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**St. JOSEPH'S COLLEGE OF ENGINEERING**  
 (An Autonomous Institution)  
**St. Joseph's Group of Institutions**  
 OMR, Chennai - 119



**NOVEMBER 2023**  
**DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING**

Sl. No.	Photographs Captured During Event	Corresponding remarks in regarding the status of activity execution
1	<p><small>Optical and Quantum Electronics (2023) 55:1086  <a href="https://doi.org/10.1007/s11882-023-05295-6">https://doi.org/10.1007/s11882-023-05295-6</a></small></p>  <p><b>Enhancing quality of service in wireless systems using iterative weighted least squares with fuzzy logic integration algorithm</b></p> <p><small>Kapil Aggarwal<sup>1</sup> · P. N. Renjith<sup>2</sup> · P. Udayakumar<sup>3</sup> · K. Thyagarajan<sup>4</sup> · L. Sherly Puspha Annabel<sup>5</sup> · S. Jayachitra<sup>6</sup></small></p> <p><small>Received: 12 July 2023 / Accepted: 12 August 2023        © The Author(s), under exclusive license to Springer Science+Business Media, LLC, part of Springer Nature 2023</small></p> <p><b>Abstract</b>        Effective quality of service (QoS) management is essential to the smooth running of wireless networks and to guarantee peak performance. This study suggests a unique method for enhancing QoS in wireless networks that combines fuzzy logic with iterative weighted least squares (IWLS). Performance of the system is anticipated to be improved by dynamically modifying system settings depending on network input. When handling the uncertainties and imprecisions present in wireless contexts, fuzzy logic is used, allowing for adaptive decision-making depending on the state of the network. By adding network input, IWLS is also used to repeatedly adjust system parameters. To further improve QoS performance, an adaptive neural fuzzy iterative weighted least squares (ANFIWLS) method is presented. Fuzzy logic, neural networks, and IWLS work together to provide more precise inference and decision-making skills. According to a comparison, ANFIWLS beats fuzzy logic alone, resulting in a QoS increase of around 32.8%. This gain is most noticeable in settings with moderate low rate, low jitter, medium latency, and high throughput. Fuzzy logic is used with ANFIWLS and IWLS to allow for the adaptive modification of QoS parameters in wireless networks, improving user experience and system performance as a whole. The results of this research aid in the creation of QoS management systems for wireless communication networks that are more dependable and efficient.</p> <p style="text-align: center;"><b>Co-author:</b>   <b>Dr. Sherly Puspha Annabel. L</b></p>	<p style="text-align: center;"><b><u>Staff Paper Publication</u></b></p> <p><b>Kapil Aggarwal, P. N. Renjith, P. Udayakumar, K. Thyagarajan, L. Sherly Puspha Annabel &amp; S. Jayachitra, “Enhancing quality of service in wireless systems using iterative weighted least squares with fuzzy logic integration algorithm”, Optical and Quantum Electronics, Vol. 55, No. 12, pp.1086,2023.</b></p> <p>Effective quality of service (QoS) management is essential to the smooth running of wireless networks and to guarantee peak performance. This study suggests a unique method for enhancing QoS in wireless networks that combines fuzzy logic with iterative weighted least squares (IWLS). Performance of the system is anticipated to be improved by dynamically modifying system settings depending on network input. When handling the uncertainties and imprecisions present in wireless contexts, fuzzy logic is used, allowing for adaptive decision-making depending on the state of the network. By adding network input, IWLS is also used to repeatedly adjust system parameters. To further improve QoS performance, an adaptive neural fuzzy iterative weighted least squares (ANFIWLS) method is presented. Fuzzy</p>

	<p>Published a paper in SCIE Indexed Journal</p>	<p>logic, neural networks, and IWLS work together to provide more precise inference and decision-making skills. According to a comparison, ANFIWLS beats fuzzy logic alone, resulting in a QoS increase of around 32.8%. This gain is most noticeable in settings with moderate loss rate, low jitter, medium latency, and high throughput. Fuzzy logic is used with ANFIWLS and IWLS to allow for the adaptive modification of QoS parameters in wireless networks, improving user experience and system performance as a whole. The results of this research aid in the creation of QoS management systems for wireless communication networks that are more dependable and efficient.</p>
<p>2</p>	<p><b>A novel SVMA and K-NN classifier based optical ML technique for seizure detection</b></p> <p>N. Deepa<sup>1</sup>, R. Naresh<sup>1</sup>, S. Anitha<sup>2</sup>, R. Suguna<sup>1</sup>, C. N. S. Vinoth Kumar<sup>1</sup></p> <p>Received: 8 March 2023 / Accepted: 11 September 2023 / Published online: 27 September 2023 © The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature 2023</p> <p><b>Abstract</b></p> <p>Among the most common paroxysmal neurological conditions is epilepsy. When spontaneous combustion occurs seizure is a defining feature. An epileptic seizure is caused by a brain syndrome called epilepsy. The electroencephalogram test is useful for detecting epileptic seizures and diagnosing epilepsy because it contains significant physiological data that can reflect human brain activity. The EEG signal (EEGS) is used for capturing the signals from the brain, which helps in the localization of the epileptogenic region and thereby plays a vital role in successful surgery. The signals, both focal and non-focal are attained in the epileptogenic area and normal region respectively. The localization of epileptic seizures with the help of a focal signal is necessary while detecting seizures. Hence, the present article provides a detailed analysis of EEG readings. The Signals with and without focus are decomposed by elliptical mode decomposition-discrete wavelet transform (EPMD-DWT). A combination of the EPMD-DWT decomposition method by log-energy entropy gives an efficient accuracy in comparison to other entropy in distinguishing the Focal from Non-specific signals. The extracted features are subjected to support vector machine algorithm (SVMA) and K nearest-neighbour (K-NN) classifiers whose performance will be calculated and verified for accuracy, sensitivity, and specificity. In the end, it will be shown that K-NN produces the highest accuracy when compared to SVMA classifier. The EEGS categorized into focused and non-focal signals were carried out through the K-NN method whose performance was calculated and verified in terms of their specificity, sensitivity, and accuracy. It was also inferred that with an increase in data at every point, the performance parameters were enhanced and later got saturated after a certain specific point. Further, the K-NN classifier obtained the highest accuracy of 75%, a sensitivity of 77.78%, and a specificity of 72.73% while the SVMA classifier obtained an accuracy of 68.33%, a sensitivity of 60.87%, and a specificity of 56.79%. Thus it can be stated that the K-NN classifier provided the highest accuracy when related to SVMA classifier.</p> <p><b>Co-author:</b></p> <p><b>Ms. S. Anitha</b></p> <p>Published a paper in SCIE Indexed Journal</p>	<p><b>N. Deepa, R. Naresh, S. Anitha, R. Suguna &amp; C. N. S. Vinoth Kumar, “A novel SVMA and K-NN classifier based optical ML technique for seizure detection”, Optical and Quantum Electronics, 55(12), 1083,2023</b></p> <p>Among the most common paroxysmal neurological conditions is epilepsy. When spontaneous combustion occurs seizure is a defining feature. An epileptic seizure is caused by a brain syndrome called epilepsy. The electroencephalogram test is useful for detecting epileptic seizures and diagnosing epilepsy because it contains significant physiological data that can reflect human brain activity. The EEG signal (EEGS) is used for capturing the signals from the brain, which helps in the localization of the epileptogenic region and thereby plays a vital role in successful surgery. The signals, both focal and non-focal are attained in the epileptogenic area and normal region respectively. The localization of epileptic seizures with the help of a focal signal is necessary while detecting seizures. Hence, the present article provides a detailed analysis of EEG readings. The Signals with and without focus are decomposed by elliptical mode decomposition-discrete wavelet transform (EPMD DWT). A combination of the EPMD-DWT decomposition method by log-energy entropy gives an efficient accuracy in comparison to other entropy in distinguishing the Focal from Non-specific signals. The extracted features are subjected to support vector machine algorithm (SVMA) and K nearest-neighbor (K-NN) classifiers whose performance will be calculated and verified for accuracy, sensitivity, and specificity. In the end, it will be shown that K-NN produces the highest accuracy when compared to SVMA classifier. The EEGS categorized into focused and non-focal signals were carried out through the K-NN method whose performance was calculated and verified in terms of their specificity, sensitivity, and accuracy. It was also inferred that with an increase in data at every point, the performance parameters were enhanced and later got saturated after a certain specific point. Further, the K-NN classifier obtained the highest</p>

1.




Certificates  
received  
by Faculty

**FDP/ Workshop Attended by Faculty**

S. No.	Title of the Topic	Name of the Staff	Conducted By	Date
1	Statistical and probability Insights for data science: Application and use cases	Ms. Ancy. S	Vardhaman College of Engineering	06-11-23 to 10-11-23 (5 Days)

accuracy of 75%, a sensitivity of 77.78%, and a specificity of 72.73% while the SVM classifier obtained an accuracy of 58.33%, a sensitivity of 60.87%, and a specificity of 56.76%. Thus it can be stated that the K-NN classifier provided the highest accuracy when related to SVM classifier.

