern world. In order to overcome the above-mentioned problems, we propose a hassle-free integrated smart parking system which address the major issues of parking, traffic congestion in crowded cities which in turn helps us in the reduction of air pollution. Our proposed system not only reduces the time, drivers spend searching for parking also protects their sensitive information from privacy breaches during transactions. By integrating blockchain technology into smart parking systems evolutionizes the way we manage parking spaces. Through blockchain decentralized ledger and smart contracts, we create a transparent and secure platform for reserving, accessing, and paying for parking spots. This not only optimizes parking space utilization but also enhances the overall user experience by providing real-time availability updates and seamless transactions, ultimately leading to more efficient urban mobility. By implementing a parking system with blockchain technology offers a promising solution to the challenges of traditional parking management and this innovative approach we propose not only enhances user experience but also minimizes fraud and maximizes utilization of parking resources.</p>

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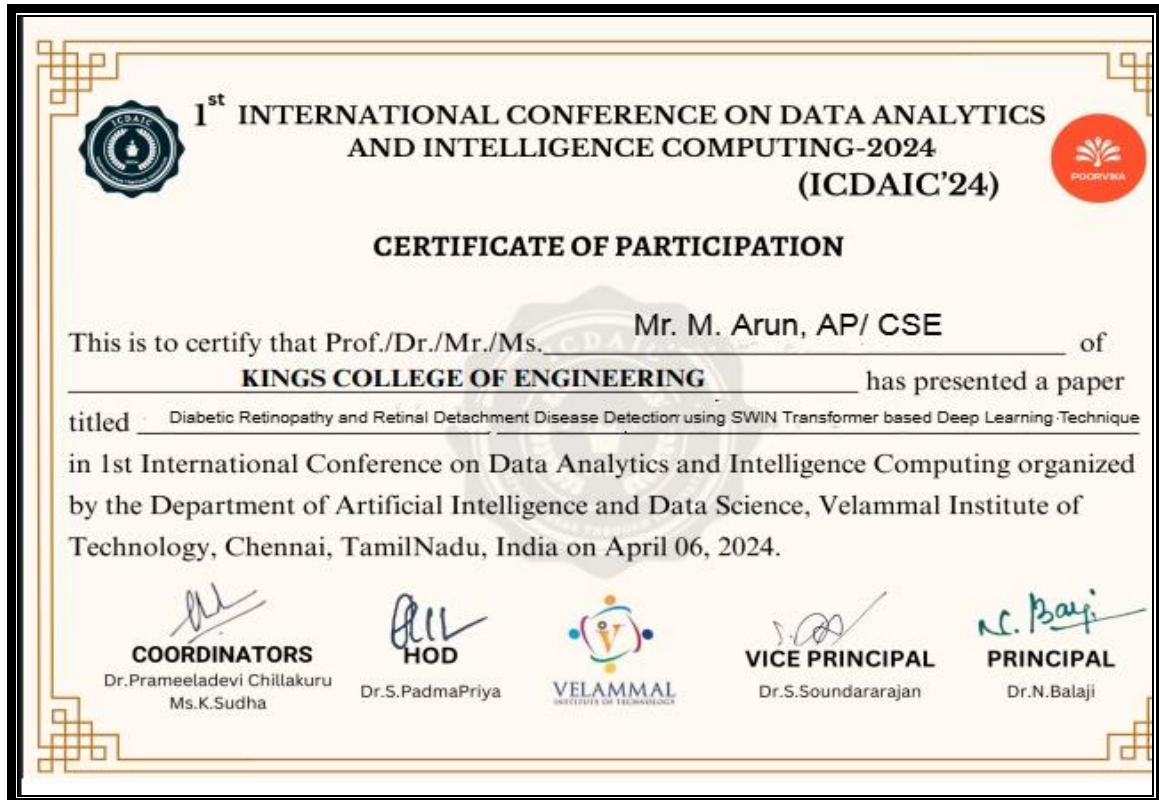
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Ms.N.Dhamavandhi



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Ms.B.Bavithra



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Ms.S. Abikayil Aarthi





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**ABIKAYIL AARTHI**, ASSISTANT PROFESSOR, COMPUTER SCIENCE AND ENGINEERING , HAS PRESENTED A PAPER ENTITLED '**SPEECH EMOTION RECOGNITION USING MACHINE LEARNING**' FROM **KINGS COLLEGE OF ENGINEERING** AT THE FIRST INTERNATIONAL CONFERENCE ON INNOVATIVE RESEARCH IN ENGINEERING SCIENCE HELD AT CHRIST THE KING ENGINEERING COLLEGE ON 10.04.2024.

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of Kings college of Engineering, Pudukkottai for  
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in the International Conference on Recent Trends in Engineering & Science (ICRTES-2024) on 2<sup>nd</sup> & 3<sup>rd</sup> May 2024, organized by the Centre for Promotion of Research (CPR), Kings College of Engineering, Pudukkottai.

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Ms.B. Sangeetha

*Proceedings of ICRTES-2024  
CPR, Kings College of Engineering, Thanjavur, India, 2-4<sup>th</sup> May 2024  
ISBN:978-93-85057-34-2*

improving patient outcomes. This research contributes to the advancement of computer-aided diagnosis systems in ophthalmology and paves the way for the development of scalable and efficient healthcare solutions.

**Keywords:** Deep Learning, Swin Transformer

<b>CS2427</b>	<b>FRAMEWORK FOR LOAD BALANCING CROSS- REGION TASK IN CLOUD COMPUTING</b>  <i>B.Sangeetha, S.M.Usha, K.Abhirami, S.Prasanna<sup>a</sup>, R.Suganthalakshmi</i> <i>Department of Computer Science and Engineering, Kings College of Engineering, Punalakulam, Pudukkottai.</i>
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Finding overloaded and under loaded nodes and distributing the load among them is known as load balancing. Researchers proposed a variety of load balancing strategies to optimize different cloud computing performance metrics. Cloud computing is one of the newest technological solutions for end users and service providers alike, allowing them to store and access data and services offered by many service providers across different areas over a network. The pandemic is causing an increase in the amount of data, and there has also been a noticeable rise in internet usage. algorithms and methods available to control load balancing in cloud services. This study introduces a recently proposed database-level load balancing technique for cloud computing. Businesses of all sizes commonly use database cloud services for business process and application development. Distributed applications that use load balancing can maintain an effective job scheduling process that satisfies user expectations and maximizes resource consumption. The act of spreading the load over multiple nodes to make sure that no one The node is too busy. The load balancer distributes an equal amount of processing time among all nodes in order to prevent the nodes from becoming overwhelmed. The outcomes of two distinct scenarios demonstrated how load balancer choices made on application traffic gateways might control traffic across regions and significantly increase restaurant income.

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## Certificate of Participation

This Certificate is awarded to B. SANGEETHA, AP  
of Kings College of Engineering - Punalakulam for  
presenting a paper titled A Deep Learning Innovations for  
Currency Recognition in the Visually Impaired  
in the **International Conference on Recent Trends in Engineering & Science (ICRTES-2024)** on 2<sup>nd</sup> & 3<sup>rd</sup> May 2024, organized by the Centre for Promotion of Research (CPR), Kings College of Engineering, Pudukkottai.

  
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 Dr.S.Sivakumar



  
**Conference Chair**  
 Dr.J.Arputha Vijaya Selvi

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**1<sup>st</sup> INTERNATIONAL CONFERENCE ON DATA ANALYTICS  
AND INTELLIGENCE COMPUTING-2024  
(ICDAIC'24)**



**CERTIFICATE OF PARTICIPATION**

This is to certify that Prof./Dr./Mr./Ms. Ms.B. Sangeetha, AP/ CSE of KINGS COLLEGE OF ENGINEERING has presented a paper titled A Deep Learning Approach to Currency recognition for the visually impaired people in 1st International Conference on Data Analytics and Intelligence Computing organized by the Department of Artificial Intelligence and Data Science, Velammal Institute of Technology, Chennai, TamilNadu, India on April 06, 2024.

  
**COORDINATORS**  
 Dr.Prameeladevi Chillakuru  
 Ms.K.Sudha

  
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 Dr.S.PadmaPriya

  
**VELAMMAL**  
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56.

**Ms.D.Mangalambigai**

Proceedings of ICRITES-2024  
CPE, Kings College of Engineering, Thanjavur, India, 2-6/3-4, May 2024  
ISBN:978-93-85057-34-2

Employing a real-time video object detection system, the system utilizes a web camera as the input source and leverages the You Only Look Once (YOLO) model, a CNN-based technique for real-time object detection. This system aims to assist visually impaired individuals by providing audio or haptic feedback on the objects present in their surroundings, ultimately enhancing their safety and fostering greater independence in daily life.

**Keywords:** *Deep Learning, YOLO, CNN*

<b>CS2424</b>	<p style="text-align: center; font-weight: bold; font-size: small;">HANDS THAT SPEAK: REFLECTIONS FROM THE SIGN LANGUAGE</p> <p style="font-size: x-small;"><i>D.Mangalambigai, D.Deepak Kumar, G.Krishnakumar, K.Rajkumar, M.Sariyaprasath</i></p> <p style="font-size: x-small;"><i><sup>1</sup>Department of Computer Science and Engineering, Kings College of Engineering, Panakkulam, Padakkottai, Tamil Nadu, India</i></p>
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Sign language is the only tool of communication for the person who are not able to speak and hear anything. This project aims to develop a sign language interpreter system using machine learning techniques. The system will capture hand gestures and movements through a camera and translate them into text. Machine learning algorithms are used to recognize and classify the hand gestures and movements, which will be mapped to corresponding words or phrases. The project will involve collecting and annotating a large dataset of sign language gestures, training and fine-tuning a deep learning model, and building a user-friendly interface for the interpreter system.