## DEPARTMENT OF BIOTECHNOLOGY

S.No.	Title of the Events and Photographs	Details of the Event
1.	<b>INDUSTRIAL PROJECTS DONE BY STUDENTS</b>	-
2.	<p style="text-align: center;"><b>PUBLICATIONS(ONLY PUBLISHED) DETAILS</b></p> <p style="text-align: center;"> <small>Thalassas: An International Journal of Marine Sciences  <a href="https://doi.org/10.1007/s41208-023-00645-3">https://doi.org/10.1007/s41208-023-00645-3</a></small> </p> <hr/> <p style="text-align: center;">  </p> <p style="text-align: center;"><b>Phylogenetic Relationship of Marine Calanoid Copepods (Crustacea: Maxillopoda) Based on Morphological and Molecular Datasets from the Chennai Coast, Bay of Bengal</b></p> <p style="text-align: center;"> <small>Md Anwar Nawaz<sup>1,2</sup> · Gurunathan Baskar<sup>2</sup> · Sivalingam Valliappan Meenakshi<sup>1</sup> · Abdus Saboor<sup>3</sup> · Kandhasamy Sivakumar<sup>1</sup></small> </p> <p style="text-align: center;"> <small>Received: 11 July 2023 / Revised: 31 October 2023 / Accepted: 7 December 2023            © The Author(s), under exclusive licence to Springer Nature Switzerland AG 2023</small> </p> <p><b>Abstract</b></p> <p>The present study highlights the phylogenetic relationship among calanoid copepods based on morphological and molecular data sets. Phylogenetic tree based on morphological characteristics for 32 species of calanoid copepods was constructed using taxonomic key characters. For the molecular datasets, the mitochondrial cytochrome oxidase I (mtCOI) and nuclear ribosomal RNA (18s rRNA) gene segments were sequenced. Maximum parsimony and maximum likelihood were used to construct a phylogenetic tree. The phylogenetic tree based on mtCOI and 18s rRNA was constructed for 20 and 15 species of calanoid copepods respectively. The present study emphasizes the monophyly of calanoid copepods. The comparison between morphological and molecular datasets of calanoid copepods showed that the phylogenetic tree constructed based on morphological characteristics showed similarity to that of 18s rRNA up to the family level. This suggests that the 18s rRNA is possibly the appropriate molecular marker for studying the phylogeny of calanoid copepods, while the mtCOI gene is the appropriate marker for species identification.</p> <p style="text-align: center;"><i>Copy of published paper by Dr.G.Baskar</i></p>	<ol style="list-style-type: none"> <li>1. Dr. G. Baskar, published a paper on, Phylogenetic Relationship of Marine Calanoid Copepods (Crustacea: Maxillopoda) Based on Morphological and Molecular Datasets from the Chennai Coast, Bay of Bengal, <i>Thalassas: An International Journal of Marine Sciences</i>, Published online. <a href="https://doi.org/10.1007/s41208-023-00645-3">https://doi.org/10.1007/s41208-023-00645-3</a>, 2023</li> <li>2. Dr. G. Baskar, published a paper on, Economic analysis and TOPSIS approach to optimize the CI engine characteristics using span 80 mixed carbon nanotubes emulsified Sapindus trifoliatus (soapnut) biodiesel by artificial neural network prediction model, <i>Applied Energy</i>, 355, 122309. 2024</li> <li>3. Dr. G. Baskar, published a paper on. Microwave assisted synthesis, characterization and bioactivity evaluation of a cobalt (II) complex with a novel Schiff base ligand derived from phenylacetyl urea and salicylaldehyde, <i>Journal of Molecular Structure</i>, 1295, 136650, 2024</li> <li>4. Dr. G. Baskar, published a paper on, Experimental investigations and kinetic modeling of removal of acrylonitrile using hybrid membrane bioreactor, <i>Biomass Conversion and Biorefinery</i>, Published online. <a href="https://doi.org/10.1007/s13399-023-04968-2">https://doi.org/10.1007/s13399-023-04968-2</a>, 2023</li> </ol>



Economic analysis and TOPSIS approach to optimize the CI engine characteristics using span 80 mixed carbon nanotubes emulsified *Sapindus trifoliatus* (soapnut) biodiesel by artificial neural network prediction model

K. Muninathan<sup>a,b</sup>, M. Venkata Ramanan<sup>b,\*</sup>, N. Monish<sup>a</sup>, G. Baskar<sup>c,\*</sup>

<sup>a</sup> Department of Mechanical Engineering, St. Joseph's College of Engineering, Chennai 600119, India

<sup>b</sup> Institute of Energy Studies, Anna University, Chennai 600025, India

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*Copy of published paper by Dr.G.Baskar*



Microwave assisted synthesis, characterization and bioactivity evaluation of a cobalt (II) complex with a novel Schiff base ligand derived from phenylacetyl urea and salicylaldehyde

P. Durairaj<sup>a,\*</sup>, T. Maruthavanan<sup>b,\*</sup>, S. Manjunathan<sup>c</sup>, Saminathan Subashini<sup>d</sup>, Samuel Lalthazuala Rokhum<sup>e</sup>, Gurnathan Baskar<sup>f,\*</sup>

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<sup>b</sup> Department of Chemistry, SONASTARCH, Sansi College of Technology (Autonomous), Salem 636 005, India

<sup>c</sup> Department of Chemistry, Loganatha Narayanasamy Government College (Autonomous), Madras University, Ponnur, Chennai 601 204, India

<sup>d</sup> Centre for Translational Research and Sustainable Development, Chennai Research Foundation, Chennai 600096, India

<sup>e</sup> Department of Chemistry, National Institute of Technology Silchar, Assam 788010, India

<sup>f</sup> Department of Biotechnology, St. Joseph's College of Engineering, Chennai 600119, India

*Copy of published paper by Dr.G.Baskar*

5. Dr. G. Baskar, published a paper on, Seasonal dynamics of body size in calanoid copepods (Calanoida: Copepoda) from the stressed tropical coast of India, Chennai, Bay of Bengal, Aquatic Ecology, Published online. DOI: 10.1007/s10452-023-10075-1, 2023
6. Dr. G. Baskar, published a paper on, Sivalingam VM, Sivakumar K, Enrichment of Dioithonarigida (Giesberch, 1896) with different microalgal diets and its effect on survival and growth of Latescalcarifer (Bloch, 1790) larvae, Iranian Journal of Ichthyology, 2383-1561, 10 (1), 41-48. 2023



## Experimental investigations and kinetic modeling of removal of acrylonitrile using hybrid membrane bioreactor

B. Sundar<sup>1</sup> · V. Saravanan<sup>1</sup> · R. Rajeshkannan<sup>1</sup> · Panchamoorthy Saravanan<sup>2</sup> · M. Rajasimman<sup>1</sup> · Sagadevan Suresh<sup>3,4</sup> · Gurunathan Baskar<sup>5,6</sup>

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## Seasonal dynamics of body size in calanoid copepods (Calanoida: Copepoda) from the stressed tropical coast of India, Chennai, Bay of Bengal

Md. Anwar Nawaz · Kandhasamy Sivakumar · Gurunathan Baskar

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	<p>Iran. J. Ichthyol. (2023) 10(1): 41-48 P-ISSN: 2383-1561; E-ISSN: 2383-0964</p> <p style="text-align: right;">© 2023 Iranian Society of Ichthyology</p> <hr/> <p><b>ORIGINAL ARTICLE</b></p> <p><b>Enrichment of <i>Dioithonarigida</i> (Giesberch, 1896) with different microalgal diets and its effect on survival and growth of <i>Latescalcarifer</i> (Bloch, 1790) larvae</b></p> <p><b>Md Anwar NAWAZ<sup>1,2</sup>, Radha VIJAYARAJ<sup>2</sup>, Gurunathan BASKAR<sup>3</sup>, Sivalingam Valliappan MEENAKSHI<sup>1</sup>, Kandhasamy SIVAKUMAR<sup>*1</sup></b></p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>School of Aquaculture, Department of Biotechnology, Karpaga Vinayaga College of Engineering and Technology, Chengalpattu, India. Department of Marine Biotechnology, AMET University, Chennai, India. Department of Biotechnology, St Joseph's College of Engineering, Chennai, India.</p> <p>Correspondence: <a href="mailto:csivakumar76@gmail.com">csivakumar76@gmail.com</a></p> </div> <div style="width: 45%; background-color: #f0f0f0; padding: 5px;"> <p><b>Abstract</b> Copepods are vital key components of marine and freshwater ecosystems and play an important role in the transfer of energy from primary producers to secondary producers and consumers. The optimization of feeding copepods with the desired diet is essential to culture them in large quantities. Hence, this study aimed to investigate the high-density production of a marine copepod, <i>Dioithona rigida</i> using different microalgal diets and evaluate the growth and survival of marine finfish larvae (Asian seabass), <i>Latescalcarifer</i>. The high-density culture was observed in <i>D. rigida</i> fed a mixed diet (50:50) of <i>C. vulgaris</i> and <i>N. oculata</i>, which reached a population density of 22500±2523 ind./L on the 21<sup>st</sup> day culture period. Essential fatty acids like Linolenic acid and Docosahexaenoic acid show significantly higher percentages in copepods fed a mixed</p> </div> </div> <p style="text-align: right;"><i>Copy of published paper by Dr.G.Baskar</i></p>											
3.	<b>FUNDED PROJECTS</b>	-										
4.	<p><b>STAFF CONFERENCE PRESENTATION</b></p> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p>New Horizons in Biotechnology NHBT-2023, Trivandrum, Kerala, India <span style="float: right;"><a href="https://nhbt2023.in/ncommit">https://nhbt2023.in/ncommit</a></span></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Name</th> <th style="text-align: center;">Affiliation</th> </tr> </thead> <tbody> <tr> <td>Balagurumurthy, Bhavya</td> <td>CSIR-Indian Institute of Petroleum, Dehradun</td> </tr> <tr> <td>Banerjee, Rintu</td> <td>Indian Institute of Technology, Kharagpur</td> </tr> <tr> <td>Banerjee, Moinak</td> <td>Rajiv Gandhi Centre for Biotechnology, Trivandrum</td> </tr> <tr> <td>Baskar Gurunathan</td> <td>St Joseph's College of Engineering, Chennai</td> </tr> </tbody> </table> </div>	Name	Affiliation	Balagurumurthy, Bhavya	CSIR-Indian Institute of Petroleum, Dehradun	Banerjee, Rintu	Indian Institute of Technology, Kharagpur	Banerjee, Moinak	Rajiv Gandhi Centre for Biotechnology, Trivandrum	Baskar Gurunathan	St Joseph's College of Engineering, Chennai	<ol style="list-style-type: none"> <li>1. Dr.G. Baskar is an National Advisory Committee Member, International Conference on New Horizons in Biotechnology, CSIR-NIIST, Trivandrum, Kerala. November 26-29, 2023.</li>   <li>2. Dr.G. Baskar, Chaired a Session on Biorefineries/Bioproducts, International Conference on New Horizons in Biotechnology, CSIR-NIIST, Trivandrum, Kerala. November 26-29, 2023.</li> </ol>
Name	Affiliation											
Balagurumurthy, Bhavya	CSIR-Indian Institute of Petroleum, Dehradun											
Banerjee, Rintu	Indian Institute of Technology, Kharagpur											
Banerjee, Moinak	Rajiv Gandhi Centre for Biotechnology, Trivandrum											
Baskar Gurunathan	St Joseph's College of Engineering, Chennai											