**Keywords :** *Machine Learning, Hand Sign Recognition, Image Processing*

<b>CS2425</b>	<p style="text-align: center; font-weight: bold; font-size: small;">RESNET-GAN FOR BRAIN TUMOR IDENTIFICATION AND CLASSIFICATION</p> <p style="font-size: x-small;"><i>K.Abhivran<sup>1</sup>,S.Elamaran, B.Harish,S.Thirumurugan,M.Murugaranj</i></p> <p style="font-size: x-small;"><i><sup>1</sup>Department of Computer Science and Engineering, Kings College of Engineering, Panakkulam, Padakkottai, Tamil Nadu, India</i></p>
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Adversarial training in the context of a Generative Adversarial Network (GAN) involves two neural networks - a generator and a discriminator - competing against each other in a minimax game. The generator aims to produce realistic synthetic data samples (in this case, brain tumor images) that are indistinguishable from real data, while the discriminator aims to accurately distinguish between real and generated data. During training, the generator learns to generate increasingly realistic samples by minimizing the probability of the discriminator correctly classifying its outputs as fake. Simultaneously, the discriminator learns to better distinguish between real and

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Proceedings of ICRTE-2024  
CPR, Kings College of Engineering, Thanjavur, India, 2-4/3-5, May 2024  
ISBN:978-93-85057-34-2

CS2443	<p style="text-align: center;"><b>A ROBUST SOLUTION FOR IMAGE TEMPERING DETECTION WITH LOSSLESS AUTO-RECOVERY USING INVERTIBLE NEURAL NETWORK</b></p> <p style="text-align: center; font-size: small;">D Mangalambigai, S. Vijay, K. Thiramaragan, C. Rajeshkannan, R. Dineshkumar Department of Computer Science, Kings College of Engineering, Punalkulam</p>
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Digital images are susceptible to a range of vulnerabilities and threats that can compromise security and privacy in online social networking sites. Image tampering attacks involve the unauthorized or deceptive alteration of digital images, often for the purpose of misrepresenting their content or context. Once the images are manipulated, it is hard for current techniques to reproduce the original contents. To address these challenges and combat image tampering, research on image tamper localization has garnered extensive attention. Image Processing and Machine Learning techniques have bolstered image forgery detection, primarily focusing on noise-level manipulation detection. Furthermore, these techniques are often less effective on compressed or low-resolution images and lack self-recovery capabilities, making it challenging to reproduce original content once images have been manipulated. In this context, this project introduces an enhanced scheme known as Image Immunizer for image tampering resistance and lossless auto-recovery using Vaccinator and Invertible Neural Network Deep Learning Approach. Multitask learning is used to train the network, encompassing four key modules: apply vaccine to the uploaded image, ensuring consistency between the immunized and original images, classifying tampered pixels, and encouraging image self-recovery to closely resemble the original image. During the forward pass, both the original image and its corresponding edge map undergo transformation, resulting in the creation of an immunized version. Upon receiving an attack edge image, a localizer identifies tampered areas by predicting a tamper mask. In the backward pass with Run-Length Encoding, hidden perturbations are transformed into information, facilitating the recovery of the original, lossless image and its edge map, ensuring image integrity and authenticity. This proposed technique achieves promising results in real-world tests where experiments show accurate tamper localization as well as high-fidelity content recovery.

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(Faculty / Student / Research Scholar) of Computer Science and Engineering  
Kings College of Engineering, Punalkulam has presented a paper entitled  
Silent Conversation Reflections of a Sign Language Interpreter  
in the 4<sup>th</sup> International Conference on Intellectual Research in Science, Engineering and Management  
(ICIRSEM 2024) held on 24<sup>th</sup> April 2024.

  
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Image Vaccinator for Image Tamper Resilient and Lossless Auto recovery using Invertible Neural Network  
in the 4<sup>th</sup> International Conference on Intellectual Research in Science, Engineering and Management  
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KINGS COLLEGE OF ENGINEERING, PUNALKULAM has presented a paper entitled  
HOSPITAL MANAGEMENT SYSTEM USING PYTHON in the  
**National Conference on Recent Innovations in Engineering and Science (NCORIES'2K24)**  
on 27<sup>th</sup> May 2024.

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61.

Ms.M. Kavitha



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Ms.K. Abhinaya



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 **1<sup>st</sup> INTERNATIONAL CONFERENCE ON DATA ANALYTICS AND INTELLIGENCE COMPUTING-2024 (ICDAIC'24)** 

**CERTIFICATE OF PARTICIPATION**

This is to certify that Prof./Dr./Mr./Ms. K.ABINAYA of KINGS COLLEGE OF ENGINEERING has presented a paper titled FACE BIOMETRIC AUTHENTICATION FOR ATM USING DEEP LEARNING in 1st International Conference on Data Analytics and Intelligence Computing organized by the Department of Artificial Intelligence and Data Science, Velammal Institute of Technology, Chennai, TamilNadu, India on April 06, 2024.

 **COORDINATORS**  
Dr.Prameeladevi Chillakuru  
Ms.K.Sudha

 **HOD**  
Dr.S.PadmaPriya



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Dr.S.Soundararajan

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Dr.N.Balaji

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 **Conference Chair**  
Dr.J.Arputha Vijaya Selvi

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68.

Ms.M. Vidhya



Combined Publication of Faculties

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Proceedings of ICRTES-2024  
CPR, Kings College of Engineering, Thanjavur, India, 2-4/3-4, May 2024  
ISBN:978-93-85057-34-2

<b>CS2428</b>	<b>PREDICTION OF GAS LEAKAGE IN POLYMER INDUSTRIES USING IOT AND DEEP LEARNING TECHNIQUES</b>  <i>S.Parvaneswari, Dr.K.Abhirami, R.Saganthakalakshi, R.Sangeetha, D.Mangalamkizhai</i> <i>Department of Computer Science and Engineering, Kings College of Engineering, Panakkulam, Pudukkottai.</i>
<p>The amount of plastic products produced today has grown from two million to 450 million tons. Styrene is a colorless or pale yellow flammable liquid that is mostly used to make polystyrene plastics and resins. Food containers, packaging, artificial marble, flooring, disposable dinnerware, and molded furniture are all made with styrene. When this gas explodes, symptoms like headache, nausea, vomiting, fatigue, dizziness, disorientation, and clumsy or unsteady movement, such as depression of the central nervous system, may occur. Sensors, physical components, and advances in computing technology are employed to monitor the overall system. The sensors, which are continuously monitored, provide the data. The likelihood of gas exploration is predicted using deep learning algorithms like CNNs, RNNs, and GANs. In the proposed work, we use different deep learning algorithms to analyze data that is obtained from different sensors.</p> <p><b>Keywords:</b> Gas Leakage detection, Prediction, Deep learning Techniques,</p>	
<b>CS2429</b>	<b>SURVEY RELATED TO HYBRID DISEASE PREDICTION USING MACHINE LEARNING ALGORITHMS</b>  <i>*Pappathi *K.Gaetha *Kansus S</i> <i><sup>1,2</sup>Department of Computer Science and Engineering, KSK College of Engineering and Technology, Thanjavur</i> <i><sup>3</sup>Department of Computer Science and Engineering, KSK College of Engineering and Technology, Thanjavur</i>
<p>Hybrid disease is the most common verdict causes for death around the world. Hybrid disease like heart disease, lung disease, hybrid skin, breast cancer, tumor etc. This disease is the majority hazardous for both men and women. Machine learning algorithms can be implemented to predict the hybrid diseases of human. In this paper, several optimization techniques, algorithms and analysis of hybrid disease with complicated approach to data extraction, clustering and classification. 31% of death may cause due to the reason of cardio vascular diseases. Bat and Genetic algorithms are utilized to rationalize bio-inspired algorithms to predict cardiac disease. Bio-inspired algorithms use the tool for prediction and diagnostician of heart attack. The optimized</p>	

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Proceedings of ICRTES-2024  
CPR, Kings College of Engineering, Thanjavur, India, 2-4/3-4, May 2024  
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<b>CS2436</b>	<b>BLOCKCHAIN BASED ON ANONYMOUS SECURE AGREEMENT PROTOCOL FOR MULTI-SIGNATURES SMART GRID SYSTEM</b>  <i>M.Kavitha, S. M. Uma</i> <i><sup>1</sup>Department of Computer Science and Engineering, Kings College of Engineering, Panakkulam, Pudukkottai, Tamil Nadu, India</i>
<p>Fog computing is a paradigm that extends cloud computing to the edge of the network. It can provide computation and storage services to end devices in Internet of Things (IoT). Attribute-based cryptography is a well-known technology to guarantee data confidentiality and fine-grained data access control. However, its computational cost in encryption and decryption phase is linear with the complexity of policy. In this work it proposes a secure and fine-grained data access control scheme with ciphertext update and computation outsourcing in fog computing for IoT. The sensitive data of data owner are first encrypted using attribute-based encryption with multiple policies and then outsourced to cloud storage. Hence, the user whose attributes satisfy the access policy can decrypt the ciphertext. Based on the attribute-based signature technique, authorized user whose attributes integrated in the signature satisfy the update policy can renew the ciphertext. Specifically, most of the encryption, decryption, and signing computations are outsourced from end devices to fog nodes, and thus, the computations for data owners to encrypt, end users to decrypt, re-encrypt, and sign are irrelevant to the number of attributes in the policies. In our work, the data collected from the consumers under the random security verification various cryptographic primitives that are needed for comparative analysis using the widely-used Multiprecision Integer and Rational Arithmetic Cryptographic Library (MIRACL).</p> <p><b>Keywords :</b> Attribute based Encryption, Attribute Based Signature, Ciphertext Policy and Multi Authority Access Control Scheme.</p>	

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<b>CS2437</b>	<p style="text-align: center;"><b>DIAGNOSIS TO DETECTION OF DISEASES USING MEDICAL IMAGE ANALYSIS BY APPLICATION OF DEEP LEARNING TECHNIQUE</b> <i>K.Abhivrami S.M.Uma, S.Pavanrajewari, R.Sujatha Lakshmi D.Mangalambikai</i> <i>Department of Computer Science and Engineering, Kings College of Engineering, Panambalam, Pudukkottai.</i></p>
<p>In the realm of medical image analysis within deep learning (DL), the utilization of advanced DL methods holds immense significance. DL has demonstrated impressive achievements across different domains, making it particularly noteworthy for healthcare applications. Integrating DL with medical image analysis facilitates real-time examination of large and complex datasets, leading to insights that greatly enhance healthcare outcomes and operational efficiency. This comprehensive review of recent literature thoroughly examines the latest DL approaches aimed at addressing challenges in medical healthcare, with a specific focus on DL algorithms in medical image analysis. Work aims at detection along with the classification of multiple diseases, modalities for medical imaging, tools and techniques used for evaluation. Further, experiments are performed using MRI data set to provide a comparative analysis of dl models. By systematically categorizing state-of-the-art DL techniques such as Convolutional Neural Networks (CNNs), Recurrent Neural Networks (RNNs), Generative Adversarial Networks (GANs), Long Short-term Memory (LSTM) models, and hybrid models, this work delves into their fundamental principles, advantages, limitations, methodologies, simulation environments, and datasets. The assessment metrics employed cover a wide range of features, including accuracy, sensitivity, specificity, F-score, robustness, computational complexity, and generalizability. The work will assist in healthcare community to choose appropriate diagnosis techniques for a given disease with reduced time and high accuracy.</p> <p><b>Keywords:</b> <i>Deep learning, Medical image analysis, Convolutional Neural network</i></p>	
<b>CS2438</b>	<p style="text-align: center;"><b>CLOG REPULSIVE IN SOCIAL MEDIA NETWORK</b> <i>Jana Prasath.B.A, Barveen Rajanath.T, Sudharsan.M, Saranmathi. R</i> <i>Dept. of Computer Science Engineering, M.J.E.T. Engineering College, Trichy, Tamil Nadu, India</i></p>
<p>Social networks have become integral platforms for communication and information sharing, yet they face challenges related to the proliferation of offensive content, including images. In contemporary online environments, social networks have become central platforms for communication and information dissemination. However, alongside their positive aspects, these platforms often grapple with the challenge of</p>	

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<p>real-time, we aim to address these challenges. Through the implementation of a Convolutional Neural Network algorithm, we classify signs and provide corresponding labels for converting them into spoken language. The system we develop aims to enhance accessibility and inclusivity for the deaf and hard of hearing. Through real-time video processing, the system captures and interprets signing gestures of users, converting them into a digital format. Advanced machine learning models then translate these gestures into speech</p>	
<b>CS2442</b>	<p style="text-align: center;"><b>WIRELESS TECHNOLOGY (Li-Fi TECHNOLOGY)</b> <i>M.Vidhya, S. M. Uma</i> <i>Department of Computer Science and Engineering, Kings College of Engineering, Panambalam, Pudukkottai.</i></p>
<p>The advent of Li-Fi technology has ushered in a new era of wireless communication that harnesses the power of light to transmit data, promising faster speeds, enhanced security, and reduced electromagnetic interference. This paper explores the multifaceted landscape of Li-Fi technology and its potential to revolutionize the way we connect and communicate. Li-Fi, short for Light Fidelity, employs visible light communication (VLC) to transmit data using LED lights. Unlike traditional radio frequency-based wireless technologies, Li-Fi offers significantly higher data transfer rates, reaching several gigabits per second. This remarkable speed is achieved by modulating the intensity of light at speeds imperceptible to the human eye. Security concerns in wireless communication have become increasingly prevalent, and Li-Fi offers a potential solution. Since light signals do not penetrate walls, Li-Fi networks are inherently more secure, making them less susceptible to eavesdropping or interference. Moreover, Li-Fi technology presents an eco-friendly alternative, as it utilizes existing lighting infrastructure for data transmission, reducing the need for additional electronic devices and minimizing electromagnetic pollution. This paper delves into the technical aspects of Li-Fi, its current state of development, and explores potential applications across various industries, including healthcare, transportation, and smart cities. As Li-Fi continues to evolve, it holds the promise of transforming the wireless communication landscape, making it faster, safer, and more sustainable.</p> <p><b>Keywords:</b> <i>Li-Fi Technology, Visible Light Communication (VLC), Wireless Communication, High-Speed Data Transmission, Optical Wireless Communication, Data Throughput, Networking Technology, Indoor Positioning, Smart Lighting, Li-Fi Applications, Optical Networking, Transceiver.</i></p>	

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MD5 generates hash codes for integrity checks. These additions create a multi-layered defense, enhancing security against potential breaches in cloud storage. This algorithm provides greater security and to avoid the explicit transfer of a secret key. Use the retrieved Security key as decryption key to decrypt. Implementing real-time threat detection systems and regular security audits can help identify and mitigate emerging risks and vulnerabilities in the cloud environment. Furthermore, proactive measures such as user access controls, encryption key management, and regular data backups are crucial for safeguarding against data breaches and ensuring business continuity. Moreover, considering the evolving nature of cyber security threats, it's important to stay abreast of industry developments and incorporate emerging technologies and strategies to adapt and strengthen the security posture continuously. By adopting a comprehensive approach to security that encompasses both preventive and responsive measures, organizations can mitigate risks effectively and maintain the integrity and confidentiality of their data in the cloud.

<b>CS2446</b>	<b>BIG DATA ANALYTICS USING ARTIFICIAL NEURAL NETWORKS IN CLOUD GAMING</b>  <i>D.Manjulaambigai, S.M.Uma, K.Abhirami, S.Pavananewari, B.Sangeetha</i>  <i>Department of Computer Science, Kings College of Engineering, Panakkulam</i>
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Cloud gaming platforms have gained significant traction in recent years, offering gamers the ability to stream high-quality games directly to their devices without the need for powerful hardware. However, ensuring a seamless gaming experience in the cloud requires addressing various challenges, including network latency, bandwidth limitations, and real-time data processing. Big data analytics, coupled with artificial neural networks (ANNs), presents a promising approach to optimize cloud gaming performance and enhance user satisfaction. This abstract introduces a research study focused on leveraging big data analytics and ANNs to improve the performance of cloud gaming platforms. The study aims to analyze large volumes of gaming data, including player interactions, network metrics, and system performance, to identify patterns and insights that can inform real-time decision-making. ANNs will be employed to model complex relationships within the data and develop predictive algorithms for optimizing game streaming, reducing latency, and mitigating network congestion.

**Keywords:** Artificial Neural Networks(ANNs), Cloud Gaming, Network Congestion Mitigation

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ISBN-978-93-85057-34-2*

<b>CS2447</b>	<b>EFFICIENT RESOURCE ALLOCATION FOR WIRELESS ROUTING PROTOCOL</b>  <i>T.Sindhu, S.M.Uma</i>  <i>Department of Computer Science, Kings College of Engineering, Panakkulam</i>
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In this paper propose a bandwidth-efficient multicast mechanism for heterogeneous wireless networks. Here reduce the bandwidth cost of an Internet Protocol (IP) multicast tree by adaptively selecting the cell and the wireless technology for each mobile host to join the multicast group. Our mechanism enables more mobile hosts to cluster together and leads to the use of fewer cells to save the scarce wireless bandwidth. Besides, the paths in the multicast tree connecting to the selected cells share more common links to save the wire line bandwidth. Our mechanism supports the dynamic group membership and offers mobility of group members. Moreover, our mechanism requires no modification to the current IP multicast routing protocols. Here formulate the selection of the cell and the wireless technology for each mobile host in the heterogeneous wireless networks as an optimization problem. Then use Integer Linear Programming to model the problem and show that the problem is NP-hard. To solve the problem, here propose a distributed algorithm based on Lagrangean relaxation and a network protocol based on the algorithm. The simulation results show that our mechanism can effectively save the wireless and wire line bandwidth as compared to the traditional IP multicast.