*Copy of certificate Dr.G.Baskar*

**PP-035**

***Strychnos potatorum* seeds derived magnetic graphene oxide nanocomposite for removal of nickel from wastewater: Adsorption performance, isotherm, kinetic and desorption behavior**

Janani Rameshbabu<sup>1</sup>, Baskar Gurunathan<sup>1</sup> and Sivakumar Kandhasamy<sup>2</sup>

<sup>1</sup>Department of Biotechnology, St. Joseph's college of Engineering, Chennai- 6000119, India

<sup>2</sup>Department of Biotechnology, KarpagaVinayaga College of Engineering and Technology, Chinna Kolambakkam-603308, Tamilnadu, India

*Copy of paper presentation by Dr.G.Baskar*

3. *Strychnos potatorum* seeds derived magnetic graphene oxide nanocomposite for removal of nickel from wastewater: Adsorption performance, isotherm, kinetic and desorption behavior, International Conference on New Horizons in Biotechnology, CSIR-NIIST, Trivandrum, Kerala. November 26-29, 2023.
4. Techno-Economic Evaluation of Sustainable Biodiesel Production from Macroalgae and Non-Edible Oil Blend through Innovative Catalytic Strategy using a De-Oiled Macroalgal Biomass International Conference on New Horizons in Biotechnology, CSIR-NIIST, Trivandrum, Kerala. November 26-29, 2023.
5. Potassium doped biochar as a potential heterogenous catalyst for biodiesel production from *Chlorella vulgaris* microalgal oil International Conference on New Horizons in Biotechnology, CSIR-NIIST, Trivandrum, Kerala. November 26-29, 2023.
6. A process model to investigate the biodiesel production from hybrid oil feedstocks using magnetically recyclable basic ionic liquid nanocatalyst, International Conference on New Horizons in Biotechnology, CSIR-NIIST, Trivandrum, Kerala. November 26-29, 2023



PP- 106

**Techno-Economic Evaluation of Sustainable Biodiesel Production from Macroalgae and Non-Edible Oil Blend through Innovative Catalytic Strategy using a De-Oiled Macroalgal Biomass**

Pravin Ravichandran and Baskar Gurunathan

Department of Biotechnology, St. Joseph's College of Engineering, Chennai, Tamilnadu, India.

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*Copy of paper presentation by Dr.G.Baskar*

PP- 152

**Potassium doped biochar as a potential heterogenous catalyst for biodiesel production from *Chlorella vulgaris* microalgal oil**

T. Devi<sup>1</sup> and G. Baskar<sup>2</sup>

<sup>1</sup>Department of Biotechnology, St. Peter's College of Engineering and Technology, Chennai – 600054, India

<sup>2</sup>Department of Biotechnology, St. Joseph's College of Engineering, Chennai - 600119, India

7. Ms.Yuwvaranni.S has Presented a paper entitled **Exploring the Health Benefits of a Polyherbal-Infused Blue Tea: An Investigation into Antioxidant, Anti-Cancer, Anti-Diabetic, and Antimicrobial Properties** in International Conference on Gastronomy, Nutrition and Dietetics-V held online on November 11-13, 2023 / Istanbul, Türkiyein collaboration with Istanbul Arel University & IKSAD Institute
8. Ms.Yuwvaranni.S has Presented paper titled **Antimicrobial and haemolytic activity Biogenic iron nanospray as an effective agent for soiled menstrual pad - A novel approach** in 8<sup>th</sup> International Education and Innovative Sciences Congress held online on November 24-26, 2023, Ankata, Tukiye
9. Ms.Yuwvaranni.S has Presented a paper titled **Silver Nanoparticle Synthesis using combined leaf extract of *Calotropis Procera* and *Syzygium Cumini* and it's Antimicrobial Studies** in Euroasia congress on scientific research and recent trends XII held online on November 29 -30, 2023, Organized by Baku Eurasian University & IKSAD Institute, Baku, Azerbaijan

*Copy of paper presentation by Dr.G.Baskar*

**PP 157**

**A process model to investigate the biodiesel production from hybrid oil feedstocks using magnetically recyclable basic ionic liquid nanocatalyst**

Sangeetha Baskaran and Baskar Gurunathan

Department of Biotechnology, St. Joseph's College of Engineering, Chennai, Tamilnadu,  
India.

Email: bsangeetha151291@gmail.com

*Copy of paper presentation by Dr.G.Baskar*



*Copy of certificate Ms. S. Yuwaranni*




*Copy of certificate Ms. S. Yuwaranni*



*Copy of certificate Ms. S. Yuwaranni*

**DEPARTMENT OF CHEMICAL ENGINEERING**

S.No.	Title of the Events and Photographs	Details of the Event
1.	FDP/WORKSHOP/CONFERENCE	<p><b>Dr.N.Venkatesh</b>, Professor, Department of Chemical Engineering has attended a Five day ATAL - Faculty Development Program on <b>“Hydrogen Hybrid Technology for Cleaner Mobility Revolution at “</b> BMS Institute of Technology &amp; Management from <b>06.11.2023 – 11.11.2023.</b></p> 
2.	PATENTS PUBLISHED	<p><b>Dr.N.Venkatesh</b>, Professor, Department of Chemical Engineering has published a Patent on <b>“IOT based humanity prediction using time series based arima model”</b>  <b>Application No: 202341069305</b></p>

(12) PATENT APPLICATION PUBLICATION (3) Application No: 202341069360 A  
(3) INDIAN (3) Date of Application: 17/09/2023 (3) Publication Date: 24/11/2023  
(3) Title of the Invention: A NOVEL SYSTEM FOR IDENTIFYING CYBER SECURITY ATTACKS USING ARTIFICIAL INTELLIGENCE

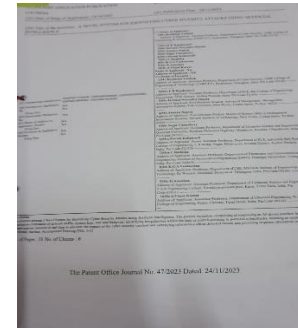
**ABSTRACT**  
The present invention discloses a novel system for identifying cyber security attacks using artificial intelligence. The system includes a data collection module, a data preprocessing module, a feature extraction module, a machine learning model, and a classification module. The data collection module collects network traffic data from various sources. The data preprocessing module cleans and normalizes the data. The feature extraction module extracts relevant features from the data. The machine learning model is trained on the extracted features to identify patterns of cyber security attacks. The classification module uses the trained model to classify incoming network traffic as either a normal traffic or a cyber security attack. The system is designed to be scalable and adaptable to different network environments.

**CLAIMS**  
1. A system for identifying cyber security attacks using artificial intelligence, comprising:  
a. a data collection module for collecting network traffic data;  
b. a data preprocessing module for cleaning and normalizing the data;  
c. a feature extraction module for extracting relevant features from the data;  
d. a machine learning model trained on the extracted features to identify patterns of cyber security attacks;  
e. a classification module for using the trained model to classify incoming network traffic as either a normal traffic or a cyber security attack.

**FIGURES**  
The figure shows a flowchart of the system architecture. It starts with a 'Data Collection' step, followed by 'Data Preprocessing', 'Feature Extraction', 'Machine Learning Model Training', and 'Classification'. The 'Classification' step leads to 'Normal Traffic' and 'Cyber Security Attack' outputs.

No. of Pages: 11 No. of Claims: 1

**Dr.S.Vinod Kumar, Associate Professor,Department of Chemical Engineering has published a patent on “A novel system for identifying cyber security attacks using artificial intelligence” Application No: 202341069360 A**





## DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

Sl. No.	Event with Photo	Description
1	MOCK INTERVIEW – II YEARS	<p><b>Date</b> : 4-11-23 <b>Venue</b> : Hazel hall – placement block <b>Nature of Event</b> : Mock Interview <b>Participants</b> : Engineering II year Students <b>Organized by</b> : Department of CSE</p> <p><b>Objective:</b></p> <ul style="list-style-type: none"><li>• To provides job seekers an opportunity to practice, receive feedback and improve their skills.</li></ul> <p><b>Outcome:</b></p> <ul style="list-style-type: none"><li>• It helps you develop interview strategies, enhance your communication skills, answer challenging questions, and ease the nerves that many experiences before an actual job interview</li></ul>



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O.T.R., CHENNAI - 60



DEPARTMENT OF  
**COMPUTER SCIENCE AND ENGINEERING**

ORGANIZES

## MOCK INTERVIEW

04 NOV 2023, 8 AM to 12 PM

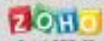
FOR II YEAR STUDENTS

VENUE: PLACEMENT BLOCK

GODIN HELDA J



Member Technical Staff

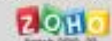


Batch 2019-23

JERROLD GIDEON S



Member of Technical Staff

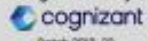


Batch 2019-23

ADHEMANYU M



Programmer Analyst



Batch 2018-22

AARON DANARAJ F



Junior Engineer - Software



Batch 2019-23

MURALIKRISHNA



Senior software developer



Batch 2016-20

RAHUL R



Engineer | Comcast



Batch 2019-23

SIVAPRAKASH M



Senior software Engineer

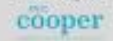


Batch 2019-23

AJAY A.D.