**Keywords:** Heterogeneous wireless networks, multicast.

<b>CS2448</b>	<b>BLOCKCHAIN-BACKED BIOMETRIC AUTHENTICATION FOR ELEVATING SECURITY STANDARDS</b>  <i>K. Abhinaya, P.Janarthanan</i>  <i>Department of Computer Science, Kings College of Engineering, Panakkulam</i>
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In recent decades, Biometric Block chain Authentication Models are becoming an optimal model on convenience and safety. With Increasing Significance of Biometric Blockchain Authentication Models for Enhanced Security and Convenience Over the past few decades, Biometric Block chain Authentication Models have emerged as the preferred choice for balancing convenience with robust security measures. By enrolling users based on their biometric details, administration templates manage the information, facilitating authentication through dedicated modules. While biometric authentication stands out as one of the most secure methods across various

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<b>CS2437</b>	<p style="text-align: center;"><b>DIAGNOSIS TO DETECTION OF DISEASES USING MEDICAL IMAGE ANALYSIS BY APPLICATION OF DEEP LEARNING TECHNIQUE</b>  <i>K.Abbirami S.M.Uma S.Prasanna S.Prasanna Lakshmi D.Mangalambigai</i>  <i>Department of Computer Science and Engineering, Kings College of Engineering, Panvelilalam, Pudukkottai</i></p> <p>In the realm of medical image analysis within deep learning (DL), the utilization of advanced DL methods holds immense significance. DL has demonstrated impressive achievements across different domains, making it particularly noteworthy for healthcare applications. Integrating DL with medical image analysis facilitates real-time examination of large and complex datasets, leading to insights that greatly enhance healthcare outcomes and operational efficiency. This comprehensive review of recent literature thoroughly examines the latest DL approaches aimed at addressing challenges in medical healthcare, with a specific focus on DL algorithms in medical image analysis. Work aims at detection along with the classification of multiple diseases, modalities for medical imaging, tools and techniques used for evaluation. Further, experiments are performed using MRI data set to provide a comparative analysis of dl models. By systematically categorizing state-of-the-art DL techniques such as Convolutional Neural Networks (CNNs), Recurrent Neural Networks (RNNs), Generative Adversarial Networks (GANs), Long Short-term Memory (LSTM) models, and hybrid models, this work delves into their fundamental principles, advantages, limitations, methodologies, simulation environments, and datasets. The assessment metrics employed cover a wide range of features, including accuracy, sensitivity, specificity, F-score, robustness, computational complexity, and generalizability. The work will assist in healthcare community to choose appropriate diagnosis techniques for a given disease with reduced time and high accuracy.</p> <p><b>Keywords:</b> <i>Deep learning, Medical image analysis, Convolutional Neural network</i></p>
<b>CS2438</b>	<p style="text-align: center;"><b>CLOG REPULSIVE IN SOCIAL MEDIA NETWORK</b>  <i>Jana Pransath.B.A, Barveen Raganath.T Sudharshan.M, Saranmathi. R</i>  <i>Dept. of Computer Science Engineering, M.I.E.T. Engineering College, Trichy, Tamil Nadu, India</i></p> <p>Social networks have become integral platforms for communication and information sharing, yet they face challenges related to the proliferation of offensive content, including images. In contemporary online environments, social networks have become central platforms for communication and information dissemination. However, alongside their positive aspects, these platforms often grapple with the challenge of</p>

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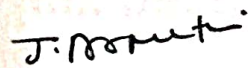
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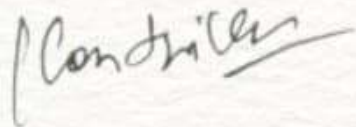
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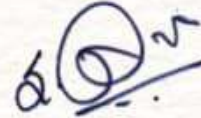
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**(ICETMEEST-2024)**

**February 22<sup>nd</sup> & 23<sup>rd</sup> 2024**

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**First Edition: 2024**

**ISBN: 978-81-965070-7-7**

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**PROCEEDING OF  
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ENGINEERING AND TECHNOLOGY  
- ETET 2024**

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**PROCEEDINGS**

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**Centre for Promotion of Research**

**Published by:**

Centre for Promotion of Research

**Kings College of Engineering**

Punalkulam-613303,

Pudukkottai Dt.

Fax : **04362-282494**

Phone : **04362 - 282474 / 282676**

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**ISBN: 978-93-85057-34-2**



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ME2408	<p><b>ANALYSIS OF WELDING CHARACTERISTICS FOR DIFFERENT MATERIALS BY USING MIG WELDING</b></p> <p><i>AL. Karthikeyan, S. Sankaran, M. Venkadeshwaran, E. Esakkiraj, B. Sathishwaran</i></p> <p><i>Department of Mechanical Engineering, Thamirabharani Engineering College, Tirunelveli</i></p>
<p>Welding is essentially joining of two or more parts which are fused together by means of heat, pressure or both forming a join as part cooled. By using MIG (Metal Inert Gas) welding type, to aim analyse welding properties of same and different materials. Therefore, to aim analyse the properties of welding like strength of weld, penetration between two different materials.</p>	
ME2409	<p><b>STATIC AND DYNAMIC ANALYSIS OF AUTOMOBILE CONNECTING ROD</b></p> <p><i>A. Selvarani</i></p> <p><i>Department of Mechanical Engineering, P S R Engineering College</i></p>
<p>we are going to do static, modal analysis and of a Connecting rod. Different materials are used for the analysis like structural steel, Titanium alloy, Aluminium alloy. Connecting rod is one of the most vital part of an I.C. engine and used to transfer the reciprocating motion of piston into the rotatory motion of crankshaft. It is heavily stressed during the operation subjected to compressive stress due to the gas pressure and tensile stress due to the Inertia force. The actual dimensions of the connecting rod are considered and the model of the connecting rod is designed in solid works and ANSYS is used for static and modal analysis for finding von misses stresses, frequencies for three materials and compared to choose the best material suitable for connecting rod.</p>	
ME2410	<p><b>OPTIMIZATION OF PROCESS PARAMETER FOR LASER WELDING OF SUPER AUSTENITE STAINLESS STEEL (UNS S31254)</b></p> <p><i><sup>1</sup>Arunkumar Ganesan, <sup>2</sup>S.Nelson Raja, <sup>3</sup>K.Ram, <sup>4</sup>A.Abiyuth</i></p> <p><i><sup>1,4</sup>P.R.Engineering College, Thanjavur, <sup>2</sup>Kings College of Engineering, Pudukkottai, <sup>3</sup>PRIST Deemed To Be University, Thanjavur,</i></p>
<p>The main aim of our project is to optimize the process parameters such as Power, Speed and FocalDistance using GRA (Grey relational analysis) for laser Welding of super austenite stainless steel(UNS S31254). It was substantially stronger than the common austenitic grades, with strength and impact toughness nearly twice that of 300 series</p>	

(HVOF) is one of the emerging technologies among the thermal spraying techniques, for producing uniform and dense coatings, having high hardness and good adhesion values. In this study, HVOF technique was used to deposit 50Ni-40Cr-5B-5Si coatings, approximately 150–200 micron meter thick, on the Ni- based superalloy (Inconel 718). The coatings were characterized in relation to coating thickness, porosity, microhardness and microstructure. The techniques used in the present investigation include optical microscopy, scanning electron microscopy (SEM). Some porosity (less than 1.4%) and inclusions were observed in the structure of the coatings. Coating microhardness values were found to be in the range of 700–800 Hv (Vickers Hardness) on the Inconel 718 substrate. It was observed that NiCrBSi coated superalloys showed better result than the uncoated superalloy.

**Keywords:** Inconel 718, HVOF, NiCrBSi Coating, porosity, Hardness

ME2414

**DESIGN AND DEVELOPMENT OF A REMOTE-CONTROLLED SCRAP COLLECTING VEHICLE FOR INDUSTRIAL APPLICATIONS**

*R.Shankar, K.Eraniyan, M.Arunkumar, R.Manojkumar, K.Hariharan  
Department of Mechanical Engineering, Kings College of Engineering (Autonomous),  
Thanjavur.*

Collection of scrap in industries is a tedious work and requires more labour. The next step towards an automated world is eliminating the need for manually collecting the scrap in heavy industries. Traditional industries in India still employ sweepers to clean the scrap. This leads to increase in idling time of the workers and also increased costs to the companies. Our project can help solve this problem by collecting the metal and non-metal scrap/waste with the help of a Bluetooth-controlled scrap collecting vehicle. Using previous research done on metal detecting waste collectors, image recognition based automatic scrap collecting vehicle and Bluetooth controlled RC cars, the project was developed. The scrap collecting vehicle was designed, fabricated and programmed for user-friendly operation in waste collection. The scrap collecting vehicle can sense if the collected waste is a metal or non-metal with the help of a metal detector attached in the setup. It gives a beep sound when a metal is detected. Using electronics and Arduino, the scrap collecting vehicle is programmed to be efficient in collecting the waste. The scrap collecting vehicle also has omni-directional wheel movement which helps the vehicle glide sideways.

**Keywords:** DC Motor, Battery, Spur gear, vehicle

connectivity over a very large area with greater security, faster data rates, and higher data rates. It uses visible light communication, also known as infrared and near ultraviolet spectrum communication, which modifies the frequency of the scattered light. A series of adjacent reactions characterize this shift in frequency. Li-Fi technology enables extremely dependable data transmission and reception through LED headlights and taillights for vehicle-to-vehicle communication.