Software Engineer



Batch 2019-23

SANTHOSH KUMAR S



Member Technical Staff -



Batch 2019-23

St. Joseph's College of Engineering  
**YOU CHOOSE, WE DO IT**  
St. Joseph's Institute of Technology  
**WE MAKE YOU SHINE**

The Choice of  
**Disciplined Toppers**

2

CODECHAOS CARNIVAL 23



**Date** : 23-11-23  
**Venue** : CSE Lab  
**Nature of Event** : CODECHAOS CARNIVAL 23  
**Participants** : Engineering II year Students  
**Organized by** : Department of CSE


**Objective:**

- To get exposure where participants are invited to share their innovative ideas and collaborate with others to solve specific challenges or problems.

**Outcome:**

- The Competition is a pool of innovative ideas and collaborative projects aimed at addressing real-world challenges, fostering a culture of creativity and problem-solving.

## DEPARTMENT OF MECHANICAL ENGINEERING

Sl No	Name of the Activity	Remarks
1	 <p>The poster is for a Tech Talk event. At the top left, it features the 30th anniversary logo of St. Joseph's College of Engineering and Institute of Technology. The text reads 'DEPARTMENT OF MECHANICAL ENGINEERING' and 'Tech Talk'. The topic is 'TOPIC :Engineers for Life'. The date is 'DATE NOVEMBER 3-Friday' and the time is 'TIME 10:00 AM'. The location is 'CADLAB.MECHANICAL DEPARTMENT'. A circular portrait of Mr. Venkatesh Babu G is shown. Below the portrait, his name and title are listed: 'Venkatesh Babu G CO-FOUNDER AND PRESIDENT INVENT WELD AUTOMATION (P) LIMITED'. At the bottom, the college's motto 'St. Joseph's College of Engineering YOU CHOOSE, WE DO IT' and 'St. Joseph's Institute of Technology WE MAKE YOU SHINE' are displayed, along with the slogan 'The Choice of Disciplined Toppers'.</p>	<p>➤ A Tech Talk was organized for the third and second year students on November 03<sup>rd</sup> 2023 ,<i>Mr.Venkatesh Babu G</i>, Co founder and President, Invent Weld Automation(p) Limited gave glimpses on the topic “<b>Engineers for Life</b>”</p>

2

**St. JOSEPH'S**  
GROUP OF INSTITUTIONS  
OMR, CHENNAI - 119

**St. JOSEPH'S COLLEGE OF ENGINEERING**  
Department of Mechanical Engineering

*MOU Signed with*  
**R. K. Heavy Engineering Pvt. Ltd**  
02-11-2023

*Scope of MOU*  
*Internship, In-plant Training,*  
*Recruitment and Collaborative*  
*Activities*

**St. Joseph's College of Engineering**  
**YOU CHOOSE, WE DO IT**  
**St. Joseph's Institute of Technology**  
**WE MAKE YOU SHINE**

*The Choice of*  
**Disciplined Toppers**

- A MOU Was signed with **R.K. Heavy Engineering PVT Ltd** on November 02<sup>nd</sup> 2023. Industrial visits, Internship, In-Plant training and placement were some of the activities that are planned.

3

 **St. JOSEPH'S**  
GROUP OF INSTITUTIONS  
OMR, CHENNAI - 119

**St. JOSEPH'S COLLEGE OF ENGINEERING**  
Department of Mechanical Engineering



*MOU Signed with* **Burder Industries India Pvt. Ltd**  
03-11-2023  
*Scope of MOU*  
*Internship, In-plant Training, Recruitment and Collaborative Activities*

St. Joseph's College of Engineering  
**YOU CHOOSE, WE DO IT**  
St. Joseph's Institute of Technology  
**WE MAKE YOU SHINE**

**The Choice of  
Disciplined Toppers**

- A MOU Was signed with “:Burder Industries India Pvt Ltd” on November 03<sup>rd</sup> 2023.Industrial visits, Internship, In-Plant training and placement were some of the activities that are planned.



4



St. JOSEPH'S GROUP OF INSTITUTIONS  
ORIG. CHENNAI - 119

St. Joseph's College of Engineering  
Virtual Lab  
(IIT KHARAGPUR'S)  
VIRTUAL LAB  
INDUCTION SESSION  
for  
DEPARTMENT OF MECHANICAL ENGINEERING

09.11.2023  
09:30 AM TO 12:00 NOON

St. Joseph's College of Engineering  
YOU CHOOSE, WE DO IT  
St. Joseph's Institute of Technology  
WE MAKE YOU SHINE

The Choice of  
Disciplined Toppers

➤ “Virtual Lab” Induction session was organized by IIT karaghpur on November 09<sup>th</sup> 2023.

5



St. JOSEPH'S GROUP OF INSTITUTIONS  
ORIG. CHENNAI - 119

Installation of Office-bearers  
THE INDIAN INSTITUTE OF WELDING  
(A Member Society of the International Institute of Welding)  
16<sup>th</sup> November, 2023

by IIW representative Mr. Satheesh Kumar, MC Member,  
Managing Director, Meera Laser Solutions  
Department of Mechanical Engineering

St. Joseph's College of Engineering  
YOU CHOOSE, WE DO IT  
St. Joseph's Institute of Technology  
WE MAKE YOU SHINE

The Choice of  
Disciplined Toppers

➤ Installation of office-bearers of the Indian Institute of Welding was done on November 16<sup>th</sup> 2023, by Iiw representative Mr. Satheesh Kumar, MC member, Managing Director, Meera Laser Solution.



6 Patents Published

- Mr.G.kasirajan published an *Indian patent* titled, ”**Rigged Aerodynamic Diffuser Blades Mixed Flow Pump for Flow Resistance Control**” on Dec 08th 2023.

7 Papers Published

- Mr.M.Ganesh Published a paper titled ,”**Understanding the machining characteristics of Al6082 hybrid metal matrix composites milled under cryogenic cooling conditions**”, in the journal “*The International Journal of Advanced Manufacturing Technology*”
- Mr.M.Ganesh Published a paper titled, ”**A new approach of measurement and analysis of PVD - TiAlN coated carbide tools in machining of Monel 400 alloy under hybrid cooling conditions**” in the journal “*Measurement*”

## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

### 1. Publications:

The following staff members have published the research papers in Journal/Conferences organized during the month of November at International/National Level.

S. No.	Name of the Author	Paper Title	Name of the Conference/Journal	Publication Details	Date of Publication
1.	Subudhi, S., Dabhade, R.G., Shastri, R., ...Vignesh, G.D., Chaturvedi, A.	Empowering sustainable farming practices with AI-enabled interactive visualization of hyperspectral imaging data	Measurement: Sensors	Published online	NOV 2023
2.	Avudaiammal.R, Madhavan.J, Venkatesan.K, Rahayu.S.B	Intrinsic and extrinsic approaches to mitigate FWM	Optoelectronics and Advanced Materials - Rapid Communications	17(11-12), Scopus Indexed	NOV 2023


### 2. FDP/Workshop:

The following staff members have participated in various FDP/Workshop conducted by other institutions during the month of November at National/International level.

S. No.	Name of the Staff	FDP/ Workshop Program Title	Host Institution	Date	Duration
1.	P.Elaveni	Future Direction in Image Processing	SRM Institute of Science and Technology	30.10.23 to 4.11.2023	6 days
2.	P.Thenmozhi	Future Direction in Image Processing	SRM Institute of Science and Technology	30.10.23 to 4.11.2023	6 days

3.	E.Malarvizhi	Future Direction in Image Processing	SRM Institute of Science and Technology	30.10.23 to 4.11.2023	6 days
4.	Dr. D.Lakshmi	Future Direction in Image Processing	SRM Institute of Science and Technology	30.10.23 to 4.11.2023	6 days
5.	Dr.S.Vinayagapriya	Future Direction in Image Processing	SRM Institute of Science and Technology	30.10.23 to 4.11.2023	6 days
6.	Dr.S.Shirley Selvan	Future Direction in Image Processing	SRM Institute of Science and Technology	30.10.23 to 4.11.2023	6 days
7.	Dr.I.Johnsi Stella	Future Direction in Image Processing	SRM Institute of Science and Technology	30.10.23 to 4.11.2023	6 days

DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING

Sl. No.	Photographs Captured During Events	Corresponding remarks (Minimum 300 words)
1.	<p><b>Alumni talk</b></p>  <p><i>PIC: EVENT PHOTO</i></p>	<p><b>Date:</b> 9<sup>th</sup> Nov 23</p> <p>Our department organized an alumni talk for students on the topic <b>“IEEE Journey &amp; Placement Talks in Power Sector”</b> by our <b>Alumni Mr. Sharan Ramesh, (2018-2022 Batch)</b> Assistant Manager, ADANI POWER, Jaipur, on <b>09-11-2023</b> between 10:00 A.M to 11:40 A.M. The session was very interactive and useful to the students to get insights about placement opportunities in power sector.</p>

2. Alumni talk



PIC: EVENT PHOTO

**Date:** 24<sup>th</sup> Nov 23

Our department organized an alumni talk for students on the topic **“Setting up Goals and learning how not to give up on your goals!!”** by our Alumni **Mr. Kirthick Narain, (2004-2009 Batch) Senior Programmer Analyst, FIS Global Solutions, Chennai**, on **24-11-2023** between 09:45 A.M to 11:40 A.M. The session was very interactive and useful to the students to get insights about goal setting and methods to achieve it.

3. Guest Lecture



Our department organized a guest lecture for Ist year students on the topic **“Future of Telecommunication”** by **Dr. Manish Shukla, ITS Principal General Manager, BRBRAITT, Jabalpur** at AV Hall. He covered a wide range of topics, including telecommunication in past present and future, the top job opportunities in the field, and recent online courses that electrical engineers can take to stay up-to-date with emerging technologies. The lecture was informative and inspiring, and students found it to be a valuable learning experience.



PIC: EVENT POSTER

4. Placement club activities



PIC: EVENT POSTER

Bright Byte Coders Club recently hosted a comprehensive session for second-year Electrical and Electronic Engineering (EEE) students, on the topic “**Fundamentals of C programming**”. The primary goal was to boost problem-solving skills and augment their proficiency in C programming. The session covered Basic recursion, Nested looping, patterns, Pointers, participants were better equipped to tackle challenges in their academic coursework and future professional pursuits. Overall, the session served as a valuable resource for students seeking to excel in the dynamic field of Electrical and Electronic Engineering.

5. Placement club activities



PIC: EVENT POSTER

Bright Byte Coders Club recently hosted a comprehensive session for second-year Electrical and Electronic Engineering (EEE) students, on the topic “**Fundamentals of C programming**”. The primary goal was to boost problem-solving skills and augment their proficiency in C programming. The session covered Structures, unions, Structure padding, Precise problems. Overall, the session served as a valuable resource for students seeking to excel in the dynamic field of Electrical and Electronic Engineering.

6. IEEE activities



PIC: EVENT POSTER

The IEEE Women in Engineering Affinity group of St. Joseph's College of Engineering Student Branch successfully organised "Futurepreneurs Forum " - A Logo-Slogan Contest on the theme “Craft Your Brand” between November 10th and November 13th. The primary goal of the event is to promote in youngsters a spirit of entrepreneurship and encourage them to design their own brand's logo and tagline. The total number of participants is 30. The winners of the event - Abhishek Reddy Lingareddy (I-Place), Krithika V (II-Place) and Jaison Alexander (III-Place) were recognised in the official social media pages of IEEE WIE SJCE SB. E-Certificates were provided to all the winners and the participants.

7. IEEE activities



PIC: EVENT POSTER

IEEE IAS of St. Joseph's College of Engineering Student Chapter, in association with the IEEE Madras Section, conducted a webinar on the topic of 'ELECTRICAL MACHINES FOR RENEWABLES' on November 11, 2023, by Mr. Udochukwu B. Akuru, Senior Lecturer at Tshwane University of Technology, from 6:00 to 7:00 pm. During this session, he discussed renewables and electrical machines. Approximately 30 students participated in this event through Google Meet. At the end of the session, the resource person addressed queries from the students. As a token of appreciation, all participants were provided with E-certificates.

8. IEEE activities



PIC: EVENT POSTER

On the occasion of IEEE Day 2023, we, the IEEE Student Branch Chapter of St. Joseph's College of Engineering, organized a series of webinars titled "EXPERT TALKS - TALES OF TRIUMPH." The sixth session, held on 27-11-23, featured Mr. Prasanth Kumar A V, Ex-Publicity Team Lead IEEE SJCE SB, and Mr. Rajesh, PES YP Marketing and Sub-Committee Member. The main motive of this event was to bridge the gap between the past and present. During this session, the speaker shared his insights about his IEEE journey, and the interaction with students was highly engaging. Approximately 20 students participated through Google Meet. As a token of appreciation, E-certificates were issued to all the participants.

9. IEEE activities



PIC: EVENT POSTER

IEEE Power and Energy Society of St. Joseph's College of Engineering conducted "SONICMEET" – Unleash your voice, connect fearlessly from 26-11-23 to 28-11-23. The motive of the event was to break the insecurity to speak in front of people and to overcome the fear of self-introduction. Students from the pre-final year and second year of the Department of Electrical and Electronics Engineering participated. The event was conducted through an online platform where students were asked to record their voices and post them. Around 20 students took part in this event. The participants were rewarded with E-certificates as a token of appreciation.

10. IEEE activities



The IEEE Women in Engineering Affinity Group of St. Joseph's College of Engineering organised a webinar session on November 27, 2023, titled "FUTUREPRENEURS FORUM - Innovate - Connect - Thrive." The distinguished speaker for the session was Mr. Sreeraj, the Founder and CEO of EmCog Solutions, who shared his entrepreneurial journey under the theme "MY JOURNEY AS AN ENTREPRENEUR." During the webinar, Mr. Sreeraj focused on the current trends in electric vehicles, providing insightful perspectives on the rapidly evolving landscape of this industry. His presentation was not only informative but also highly relevant, given the increasing importance



PIC: EVENT POSTER

of electric vehicles in the global transportation sector. The event attracted over 30 participants, and Mr. Sreeraj engaged the audience effectively by addressing queries in an interactive manner. E-certificates were provided to all the participants.

## 1. IEEE activities



PIC: EVENT POSTER

The IEEE Manavar mandram of St. Joseph's College of Engineering Student Branch successfully organised "VANNAM KAVIYAL " - A Slogan Contest held on 27<sup>th</sup> November 2023. The total number of participants is 30. The winners of the event – Astina A (I-Place), Krithika V (II-Place) and Alex A (III-Place). E-Certificates were provided to all the winners and the participants.

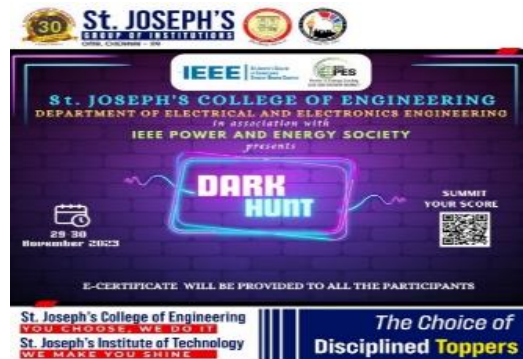
1. IEEE activities



PIC: EVENT POSTER

The IEEE Photonics Society, in association with the IEEE Student Branch at St. Joseph's College of Engineering, successfully organized a talk that featured the speaker, Mr. Vikram Yedavelli, who gave limelight on "Start Up Culture and His Start Up Journey," a talk about start-up culture and his startup journey, on November 28th. The primary goal of the event is to promote an idea of entrepreneurship, the challenges faced in it, and how it plays a vital role in today's market. The total number of participants is 25. E-certificates were provided to all the participants.

1. IEEE activities



PIC: EVENT POSTER

IEEE Power and Energy Society of St. Joseph's College of Engineering conducted a crossword puzzle event called "DARK HUNT" on 29-11-2023. The motive of the event was to improve the IQ level and problem-solving skills. Students from the pre-final year and second year participated. The event was conducted on the Eduplay platform, where students were asked to find the crossword, and the scores were posted in the Gform. Around 15 students took part in this event. The winners and participants were rewarded with E-certificates as a token of appreciation.

1. IEEE activities



PIC: EVENT POSTER

The IEEE tamil mandram in Engineering Affinity group of St. Joseph's College of Engineering Student Branch successfully organised "porulsol" - quiz Contest on 29/11/2023. The primary goal of the event is to promote youngsters and encourage them to know knowledge about tamil words and meanings. The total number of participants is 30. The winners of the event - Shyam Sundar M (I-Place), Stephan F(II-Place) and Vignesh raja S (III-Place) were recognised in the official social media pages of IEEE SJCE SBC. E-Certificates were provided to all the winners and the participants.

1. IEEE activities



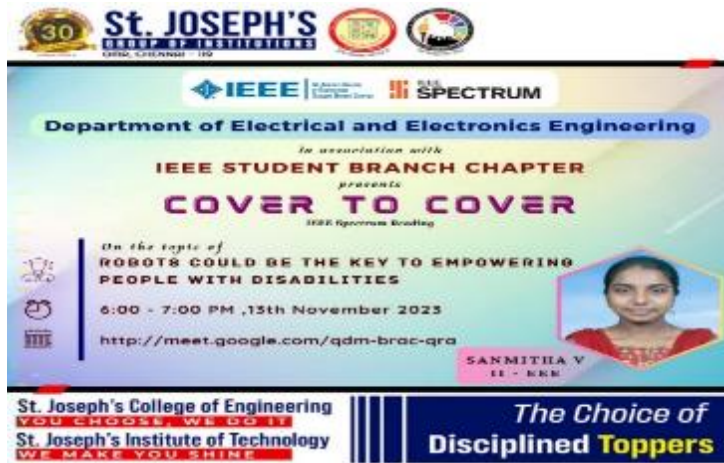
PIC: EVENT POSTER

IEEE Spectrum, is the world's largest professional organisation devoted to engineering and the applied sciences. It contains peer-reviewed feature articles pertaining to technology and science trends affecting business and society. This spectrum was conducted to enlighten the young minds and some skillful knowledge out of it. The speaker Ms.V.Dharani spoke on "Self-driving cars and the law". The speaker enlightened us with the idea that "a self-driving car navigating city streets strikes and kills a pedestrian. A lawsuit is sure to follow. But exactly what laws will apply? Nobody knows. Today, the law is scrambling to keep up with the technology, which is moving forward at a breakneck pace, thanks to efforts by Apple, Audi, BMW, Ford, General Motors, Google, Honda, Mercedes, Nissan, Nvidia, Tesla, Toyota, and Volkswagen. Google's prototype self-driving cars, with test drivers always ready to take control, are already



on city streets in Mountain View, Calif., and Austin, Texas. In the second half of 2015, Tesla Motors began allowing owners (not just test drivers) to switch on its Autopilot mode.” The participants had an amazing experience in the meet and enjoyed the entire session.