**Keywords:** LI-FI, electronic control unit, vehicle-to-vehicle

ME2416	<p><b>EXPERIMENTAL INVESTIGATION ON PHYSICAL AND MECHANICAL CHARACTERISTICS OF SILICONNITRIDE (Si<sub>3</sub>N<sub>4</sub>) - TITANIUM NITRIDE (TiN) BIO CERAMICS</b></p> <p><i>M.Vivekananthan, K.Ramprasad, Mathu mithran, V. Jayasriram, R. Praveenkumar,</i></p> <p><i>Department of Mechanical Engineering, Kings College of Engineering (Autonomous), Thanjavur.</i></p>
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Bio materials are produced naturally or artificially using a various methods employing metals, ceramics or even some times composites. Especially for high load bearing orthopedic application like hip, knee joints and dental implant the life expectancy of biomaterials is always increasing. In this work fabrication of a novel bio ceramics from orthopedic application with Titanium nitride in silicon nitride matrix is developed. The Si<sub>3</sub>N<sub>4</sub>-TiN is a novel material and it has been developed to combine the material advantages of silicon nitride and Titanium nitride. The tradition powder forming process is used for the fabrication of the proposed Si<sub>3</sub>N<sub>4</sub>-TiN composite in the from of pellets. Titanium Nitride is added to the silicon nitride in the several of wt% and compressed and sintered in the 15000C. The physical characteristics densities of the sintered pellets were determined byArchimedes principle and the compared with the theoretical density.

**Keywords:** Si<sub>3</sub>N<sub>4</sub>, TiN, Bio material, Archimedes principle, powder forming

ME2417	<p><b>PERFORMANCE AND EMISSION CHARACTERISTIC OF HYBRID FUEL (KARANJA AND JULIFLORA OIL)IN CI ENGINE WITH 1 PENTANOL</b></p> <p><i>Agilan.H, Harish Ragavendra.M, Balaji.S, kabil.V, jahanraj.J</i></p> <p><i>Department of Mechanical Engineering, Kings College of Engineering, Punalkulam</i></p>
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The study presents the findings of an experimental study on the use of karanja oil and juliflora oil with 1 pentanol as a diesel fuel substitute in compression ignition engines.

These studies were carried out using a 4-stroke, water-cooled, naturally aspirated single-cylinder diesel engine. The engine load was varied to 25%, 50%, 75%, and 100% at the maximum braking torque speed of 2200 rpm were employed without changing the fuel system. Petroleum diesel and Karanja, juliflora biodiesel are mixed at a volumetric ratio of D80%+K10%+J10%+ 1P 5ML. The performance characteristics of Karanja, Juliflora with 1 pentanol biodiesel blends are found to be rather similar to those of diesel fuel, according to the results. When comparing Karanja,Juliflora with 1pentanol biodiesel blends to diesel fuel, which resulted in a 8.6% boost in brake thermal efficiency and a 7.9% decrease in brake specific fuel consumption when compared to the diesel. In comparison to diesel, the exhaust gases' contents of oxygen and carbon monoxide dropped by 9.5% and 17.35%, respectively. It is discovered that the emission characteristics, such as CO, HC, NO<sub>x</sub> and smoke, are lower under all engine load circumstances. Thus, it can be said that using Bio oil in diesel engines at lower mixes is possible without requiring significant engine modifications.

**Keywords:** *Karanja; Juliflora; Transesetrification; BSFC; Emission*

ME2418	<p><b>PERFORMANCE AND EMISSION CHARACTERISTIC OF HYBRID FUEL IN CI ENGINE WITH 1 PENTANOL</b></p> <p><i>Agilan .H, Shanmugabharathi .S, Saravanan .A, Selvamani .K, Srikumar.S, Sabanayagam .S</i></p> <p><i>Department of Mechanical Engineering, Kings College of Engineering (Autonomous), Thanjavur.</i></p>
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The study presents the findings of an experimental study on the use of Ziziphus Seed oil and Annona Squmosa Seed oil with 1 pentanol as a diesel fuel substitute in compression ignition engines. These studies were carried out using a 4-stroke, water-cooled, naturally aspirated single-cylinder diesel engine. The engine load was varied to 25%, 50%, 75%, and 100% at the maximum braking torque speed of 2200 rpm were employed without changing the fuel system. Petroleum diesel and Ziziphus, Annona Squmosa biodiesel are mixed at a volumetric ratio of D80%+K10%+J10%+ 1P 5ML. The performance characteristics of Ziziphus, Annona Squmosa with 1 pentanol biodiesel blends are found to be rather similar to those of diesel fuel, according to the results. When comparing Ziziphus, Annona Squmosa with 1pentanol biodiesel blends to diesel fuel, which resulted in a 8.6% boost in brake thermal efficiency and a 7.9% decrease in brake specific fuel consumption when compared to the diesel. In comparison to diesel,

the exhaust gases' contents of oxygen and carbon monoxide dropped by 9.5% and 17.35%, respectively. It is discovered that the emission characteristics, such as CO, HC, NOx and smoke, are lower under all engine load circumstances. Thus, it can be said that using Bio oil in diesel engines at lower mixes is possible without requiring significant engine modifications.

**Keywords:** *Ziziphus; Annona Squamosa; Transesetrification; BSFC; Emission*

ME2419	<p><b>DEVELOPMENT OF FRICTIONLESS POWER GENERATION USING FLYWHEEL FOR ELECTRIC VECHICLES</b></p> <p><i>T.Pushparaj, R. Maran, M.Misfar, M. Mohamed Arshath, H. Mohamed Rilwan</i></p> <p><i>Department of Mechanical Engineering, Kings College of Engineering (Autonomous), Thanjavur.</i></p>
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The production and use of energy are vital to the economies of all countries and it is needed for many activities such as lighting, automobiles, agricultural and industries. Energy is usually produced by non-renewable sources such coal, oils and nuclear which create pollution; this is the main reason the idea of producing energy using a bike or rotating members. Since there are lot of rotating member that would generates sufficient energy to charge small and large devices. The existing energy generation mechanisms the generator generates energy by taking some physical contact with tyre but we are developing the generator that could generate electricity without any friction with flywheel. So the wear and tear, noise and heat generation problems are nullified.

ME2420	<p><b>IMPLEMENTATION OF HYBRID MULTIPURPOSE ADJUSTABLE SOLAR SPRAYER</b></p> <p><i>S.Balaganesh, Jayasurya.K, SakthiGanesh.GS, Sanjay.N, Suryabala.N,</i></p> <p><i>Department of Mechanical Engineering, Kings College of Engineering (Autonomous), Thanjavur.</i></p>
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The population of India is increasing rapidly in order to full fill their diet & needs, the production of foods must be increased. But this must come at affordable to everyone. In India farming is done by traditional ways beside that there has been larger development of industry and ser- vice sector as compared to that of agriculture sector. To mechanization of agriculture in India some equipment has been developed. The pesticide sprayer is one among them and it is done by traditional farm workers by carrying backpack type sprayer, which requires human effort or by using electric pump.

To improve the agriculture system and to reduce the human effort and problems associated with the backpack sprayer new equipment is fabricated which will be beneficial to farmers. The equipment utilizes renewable energy source (Solar energy) which is eco-friendly to function. The solar panel gives out electric supply to system, the radio con-trolled transmitter and receiver minimize drudgery of farmer. Also minimize the wastage of pesticide and time. Our contribution on our project is by using eco-friendly reliably available solar energy as a main source of energy making this device by advancing the spraying methods which make friendly to use and operate which can be useable in different spraying stages of farming as per process requirement. It can be operated in small farming land with the standard spacing decreasing the labor cost and human effort.

**Keywords:** *Solar, DC Pump, Renewable energy, Pesticide sprayer, Multi-functioning*

ME2421	<p><b>PERFORMANCE AND EMISSION STUDY OF ANONA AND JULIFLORA BIODIESEL BLENDS IN DIESEL ENGINE</b></p> <p>T.Pushparaj, M.Aadhikarunesan, M.Aakash, V.Anbarasan, P.Arunkumar</p> <p><i>Department of Mechanical Engineering, Kings College of Engineering (Autonomous), Thanjavur</i></p>
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The idea of using vegetable oils as fuel for diesel engines is not new. With the advent of cheap petroleum, appropriate crude oil fractions were reined to serve as fuel and diesel fuels and diesel engines evolved together. In the 1930s and 1940s vegetable oils were used as diesel fuels from time to time, but usually only in emergency situations. Recently, because of increases in crude oil prices, limited resources of fossil oil and environmental concern there has been a renewed focus on vegetable oils and animal fats to make biodiesel fuels. Diesel engines have proven their utility in the transportation, agriculture, and power sectors in India. They are also potential sources of decentralized energy generation for rural electrification. Concerns on the long-term availability of petroleum diesel and the stringent environmental norms have mandated the search for a renewable alternative to diesel fuel to address these problems. In this study, performance tests were carried out on diesel engine with neat diesel fuel; biodiesel 10, 20 and 30% blends were tested. Biodiesel was made by transesterification process. Anona and Juliflora seeds oils were selected for biodiesel production. Fuel blends were tested in a single cylinder, direct injection, water cooled diesel engine. The

ME2425	<b>PERFORMANCE, COMBUSTION AND EMISSION CHARACTERISTICS OF CI ENGINE BY USING PUMPKIN AND MAIZE BIO DIESEL</b>  P.Subash, R.Sulthan Abdul Kadher, S.Thangapandiyan, N.Magesh, M.Melwin Jagadeesh Sridhar  Department of Mechanical Engineering, Kings College of Engineering (Autonomous), Thanjavur.
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Biodiesel is the most environmentally benign, renewable, and alternative liquid fuel. Without altering the engine, an experimental study was conducted to examine the emissions and performance of a CI engine running on pumpkin fuel and maize biodiesel in different mix ratios. This study examines the use of biodiesel as a diesel substitute, derived from the transesterification of maize and pumpkin. Under varied load situations, tests were conducted on the efficacy, combustion, and emissions of pumpkin-maize (PM) biodiesel and its blends (10%, 20%, 30%, 40%, and 50%) with diesel. The study includes the performance and combustion properties. It was decided what factors to include, like brake thermal efficiency, brake-specific fuel consumption, and emission characteristics like smoke opacity, carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>), hydrocarbon (HC), and nitrogen oxide (NO). According to recent studies, engines that run on biodiesel also show greater quantities of NO emissions. The findings showed that at 80% load, the engine's brake thermal efficiency increased by 13.75% for the B30 mix correspondingly. Particularly for B30, a decrease in brake-specific fuel consumption of 11% has been noted at greater loads. When the B30 blend was run at maximum loads, the CO and HC emissions increased by 27.3% and 27.2%, respectively, but the smoke opacity and NO emissions fell by 26.9%. to fuel made of diesel. Lastly, the study emphasizes the need to produce PM biodiesel fuel in the right amounts to improve engine performance and emission characteristics.

**Keywords:** *CI Engine, Pumpkin seed oil, Maize oil, Emission, Brake-specific fuel consumption etc.,*



ME2426

**IMPACT OF THE SiC ADDITION ON THE MORPHOLOGICAL,  
STRUCTURAL AND MECHANICAL PROPERTIES OF Cu-SiC  
COMPOSITES PREPARED BY POWDER METALLURGY ROUTE**

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Metal matrix composites (MMCs) have garnered significant attention in recent years due to their tailored properties and wide range of applications. This study presents an experimental investigation on Cu/SiC-based MMCs with a focus on microstructure analysis. The Cu/SiC composites were prepared through powder metallurgy technique, varying the weight percentage of SiC particles to investigate its influence on the microstructure and mechanical properties. Scanning Electron Microscopy (SEM) coupled with Energy Dispersive X-ray Spectroscopy (EDS) was employed to analyze the microstructure and distribution of SiC particles within the Cu matrix. Differential Scanning Calorimetry (DSC) was utilized to study the thermal behavior of the composites. Additionally, mechanical properties such as hardness, tensile strength, and wear resistance were evaluated. The microstructural analysis revealed a homogeneous distribution of SiC particles within the Cu matrix for lower weight percentages, while agglomeration was observed at higher concentrations. The addition of SiC particles significantly influenced the thermal behavior, resulting in improved thermal stability of the composites. Furthermore, the mechanical properties exhibited a notable enhancement with the incorporation of SiC particles, attributed to the reinforcement effect. Overall, this study provides valuable insights into the microstructure-property relationships of Cu/SiC-based MMCs, laying a foundation for their potential application in various engineering sectors requiring enhanced mechanical and thermal properties.

**Keywords:** *Metal matrix composites, Scanning Electron Microscopy , Differential Scanning Calorimetry, Energy Dispersive X-ray Spectroscopy,*

ME2427	<b>PERFORMANCE AND EMISSION CHARACTERISTICS OF CI ENGINEBY USING LEMONGRASS AND NEEM OIL</b>  <i>P.P. Shantharaman, M.Praveenkumar, M.Pravin, N.Rajesh, R.Ramprasath</i>  <i>Department of Mechanical Engineering, Kings College of Engineering (Autonomous), Thanjavur</i>
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This study investigates the performance and emission characteristics of an compression ignition (CI) engine fuelled by a blend of lemongrass oil and neem oil. With increasing concerns about environmental pollution and the depletion of fossil fuels, alternative fuels derived from renewable sources have garnered significant attention. Lemongrass oil and neem oil, being bio-based fuels, offer promising alternatives due to their abundant availability and potential to reduce emissions. In this research, experiments were conducted on a single-cylinder, four-stroke, water-cooled diesel engine. Lemongrass oil and neem oil were blended in different proportions with diesel fuel, and their effects on engine performance and emissions were evaluated. Performance parameters such as brake thermal efficiency, brake specific fuel consumption, and exhaust gas temperature were measured and compared with those of pure diesel operation. Emission characteristics including carbonmonoxide (CO), hydrocarbons (HC), and nitrogen oxides (NO<sub>x</sub>) were also analyzed. The results indicate that the blend of lemongrass oil and neem oil with diesel fuel shows comparable performance to pure diesel operation in terms of thermal efficiency and specific fuel consumption. Moreover, the emissions of CO, HC and NO<sub>x</sub>, were found to be reduced significantly with the use of the blended fuel, highlighting its potential as a sustainable and environmentally friendly alternative for CI engines. Further optimization of the blend ratios and engine parameters could enhance the performance and emissions benefits of using lemongrass and neem oil blends in CI engines.

**Keywords:** *Bio fuel, Lemongrass oil & Neem oil, Performance, Emission, Thermal efficiency.*

ME2428

**MECHANICAL PROPERTIES UPGRADING OVER FUSION DEPOSITION  
MODELLING PROCESS PARAMETER EFFECT ON POLYMER MATRIX  
COMPOSITES**

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This study investigates the influence of process parameters on the mechanical properties of polymer matrix composites fabricated using Fusion Deposition Modeling(FDM). FDM is a widely used additive manufacturing technique known for its versatility and cost-effectiveness. By systematically varying process parameters such as printing speed, layer thickness, and infill density, this research aims to optimize the mechanical performance of the composites. Mechanical properties such as tensile strength, flexural strength, and impact resistance are evaluated through experimental testing and statistical analysis. The findings reveal significant correlations between process parameters and mechanical properties, providing insights for enhancing the overall performance of FDM-printed polymer matrix composites. The tensile test, impact test and flexural test is conducted on Polymer Matrix Composites specimen. This specimen in the corresponding dimensions of shell thickness 2.4mm and Raster angle 90° with As-Built condition which is obtained 3.18 KN tensile strength. The specimen in the corresponding dimensions of shell thickness 0.8 mm and Raster angle 0° with As-Built condition which is obtained 32J impact load and 392 MPa flexural load. This research contributes to the advancement of additive manufacturing techniques and facilitates the production of high-performance materials for various industrial applications.

**Keywords:** *Fusion Deposition Modelling, Additive Manufacturing, Polymer Matrix, Composites, Mechanical Properties, Additive Manufacturing.*

ME2429

**TRIBOLOGY PROPERTIES UPGRADING OVER FUSION DEPOSITION  
MODELLING PROCESS PARAMETER EFFECT ON POLYMER MATRIX  
COMPOSITES**

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This study investigates the optimization of fusion deposition modeling (FDM) process parameters to enhance the tribological properties of polymer matrix composites (PMCs).

Tribological performance, including wear resistance and frictional characteristics, is critical for the functionality and durability of engineered materials. By systematically varying FDM parameters such as layer thickness, infill density, and printing speed, the effects on the wear properties of PMCs are analyzed. First CF-reinforced polymers developed for AM have demonstrated specific strengths approaching aerospace-quality aluminum. Second CF additions can radically reduce the distortion and warping of the material during deposition, which enables large-scale, out-of-the-oven, high deposition rate manufacturing. Additionally, the influence of different reinforcement materials and their concentrations on tribological behavior is explored. Experimental results reveal significant improvements in wear resistance and frictional properties with optimized FDM parameters, indicating the potential for tailored tribological performance in PMCs through additive manufacturing techniques. Found that when you continuously increases the sliding velocity, kinematic coefficient of friction is decreased. This is the cause for decreasing wear loss at higher speed and found sliding velocity plays major changes in wear rate is approximately 1.666 and co-efficient of friction is near to the 0.464. This research contributes to advancing the understanding of how FDM process parameters can be utilized to upgrade the tribological properties of polymer matrix composites, facilitating their broader application in various engineering fields.

**Keywords:** *Fusion Deposition Modelling, Additive Manufacturing, Polymer Matrix, Composites, Wear Properties.*

ME2430	<p><b>DESIGNING A JOYSTICK OPERATOR TRICYCLE FOR PERSON AND DISABILITY</b></p> <p><i>S.Sabanayagam, Jegan.K, Prakash.K, Lalith kumar.E, Mahendran.M</i></p> <p><i>Department of Mechanical Engineering, Kings College of Engineering (Autonomous), Thanjavur</i></p>
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The objective is to provide an alternative steering solution that accommodates varying levels of mobility impairments, offering increased accessibility and independence for riders. The development of such a mechanism involves considerations related to ergonomics, safety, ease of use, and adaptability to different tricycle models. The incorporation of a joystick control mechanism aims to address the challenges faced by individuals with limited arm or hand mobility, allowing them to steer the tricycle effectively. The development of a joystick control mechanism for steering in disability tricycles represents a significant step towards enhancing mobility and independence for individuals with limited arm or hand mobility.