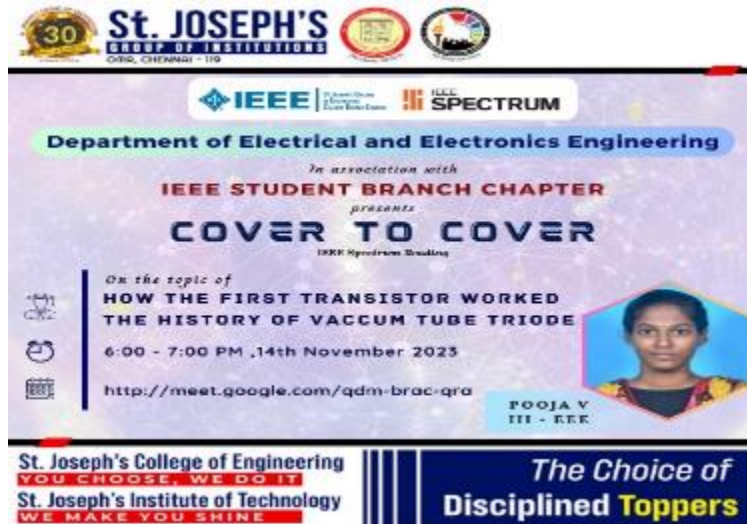
10 IEEE activities



PIC: EVENT POSTER

IEEE Spectrum, is the world’s largest professional organisation devoted to engineering and the applied sciences. It contains peer-reviewed feature articles pertaining to technology and science trends affecting business and society. This spectrum was conducted to enlighten the young minds and some skilled knowledge out of it. The speaker Ms. V. Sanmitha spoke on “Robots Could be the Key to Empowering People with Disabilities”. The speaker enlightened us with the idea that “robots have the potential to empower people with disabilities and provide them with much-needed independence. Evans collaborated with roboticists on a project called Robots for Humanity, which aimed to find ways of extending independence for people with disabilities and helping them live better and more fulfilling lives. This Robot Could Be the Key to Empowering People With Disabilities.” The participants had an amazing experience in the meet and enjoyed the entire session.

## 1| IEEE activities



PIC: EVENT POSTER

IEEE Spectrum, is the world's largest professional organisation devoted to engineering and the applied sciences. It contains peer-reviewed feature articles pertaining to technology and science trends affecting business and society. This spectrum was conducted to enlighten the young minds and some skillful knowledge out of it. The speaker Ms. V. Pooja spoke on "How the first transistor worked - The History of vacuum tube Triode". The speaker enlightened us with the idea that "the vacuum-tube triode was driving the entire enterprise of commercial radio, an industry worth more than a billion dollars in 1929. The goal was a three-terminal device made out of semiconductors that would accept a low-current signal into an input terminal and use it to control the flow of a larger current flowing between two other terminals, thereby amplifying the original signal. The first recorded instance of a working transistor was the legendary point-contact device built at AT&T Bell Telephone Laboratories in the fall of 1947. Though the point-contact transistor was the most important invention of the 20th century, there exists, surprisingly, no clear, complete, and authoritative account of how the thing actually worked." The participants had an amazing experience in the meet and enjoyed the entire session.

19 IEEE activities



PIC: EVENT POSTER

IEEE Spectrum, is the world's largest professional organisation devoted to engineering and the applied sciences. This spectrum was conducted to enlighten the young minds and some skillful knowledge out of it. The speaker Mr. V. Rakshit Roshan spoke on "Nvidia is Piloting a Generative AI for its Engineers". The speaker enlightened us with the idea that "Nvidia is testing a large-language-model AI called ChipNeMo to boost the productivity of its chip designers. The system is made up of 43 billion parameters that acquires its skills from one trillion tokens of data. It was trained again on 24 billion tokens of specialised data. The resulting model was submitted to "supervised fine-tuning," training on 130,000 sample conversations and designs. Chatbots can save senior designer's time by answering questions that require experience, like what a strange signal might mean or how a specific test should be run. The AI can retrieve documents from Nvidia's internal data to back up its suggestions, which improves the accuracy and reduces hallucination." The participants had an amazing experience in the meet and enjoyed the entire session.

19 IEEE activities

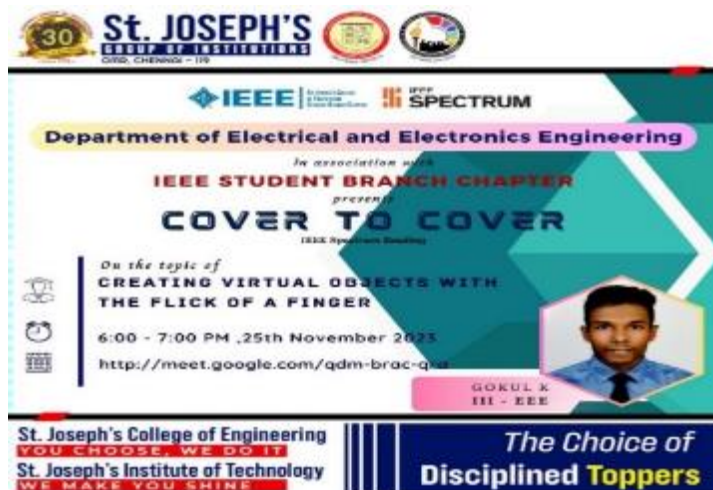
IEEE Spectrum, is the world's largest professional organisation devoted to engineering and the applied sciences. It contains peer-reviewed feature articles pertaining to technology and science trends affecting business and society. This spectrum was conducted to enlighten the young minds and some skillful knowledge out of it. The speaker Mr. K. Aakashvel spoke on "Could lithium extraction could be a game changer". The speaker enlightened us with the idea that Direct lithium extraction (DLE) technologies could be a "potential game-changing technology for lithium supply". Currently, lithium is extracted by pumping water up to the surface and letting it evaporate until the lithium salts become concentrated enough



PIC: EVENT POSTER

to filter out. DLE technologies take hours instead of months and involve chemically or physically filtering out lithium from brines and injecting the brine back underground. Summit Nanotech, one of about a dozen young companies piloting new DLE processes, aims to commercialise its DLE technology as early as 2025. The discovery of lithium deposits can be a potential “game changer” for India’s clean energy manufacturing ambitions in several ways, according to Siddharth Goel, senior policy advisor at the International Institute for Sustainable Development (IISD). “The participants had an amazing experience in the meet.

## 2) IEEE activities



PIC: EVENT POSTER

IEEE Spectrum, is the world’s largest professional organisation devoted to engineering and the applied sciences. It contains peer-reviewed feature articles pertaining to technology and science trends affecting business and society. This spectrum was conducted to enlighten the young minds and some skillful knowledge out of it. The speaker Mr. K. Gokul spoke on “Creating virtual objects with the flick of a finger”. The speaker enlightened us with the idea that “ Researchers at the University of Cambridge have developed a new system called HotGestures that allows users to create objects and designs in virtual environments with the flick of a finger. The HotGestures suite of virtual-reality commands enables easy and quick actions in-world such as spray-painting, scaling, duplicating, and cutting. HotGestures give users “superhuman“ ability to open and control tools in virtual reality. The results of two experiments showed that the approach was fast and easy to use.” The participants had an amazing experience in the meet and enjoyed the entire session.



2. CLUB activities

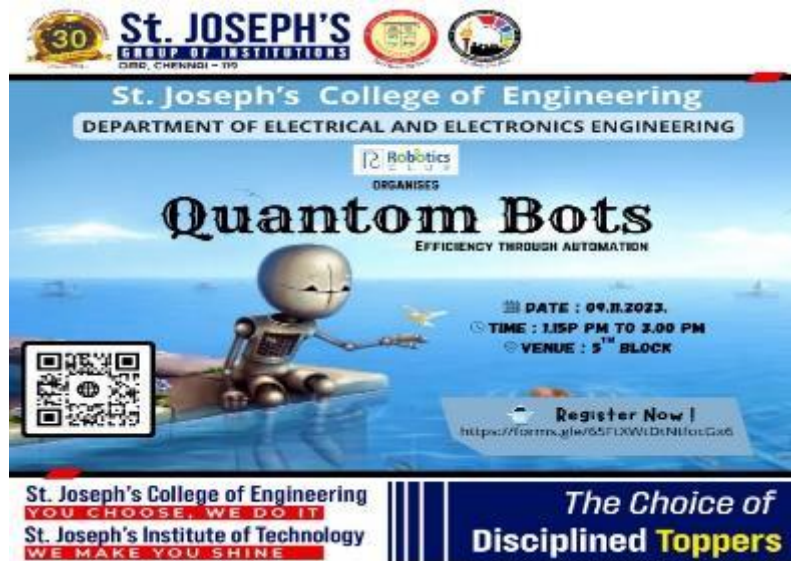


PIC: EVENT POSTER

The "ENSAV CLUB" at St. Joseph's College of Engineering, specializing in Electrical & Electronics Engineering, hosted a technical event "ENERTECH" on November 09, 2023. The event commenced at 1:40 pm and concluded at 3:00 pm, with all the members of the club.

**NUMBER OF PARTICIPANTS: 37 Members**

2. CLUB activities

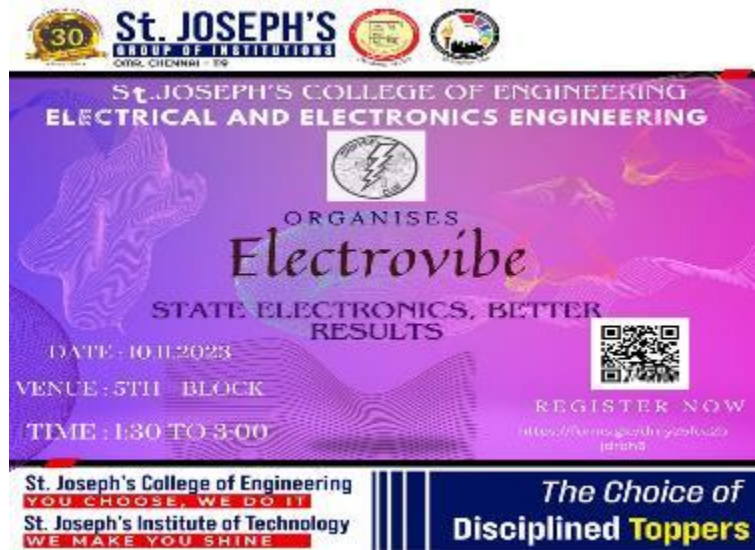


PIC: EVENT POSTER

The "ROBOTICS CLUB" at St. Joseph's College of Engineering, specializing in Electrical & Electronics Engineering, hosted a technical event "QUANTUM BOTS" on November 9, 2023. The event commenced at 1:15 pm and concluded at 3:00 pm, with all the members of the club.