**Keywords:** Batteries, Disability, Joystick Control, PWD, Tricycles.

ME2431	<p><b>STUDY ON PREPARATION OF Al – SiC METAL MATRIX COMPOSITES USING POWDER METALLURGY TECHNIQUE AND ITS MECHANICAL PROPERTIES</b></p> <p><i>M.Vivekananthan, V.Kishore kumar, S.Leninkumar, N.Devaprasanth, N.Manibharathi</i></p> <p><i>Department of Mechanical Engineering, Kings College of engineering. Punalkulam, Thanjavur</i></p>
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Powder metallurgy is a material processing technique to produce novel parts and components by using various metal powders as starting materials through the blending, compaction and sintering process. It is a renowned, economical process for creating complex parts with near net shapes. It is more advantageous than other metal forming techniques. It leads to produce components with intricate shape at cheaper price. Besides, it has the potential to produce versatile parts and maintain part to part uniformity with improved surface quality. This technology is highly applied in aerospace, automobile industries, and for structural applications. In this research work, fabrication of Al-SiC composite by powder metallurgy method is discussed. The reinforcement was homogeneously distributed in the matrix phase without any

formation of byproducts. SiC particles with different compositions (10 and 20 wt%) were added as reinforcement. Moreover, the addition of SiC in the matrix system improves mechanical properties of composites. After the development of material, the hardness, density and porosity of the composites have been evaluated.

**Keyword:** *Powder metallurgy, SiC, Density, Hardness and Porosity*

ME2432	<p><b>A STUDY OF FABRICATION METHODS OF ALUMINUM BASED COMPOSITES FOCUSED ON STIR CASTING PROCESS</b></p> <p>V.Aravind, E.Hemanathan, S.Barani, P.Santhosh kumar, K.Keerthivasan</p> <p><i>Department of Mechanical Engineering, Kings College of engineering. Punalkulam, Thanjavur</i></p>
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The growing requirement for the product having low cost along with excellent quality has moved work towards composite materials in recent years. Composite materials are very important materials nowadays. A composite material is the mixture of two or more materials, which are having distinct phases and characteristics as well as superior to the base material. Metal matrix composites (MMCs) are constantly evolving due to innovative and exciting technologies and are widely used as well as recognized as a potential material for many industrial applications in various industries. MMCs are having excellent properties in comparison with conventional metals and alloys, in MMCs, a new class of composites, aluminum metal matrix composites (AlMMCs) are gaining increasing attention, AlMMCs are very important for a wide array of applications in industries because of excellent mechanical characteristics, low weight and cost. In the production of MMC materials, there are several production methods available as well as AlMMCs also can be manufactured through a variety of techniques. By changing the methods of the fabrication process and by adding the reinforcement material, different characteristic profiles can be obtained although the materials having the same composition and same quantities. The objective of this article provides a brief overview of the liquid fabrication process focused on the stir casting method and also about various factors, which generally affect the fabrication process.

**Keyword:** *Stir casting, AlMMC, MMC, Hardness and Porosity*

ME2433	<p><b>MICROSTRUCTURE, WEAR AND CORROSION PROPERTIES OF NiB-TiC COMPOSITE MATERIALS PRODUCED BY POWDER METALLURGY METHOD</b></p> <p><i>M.Sakthivel, R.Santhosh, A.Rakesh, V.Manibharathi, B.Sakthivel</i></p> <p><i>Department of Mechanical Engineering, Kings College of engineering. Punalkulam, Thanjavur</i></p>
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In this study, NiB-TiC composite materials were produced using powder metallurgy. In the Ni-TiC-B powder mixture, TiC was fixed at a rate of 5 %, 5, 10 and 15 % boron was added and mechanical alloying was carried out. The prepared powder mixtures were cold pressed under pressure of 400 MPa and sintered in an argon atmosphere at 800°C for 2 hours. Microstructure, phase formation, hardness, wear and corrosion properties of the samples were investigated in detail. Scanning electron microscopy (SEM) was used for microstructure analysis and X-ray diffractogram (XRD) was used for phase formation detection. The hardness measurements of the samples were measured by a microhardness measuring device. Densities of the samples were determined by Archimedes' principle. The corrosion tests were performed potentiodynamic polarization curves of the composite materials in 3.5 % NaCl solution. Wear tests were carried out the composite materials under a load of 10 N. Results showed that by increasing the amount of B, the wear and corrosion resistance increased.

**Keywords:** *NiB-TiC composites, powder metallurgy, sintering, mechanical alloying, corrosion*

ME2434	<p><b>RECENT RESEARCHES ON CU-NI ALLOY MATRIX COMPOSITES THROUGH ELECTRODEPOSITION AND POWDER METALLURGY METHODS: A REVIEW</b></p> <p><i>M.Sakthivel, A.Vivek, K.Vivek, S.V.Abishkar, T.Aravindhakumar</i></p> <p><i>Department of Mechanical Engineering, Kings College of engineering. Punalkulam, Thanjavur</i></p>
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Copper-nickel (Cu-Ni) alloy matrix composites have been extensively used in many industries due to their high mechanical strength, good wear and corrosion resistance, and exceptional electrocatalytic properties. This review gives a comprehensive overview of the recent development in the synthesis of Cu-Ni alloy matrix composites by electro deposition and powder metallurgy methods. The incorporation of particles into the Cu-Ni alloy matrix produced improved properties in

the fields of mechanical, chemical, marine and electronics engineering. In the marine environment, an increase in demand for high corrosion and wear resistance properties for boat hulls, marine hardware, condensers and heat exchangers were observed. Cu-Ni alloy matrix composites prepared using the electro deposition method suggest a most simple and economical way to improve the overall properties.

**Keyword:** *Copper-nickel, electrocatalytic, powder metallurgy, heat exchangers and corrosion resistance*

ME2435	<p><b>DEVELOPMENT OF ENERGY FROM THE AUTOMOTIVE WHEELS BY USING PIEZOELECTRICITY</b></p> <p><i>K.Rajesh Kumar, Backiyaraj.S, Dhivakar.K, Durairaj.V, Jayasrirajan.A</i></p> <p><i>Department of Mechanical Engineering, Kings College of engineering. Punalkulam, Thanjavur</i></p>
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In the present work, energy is harnessed from the tyres with the help of piezoelectric material in an automotive application. The power dissipated by the wheels to the surrounding can be captured and transformed into electrical energy. Tyres are a good source of pulsating/alternating force converted into alternating current. The tires encounter undulations and vibrations during the process of braking and accelerating. Additionally, they also experience vertical reaction forces when traversing over bumps and potholes. These factors highlight the necessity for a mechanism to address these issues. This mechanism holds immense potential and sparks creative concepts for energy harvesting in the automotive industry and related sectors. The research demonstrates that the mechanism falls short in terms of efficiency to generate the necessary energy for complete vehicle energization. However, it can be harnessed to extend the travel range of vehicles. This mechanism holds immense potential to transform the future of electric vehicles with its wide ranging applications. Additionally, the study highlights the importance of advancements in material selection for piezoelectric sensors.

**Keywords:** *energy harvesting, piezoelectric effect, piezoelectric material, ceramics, tyres, power generation*





**CRITERION:3.3.3**

**DEPARTMENT OF SCIENCE AND HUMANITIES**

**PATENT AND CONFERENCE**

(12) PATENT APPLICATION PUBLICATION  
(19) INDIA  
(22) Date of filing of Application :06/01/2024

(21) Application No.202441001222 A  
(43) Publication Date : 02/02/2024

(54) Title of the invention : EFFICIENT ROOM-TEMPERATURE SYNTHESIS OF ETHYL ACETATE USING VANADIUM-ENHANCED PHOSPHOMOLYBDIC ACID CATALYST SUPPORTED ON ZRO2.TIO2 MIXED OXIDE

(51) International classification :B01J0037020000, B01J0037080000, B65D0001020000, A61P0019020000, B01D0053860000  
(86) International Application No :NA  
Filing Date :NA  
(87) International Publication No : NA  
(61) Patent of Addition to Application Number :NA  
Filing Date :NA  
(62) Divisional to Application Number :NA  
Filing Date :NA

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(57) Abstract :  
Efficient Room-Temperature Synthesis of Ethyl Acetate using Vanadium-Enhanced Phosphomolybdic Acid Catalyst Supported on ZrO2.TiO2 Mixed Oxide is the proposed invention. The proposed invention focuses on understanding the functions of Vanadium-Enhanced Phosphomolybdic Acid Catalyst Supported on Mixed Oxide. The invention focuses on analysing the parameters of Efficient Room-Temperature Synthesis of Ethyl Acetate.

No. of Pages : 13 No. of Claims : 4

(12) PATENT APPLICATION PUBLICATION  
(19) INDIA  
(22) Date of filing of Application :07/02/2024

(21) Application No.202441008506 A  
(43) Publication Date : 08/03/2024

(54) Title of the invention : PD-LOADED BISMUTH FERRITE (BIFEO<sub>3</sub>): A PEROVSKITE FOR ACETONE GAS SENSING AND PHOTOCATALYTIC DYE DEGRADATION

(51) International classification	:B01J23/843, B82Y30/00, B82Y40/00, C01G29/00, C01G49/00, C04B35/26, H01M8/0217
(86) International Application No	:NA
Filing Date	:NA
(87) International Publication No	: NA
(61) Patent of Addition to Application Number	:NA
Filing Date	:NA
(62) Divisional to Application Number	:NA
Filing Date	:NA
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(57) Abstract :

PD-LOADED BISMUTH FERRITE (BIFEO<sub>3</sub>): A PEROVSKITE FOR ACETONE GAS SENSING AND PHOTOCATALYTIC DYE DEGRADATION A method for the development of a process for producing a layer of crystalline A/M/X material, wherein the process comprises disposing on a substrate a precursor composition comprising: a first precursor compound comprising a first cation (M), which first cation is a metal or metalloid cation; and a solvent, wherein the solvent comprises; acetonitrile, propionitrile, acetone or a mixture thereof; and an alkyl amine. The motivation for loading Pd on bismuth ferrite (BFO) is due to its fascinating catalytic redox reactions causing faster adsorption and desorption of the oxygen molecules over the metal oxide. The planned perovskites were developed via surfactant assisted sol-gel auto-combustion route, and characterized their physico-chemical properties using XRD, SEM, TEM, HRTEM, EDAX, XPS and BET. FIG.1

No. of Pages : 14 No. of Claims : 1

(12) PATENT APPLICATION PUBLICATION

(21) Application No.202441036340 A

(19) INDIA

(22) Date of filing of Application :08/05/2024

(43) Publication Date : 17/05/2024

(54) Title of the invention : ECO-FRIENDLY MATERIALS AND SUSTAINABLE DESIGN IN ELECTRONIC

(51) International classification :G06Q0010060000, G06Q0030020000, G06F0008650000, B29B0017040000, G06Q0010000000

(86) International Application No :NA  
 Filing Date :NA

(87) International Publication No : NA  
 Patent of Addition to : NA

Application Number :NA  
 Filing Date :NA

(62) Divisional to Application Number :NA  
 Filing Date :NA

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 Address of Applicant :PROFESSOR, CHEMISTRY, K S RANGASAMY COLLEGE OF TECHNOLOGY TIRUCHENGODE , TAMIL NADU-637215, INDIA Tiruchengode -----

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 Address of Applicant :ASSISTANT PROFESSOR, PHYSICS (S&H), NEHRU INSTITUTE OF TECHNOLOGY, COIMBATORE - 641105 TAMILNADU, INDIA Coimbatore -----

**10)Dr .P.SARAVANAN**  
 Address of Applicant :ASSOCIATE PROFESSOR, CHEMISTRY (S&H), KINGS COLLEGE OF ENGINEERING, PUDUKKOTAI, TAMIL NADU- 613303, INDIA Pudukottai -----

**11)Dr.S.SAIVARAJ**  
 Address of Applicant :ASSISTANT PROFESSOR, CHEMISTRY, CHENNAI INSTITUTE OF TECHNOLOGY, KUNDRATHUR, TAMIL NADU – 600069, INDIA Kundrathur -----

**12)Dr. PRADEEP V**  
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(57) Abstract :  
 ABSTRACT ECO-FRIENDLY MATERIALS AND SUSTAINABLE DESIGN IN ELECTRONIC Sustainable design in electronic products refers to the use of design principles that minimize the environmental impact of the product throughout its entire lifecycle. This includes factors such as energy efficiency, recyclability, and ease of repair and upgrading. For example, a smartphone designed with sustainable principles would use energy-efficient components, be easily recyclable, and have replaceable and upgradable parts, reducing the need for frequent disposal and production of new devices. Incorporating eco-friendly materials and sustainable design in electronic products has the potential to reduce the environmental footprint of the electronics industry. It can also lead to cost savings for manufacturers by reducing the need for new materials and minimizing waste. Furthermore, consumers are becoming more conscious of their environmental impact, and are increasingly opting for products that are more sustainable and eco-friendly. Overall, the use of eco-friendly materials and sustainable design in electronic products is crucial in promoting a more sustainable and environmentally friendly approach to technology. It is important for manufacturers to prioritize these principles in their production processes, and for consumers to demand and support eco-friendly and sustainable electronic products.

No. of Pages : 15 No. of Claims : 6

## 2. Certificate Proof

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This is to certify that Dr. / Mr. / Ms. V. SURESH KUMAR, PROFESSOR  
 of KING'S COLLEGE OF ENGINEERING, PUNALKULAM  
 participated and presented a research paper titled Influence of Polythiophene- $\beta$ -naphthalene Sulphonic Acid on Corrosion Inhibition of mild Steel in Acid Solution.  
 in the "International Conference on Current Trends in Advanced Functional Materials (CTAFM - 2023)"  
 organized by the Research Department of Chemistry, Saranathan College of Engineering, Tiruchirappalli - 620 012  
 on 26<sup>th</sup> & 27<sup>th</sup> September 2023.

Dr. L. Muruganandam  
Organizing Secretary
  
Dr. R. Natarajan  
Head (R&D)
  
Dr. D. Valavan  
Principal

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This is to certify that Dr. / Mr. / Ms. S.UDAYAKUMAR, ASSOCIATE PROFESSOR  
 of KING'S COLLEGE OF ENGINEERING, PUNALKULAM  
 participated and presented a research paper titled Synthesis and characterization of Mn<sup>2+</sup> doped Zn Nanorod by simple chemical precipitation Method.  
 in the "International Conference on Current Trends in Advanced Functional Materials (CTAFM - 2023)"  
 organized by the Research Department of Chemistry, Saranathan College of Engineering, Tiruchirappalli - 620 012  
 on 26<sup>th</sup> & 27<sup>th</sup> September 2023.

Dr. L. Muruganandam  
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 of KING'S COLLEGE OF ENGINEERING, PUNALKULAM  
 participated and presented a research paper titled Effect of Chitosan and Mordants on the Dyability of silk fabrics with an Eco-friendly Natural dye from the barks of Urtica dioica L.  
 in the "International Conference on Current Trends in Advanced Functional Materials (CTAFM - 2023)"  
 organized by the Research Department of Chemistry, Saranathan College of Engineering, Tiruchirappalli - 620 012  
 on 26<sup>th</sup> & 27<sup>th</sup> September 2023.

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This is to certify that Dr./Mr./Mrs. V. SURESH KUMAR  
KING'S COLLEGE OF ENGINEERING, THANJAVUR  
Biosorption of Victoria blue using Ziziphus Denoplia Seed: modeling studies.  
 has participated / presented a paper / delivered an invited lecture in the International Conference on  
**"MOLECULAR BASIS OF CANCER AND PREVENTION"** held on 07<sup>th</sup> and 08<sup>th</sup> February 2024 organized  
 by Department of Life Sciences, School of Arts and Science, PRIST Deemed to be University, Thanjavur,  
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This is to certify that Dr./Mr./Mrs. S.UDAYAKUMAR  
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METAL ION DOPED Zn NANORODS BY SIMPLE PRECIPITATION METHOD.  
 has participated / presented a paper / delivered an invited lecture in the International Conference on  
**"MOLECULAR BASIS OF CANCER AND PREVENTION"** held on 07<sup>th</sup> and 08<sup>th</sup> February 2024 organized  
 by Department of Life Sciences, School of Arts and Science, PRIST Deemed to be University, Thanjavur,  
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**ICRTM-2024**

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This is to certify that T. Ganapateja, Research scholar  
K.N.Govt Arts college (Autonomous) for Women  
 Participated / Presented a paper in the International Conference on Recent  
 Trends in Mathematics (ICRTM-2024) organized by Department of  
 Mathematics, Idhaya College for Women, Kumbakonam, Tamilnadu, India  
 on 6<sup>th</sup> March 2024.

Title: Isomorphism properties on strong Neutrosophic Graphs

Dr. S. Sangodapo Taiwo Oluibunmi,  
Senior Lecturer of Mathematics,  
University of Ibadan, Nigeria.
  
Dr. G. Jayalatha,  
Head, Department of Mathematics,  
R. V. College of Engineering, Bengaluru.
  
Dr. G. Ramesh,  
Principal,  
Government Arts and Science College,  
Jayankondam.
  
Dr. V. Sadhasivam,  
Associate Professor of Mathematics,  
Thiruvallavar Government Arts College,  
Rasipuram.

Dr. V. Jayapriya,  
Head, Department of Mathematics,  
Convener.
  
Rev. Sr. Dr. Elgin Amala,  
Principal.



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### Certificate of Participation

This Certificate is awarded to Dr Sureshkumar V, Associate Professor  
of Kings College of Engineering, Punalakulam, Thanjavur for  
presenting a paper titled Saffranin-B dye removal studies using Senegalia catechu activated  
carbon Ca-alginate Polymeric composite beads  
in the International Conference on Recent Trends in Engineering & Science  
(ICRTES-2024) on 2<sup>nd</sup> & 3<sup>rd</sup> May 2024, organized by the Centre for Promotion of  
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in the International Conference on Recent Trends in Engineering & Science  
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from Flowers of Tagetes nelsonii on Wool fabric  
in the International Conference on Recent Trends in Engineering & Science  
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of Kings College of Engineering, Thanjavur for  
presenting a paper titled ON DECAGONAL NUMBERS  
in the International Conference on Recent Trends in Engineering & Science  
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This Certificate is awarded to Dr Revathi.S, Assistant Professor  
of Kings College of Engineering, Thanjavur for  
presenting a paper titled Strong (Weak) Triple connected Equitable Domination number  
of a Fuzzy Graph


in the International Conference on Recent Trends in Engineering & Science  
(ICRTES-2024) on 2<sup>nd</sup> & 3<sup>rd</sup> May 2024, organized by the Centre for Promotion of  
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