**NUMBER OF PARTICIPANTS: 32 Members.**

2. CLUB activities

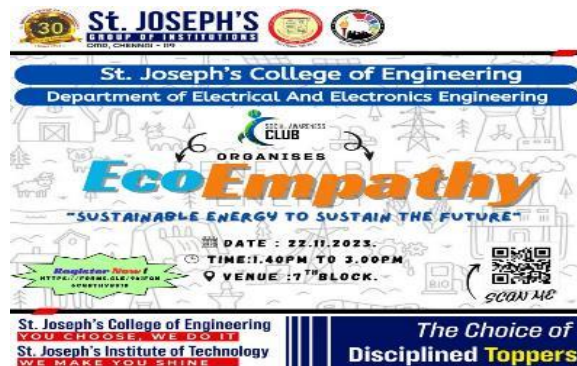


PIC: EVENT POSTER

St. Joseph's College of Engineering, (Electrical & Electronics Engineering) “**CHOPPERS CLUB**” organized a technical event "**ELECTRO VIBE**" on **10/11/2023**. This exclusive event commenced at 1.40pm with all the members of our club. The event concluded at 3.00pm with the photo session.

**NUMBER OF PARTICIPANTS:** 36 Members

2. CLUB activities



PIC: EVENT POSTER

St. Joseph's College of Engineering, (Electrical & Electronics Engineering) **SOCIAL AWARENESS CLUB** organized a technical event "**ECO-EMPATHY**" on **22/11/2023**. This exclusive event commenced at 1.40pm with all the members of our club. The event concluded at 3.00pm with the photo session.

**NUMBER OF PARTICIPANTS:** 38 Members

2. ISTE activity



PIC: EVENT POSTER

The "ISTE Student Chapter" at St. Joseph's College of Engineering, specializing in Electrical & Electronics Engineering, hosted a technical event "TECH SENSE" on November 10, 2023. The event commenced at 1:15 pm and concluded at 3:00 pm, with all the members of student chapter.

**NUMBER OF PARTICIPANTS:** 37 Members

2. ISTE activity



PIC: EVENT POSTER

The St. Joseph's ISTE Student Chapter successfully conducted a **Skill Development Workshop on 9 WATTS LED Lamp Manufacturing** tailored for 2<sup>nd</sup> year students. The workshop took place on November 1<sup>st</sup> and 2<sup>nd</sup> 2023, with a focus on empowering student entrepreneurs and delving into the intricacies of energy efficiency in LED technology. The primary goal of the workshop was to empower 2<sup>nd</sup> year students with practical insights into the art of energy efficiency in LED technology, thereby fostering entrepreneurship and environmental consciousness. The hands-on approach and focused curriculum contributed to a well-rounded learning



experience, aligning with the chapter's commitment to fostering holistic skill development among its members.

**NUMBER OF PARTICIPANTS:** 171 Members

2/ VOCABULARY TEST SERIES



PIC: EVENT POSTER

Our department of Electrical and Electronics Engineering, Lingual Clique club has organized word power vocabulary test series for the students. The test series helped the students to improve their communication skills.

Test 11- 3/11/23

Test 12- 10/11/23

Test 13- 24/11/23

29	<b>Faculty Development Program</b>	<p>Participated in NPTEL-AICTE FDP titled</p> <ol style="list-style-type: none"> <li>1. Dr.Jayarama Pradeep- Smart Grid: Basics to advanced technologies</li> <li>2. Dr.M.RameshBabu- Economic Operations and Control of Power System</li> <li>3. Dr.V.Chamundeeswari- Machine learning and Deep learning fundamental applications</li> <li>4. Ms.R.G.Nirmala- Smart Grid: Basics to advanced technologies</li> <li>5. Ms.S.P.Vedavalli- Research Methodology</li> <li>6. Mr.T.Sriananda Ganesh- Smart Grid: Basics to advanced technologies</li> <li>7. Ms.S.Gomathi- Research Methodology</li> <li>8. Mr.H.Prasad- Machine learning and Deep learning fundamental applications</li> <li>9. Mr.R.Siddhardhan- Applied Accelerated Artificial Intelligence</li> <li>10. Ms.C.Ramadevi- Research Methodology</li> </ol>
29	<b>Faculty awards and recognitions</b>	<p><b>Dr.N.Chidambararaj</b>, Acted as a resource person in 5 days virtual FDP on Recent Trends and Opportunities in Electrical Engineering on Topic “ Electric Vehicle technology challenges Analysis and development at MGR Educational and research Institute on 20..11.2023.</p>

**3 PLACEMENT DETAILS FOR THE  
MONTH OF OCTOBER 2023**

**2020-2024 Batch**

Total No of students placed = 35 Students

Total No of Offers = 40 Offers

No of students having single offers = 31

No of students having Double offers = 3

No of students having Triple offers = 1

No of students having Quadruple offers =

## DEPARTMENT OF MBA

### FACULTY PUBLICATIONS:

Dr. K. Sampath has published a paper on “ Deciphering the Indian Start-up Landscape: A Spot-light on Chennai’s Ecosystem, M. Rani Nimmagadda et al. (eds.), Proceedings of the 3rd International Conference on Reinventing Business Practices, Start-ups and Sustainability (ICRBSS 2023), Advances in Economics, Business and Management Research 277, [https://doi.org/10.2991/978-94-6463-374-0\\_5](https://doi.org/10.2991/978-94-6463-374-0_5)

Dr. A Menaga has published a paper on Analysing the Bibliometric of Circular Economy and Customer Behavior: A Study from 2018 to 2023, M. Rani Nimmagadda et al. (eds.), Proceedings of the 3rd International Conference on Reinventing Business Practices, Start-ups and Sustainability (ICRBSS 2023), Advances in Economics, Business and Management Research 277

### NATIONAL LEVEL INTERCOLLEGIATE SYMPOSIUM:



The National Level Symposium, NEGOCIO EXITOSO 2024 for all under graduate students was held from February 19 2024 to February 23 2024. St. Joseph’s College of Engineering and St. Joseph’s Institute of Technology joint together and organized a mega event for 5 days.

The symposium had an overwhelmed response drawing a huge number of students registrations from 31 colleges registered for the event and around 756 participated in the symposium.

**FUNDED PROJECTS:**

Project	Amount
Impact of special incentives schemes to promote literacy among schedule caste girls studying standard III to V and VI to VIII	Rs. 19, 74, 554
Tractor Hiring and other farm machineries for small and marginal farmers	Rs. 21, 70,000

**FACULTY PATENT PUBLICATION:**

Dr.A.Ammupriya has published a patent on An investigation in HR Analytics involving the impact on employee turnover.

Dr.K.Sampath has published a patent on Analysis of Brunei’s Small and Medium Sized businesses use of management accounting system.

Dr.A. Menaga has published a patent on Innovation of Business Models through the application of design thinking.

**WORKSHOP CONDUCTED:**

Mr.P.Surendiran David has conducted a workshop on Roadmap to Financial Independence for MBA students of St.Joseph’s College of Engineering.

## INDUSRIAL VISITS:



On Feb. 8th 2024, the 3rd-year MBA integrated 33 students accompanied by the faculty members Dr. Ramamoorthy and Dr. Subalya embarked on an insightful industrial visit to Modern Bakers (Madras) Pvt. Ltd.,



On 6<sup>th</sup> February 2024, III-MBA int (33) and IV MBA INT (35) students accompanied by Ms. Jebakerupa Roslin and Dr. Shumnuga Sundaram embarked on an insightful industrial visit to Aavin Milk factory Ambattur.


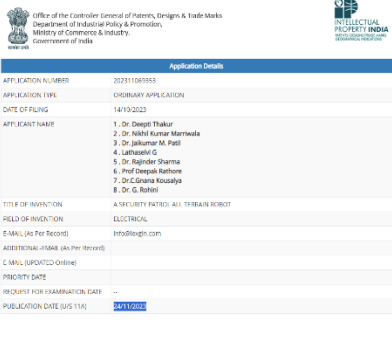
STUDENTS ACHIEVEMENTS:	STUDENTS	EVENTS	PRIZE
	Vijay Anand Rakshitha	Brainblitz	Winners
	Savithaa	Best Manager & Brianblitz	Runner up
	Vishwa S Reshma devi Manoj Kumaran K Vaikundamani Govindarajan	Business Plan	Runner up
	Hari Vijayan K Manikavasagam	web wave	Runner up




## DEPARTMENT OF SCIENCE


Sl. No.	Events	Remarks
4	FDP/Workshop/Conference	<p><b><i>NPTEL FDP / Online exams:</i></b>            Dr. S. Kiruba, Dr. N. Punitha, Dr. A. Arulmozhi, Dr. A. Mahalakshmi, Mr. S. Kaleel Mohamed Ibrahim, Dr. P. Krishnan, Dr. K. Satheshkumar, Dr. S. Rama, Dr. P. Saravanan, Dr. G. Murugan, Dr. V. Swarnalatha, Dr. A. Uma Devi, Dr. N.R. Rajagopalan, Dr. J. sharmila, Ms. S. Savitha, Dr. K. Jayamoorthy, Dr. B. Subash, Dr. S.M. Prakash, Dr. G. Sasikumar, Dr. T.L. Ajeesha have completed 12 weeks NPTEL courses (Aug-Oct 2023).</p> <p><b><i>FDP / Conferences attended:</i></b>            1. Dr. N.R. Rajagopalan, Dr. S.M. Prakash attended International webinar on “Paper Based Electrodes Fabrication and Challenges” conducted by “Bharath Institute of Higher Education and Research, Chennai.” On 03.11.2023.</p>
9	Awards/Prize won by students / Staff	<p><b><i>NPTEL Exams</i></b></p> <ol style="list-style-type: none"> <li>1.) <b><i>100% scorer</i></b> –Dr. N.R. Rajagopalan,</li> <li>2. <b><i>Gold</i></b> – Dr. A. Uma Devi, Dr. N.R. Rajagopalan, Dr. K. Jayamoorthy</li> <li>3. <b><i>Silver</i></b> – Dr. P. Saravanan, Dr. G. Murugan, Dr. V. Swarnalatha, Dr. N.R. Rajagopalan, Dr. J. Sharmila, Dr. S. Savitha, Dr. S.M. Prakash, Dr. G. Sasikumar, Dr. T.L. Ajeesha, Dr. S. Kiruba, Dr. N. Punitha</li> <li>4.) <b><i>1% Toppers</i></b> – Dr. N.R. Rajagopalan, Dr. A. Uma Devi</li> <li>5.) <b><i>2% Toppers</i></b> – Dr.S.M. Prakash</li> <li>6.) <b><i>5% Toppers</i></b> – Dr. P. Saravanan, Dr. S. Savitha, Dr. S. Kiruba</li> </ol>
11	Publications(only published) details	<p><b><i>Patent Publication:</i></b></p> <ol style="list-style-type: none"> <li>1. Dr. A. Mahalakshmi published a patent titled “Green Chemistry Approach to Noble metal nanoparticle formation with waste biomass - Application number 202341069380” –in the Indian Patent Journal dated 24.11.2023.</li> </ol>

## DEPARTMENT OF INFORMATION TECHNOLOGY

Sl. No.	Photographs Captured During Event/Screenshot	Corresponding remarks in regarding the status of activity execution																				
1	 <p style="text-align: center;"><b>Sample FDP Certificate</b></p>	<p style="text-align: center;"><b><u>FDP/Workshop attended by Faculty</u></b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">S.No</th> <th style="width: 30%;">Title of the topic</th> <th style="width: 25%;">Name of the Staff</th> <th style="width: 20%;">Conducted By</th> <th style="width: 20%;">Date</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1.</td> <td>Statistical and Probability Insights for Data Science: Applications and Usecases</td> <td style="text-align: center;">Ms.M Nivethitha Devi</td> <td style="text-align: center;">Vardhaman College of Engineering, Hyderabad</td> <td style="text-align: center;">6-11-23 to 10-11-23(5 days)</td> </tr> <tr> <td style="text-align: center;">2.</td> <td>CCS355 Deep Learning and Neural Networks</td> <td style="text-align: center;">Ms.A.Abdhur Rahman</td> <td style="text-align: center;">St.Joseph's Institute of Technology, Chennai</td> <td style="text-align: center;">01-11-23 to 02-11-23 (2 days)</td> </tr> <tr> <td style="text-align: center;">3.</td> <td>Machine Learning and Artificial Intelligence</td> <td style="text-align: center;">Ms.Hepsi Ajibah A S</td> <td style="text-align: center;">EXCELRL</td> <td style="text-align: center;">13-11-23 to 17-11-23(5 days)</td> </tr> </tbody> </table>	S.No	Title of the topic	Name of the Staff	Conducted By	Date	1.	Statistical and Probability Insights for Data Science: Applications and Usecases	Ms.M Nivethitha Devi	Vardhaman College of Engineering, Hyderabad	6-11-23 to 10-11-23(5 days)	2.	CCS355 Deep Learning and Neural Networks	Ms.A.Abdhur Rahman	St.Joseph's Institute of Technology, Chennai	01-11-23 to 02-11-23 (2 days)	3.	Machine Learning and Artificial Intelligence	Ms.Hepsi Ajibah A S	EXCELRL	13-11-23 to 17-11-23(5 days)
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3.	Machine Learning and Artificial Intelligence	Ms.Hepsi Ajibah A S	EXCELRL	13-11-23 to 17-11-23(5 days)																		
2	 <p style="text-align: center;"><b>Ms.Lathaselvi G</b> Published an Indian Patent</p>	<p style="text-align: center;"><b><u>Patent Published</u></b></p> <p><b>Title of the Invention:</b> A SECURITY PATROL ALL TERRAIN ROBOT</p> <p><b>Name of Inventor:</b></p> <ol style="list-style-type: none"> <li>1 . Dr. Deepti Thakur</li> <li>2 . Dr. Nikhil Kumar Marriwala</li> <li>3 . Dr. Jaikumar M. Patil</li> <li><b>4 . Lathaselvi G</b></li> <li>5 . Dr. Rajinder Sharma</li> <li>6 . Prof Deepak Rathore</li> <li>7 . Dr.C.Gnana Kousalya</li> <li>8 . Dr. G. Rohini</li> </ol> <p><b>Patent Application Number:</b> 202311069353</p> <p><b>Date of filing of Application:</b> 14/10/2023</p> <p><b>Publication Date:</b> 24/11/2023</p>																				


## DEPARTMENT OF MATHEMATICS AND ENGLISH

Events	Remarks						
<b>FDP/Workshop/Conference</b>							
	S.No	Name of the staff	Title of FDP / Workshop	Organized by	Mode	From	To
	1	Dr.G.Purushothaman	Introduction to methods of Applied mathematics	IIT Madras (NPTEL)	Online	July	October
	2	Dr.G.Venkat Narayanan	Mathematical methods and its Applications	IIT Madras (NPTEL)	Online	July	October
	3	Mr.S.Manikandaprabhu	Introduction to Probability Theory and Statistics	IIT Madras (NPTEL)	Online	July	October
	4	Mr.S.M.Balaji	Introduction to Probability Theory and Statistics	IIT Madras (NPTEL)	Online	July	October
	5	Dr.K.Sasikala	Introduction to Probability Theory and Statistics	IIT Madras (NPTEL)	Online	July	October
	6	Dr.N.Jose Parvin Praveena	Introduction to Probability Theory and Statistics	IIT Madras (NPTEL)	Online	July	October
	7	Ms.D.Arivukkodi	Introduction to Probability Theory and	IIT Madras	Online	July	October

			Statistics	(NPTEL)			
	8	Ms.B.Shoba	Introduction to Probability Theory and Statistics	IIT Madras (NPTEL)	Online	July	October
	9	Dr.K.Suresh	A Basic Course in Number Theory	IIT Madras (NPTEL)	Online	July	October
	10	Mr.K.Suresh	A Basic Course in Number Theory	IIT Madras (NPTEL)	Online	July	October
	11	Dr.G.Meena Devi	Essential Mathematics for Machine Learning	IIT Roorkee (NPTEL)	Online	July	October
	The Department of Mathematics hosted a two-day FDP on Recent Advances in Mathematical Analysis and its Applications on November 22-23, 2023. Distinguished Resource Persons, <b>Dr. J. Jesinthe Rosline</b> , Assistant Professor, Department of Mathematics, Auxilium College, Vellore, <b>Dr. J. Clement</b> , Assistant Professor, Department of Mathematics, VIT Chennai, <b>Dr. G. Britto Antony Xavier</b> , Associate Professor, Department of Mathematics, Sacred Heart College, Tirupattur, and <b>Dr. Anitha Philips Aloysius</b> , Associate Professor, Department of Computer Science, Kuwait University, Kuwait all delivered speeches.						
<b>Publications(only published) details</b>	<ol style="list-style-type: none"> <li>1. S. Gomathy,<b>B. Shoba</b>,A. Rajkumar,Broumi Said. "Study on Student's Performance using Single Valued Decagonal Neutrosophic Number in Decision Making Problem." International Journal of Neutrosophic Science, 22 no. 2 (2023): 68-77. SCOPUS</li> <li>2. M. U. Jayanth Sastri, I. Paulraj Jayasimman, <b>N. Jose Parvin Praveena</b>, A. Rajkumar; A research on symptoms of COVID-19 using new trapezoidal combined overlap fuzzy cognitive maps (TPCOBFCMs). AIP Conf. Proc. 14 July 2023; 2797 (1): 020010. SCOPUS</li> <li>3. Saikumari, N., <b>Sudhakhar, K.S.</b> Extensive studies on the electrochemical, photocatalytic and antimicrobial applications of bio assisted nano titania. SN Appl. Sci. 5, 308 (2023). <a href="https://doi.org/10.1007/s42452-023-05536-z">https://doi.org/10.1007/s42452-023-05536-z</a> SCIE</li> </ol>						

## DEPARTMENT OF CIVIL ENGINEERING

Sl. No.	Photographs Captured During Events (Briefs About the Photographs)	Corresponding remarks (Minimum 300 words) in regarding the status of activity execution stating
1.	<b>Publications (only published) details</b>	<ul style="list-style-type: none"> <li>● S Thenmozhi, Published a paper titled “Experimental Study On High Performance Concrete Using Rice Husk Ash”, Materials Today: Proceedings, 11 November 2023.</li> <li>● S Thenmozhi, Published a paper titles on “Experimental Study On Brick Performance Using Quartz Material And Woods Ash”, Materials Today: Proceedings, 27th November 2023</li> <li>● R.Ruthra published a paper titled on “Smart Irrigation System based on the Type of Crop using IoT” in 7th International Conference on ISMAC (IoT in Social, Mobile, Analytics and Cloud) (ISMAC).</li> </ul>
2.	<b>Other activities (if any)</b>	Mr. Shivaharan R of 2016 -2020 Batch delivered an Alumni Talk on the topic Awareness about Career in Defence Services.The event conducted on 23.11.2023.

		 <p>St. JOSEPH'S 1913-2023</p> <p>ST. JOSEPH'S COLLEGE OF ENGINEERING DEPARTMENT OF CIVIL ENGINEERING</p> <p>DATE: 23/11/2023</p> <p>ALUMNI TALK</p> <p>"AWARENESS ABOUT CAREER IN DEFENCE SERVICES"</p> <p>SRINIVASARAO B. BATCH: (2016-2020)</p> <p>St. Joseph's College of Engineering YOU CHOOSE WE DO IT St. Joseph's Institute of Technology WE MAKE YOU SHINE</p> <p>The Choice of Disciplined Toppers</p>
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