



# KONGU ENGINEERING COLLEGE

## CAMPUS R&D NEWS



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### PH.D VIVA-VOCE COMPLETED

1. Mr.S.Ragul, Research Scholar, Department of Electrical and Electronics Engineering defended his thesis entitled "Optimization of BLDC drive control for power converters in renewable energy applications" on 05.12.2025 under the guidance of Dr.M.Suresh(RC) / EEE.
2. Ms.K.Venu, Research Scholar, Department of Computer Science and Engineering defended her thesis entitled "An enhanced EEG signal channel selection and classification of motor imagery task based brain computer interface using optimized deep learning technique" on 24.12.2025 under the guidance of Dr.P.Natesan / CSE.
3. Ms.D.Shobana, Research Scholar, Department of Physics defended her thesis entitled "Spectroscopic and computational investigations on certain aromatic compounds" on 26.12.2025 under the guidance of Dr.S.Sudha / Physics.
4. Mr.N.Karthikeyan, Research Scholar, Department of Computer Science and Engineering defended his thesis entitled "A comprehensive study of secure communication in internet of vehicles networks through multi-layered security frameworks" on 29.12.2025 under the guidance of Dr.S.Shanthi / CSE.

### R&D PROJECTS SACTIONED (2025-2026)

1. Dr.K.Gomathi / MTS, received research grant of Rs.54,00,000/- for the project entitled "Evaluating natural carbon dioxide as a sustainable replacement for hydro fluoro carbon (HFC) in cold room refrigeration and air conditioning systems for food industries" under TIDCO / URP - Research Grants Scheme on 25.11.2025, Lr.No.D/TIDCO/URP-C/URP Grant/2025/08.

### REFERRED JOURNAL PUBLICATIONS

1. Karthikeyan, S., Yeswanth Myilsamy., Nareshkumar Jayaseelan., Jotheeswaran Pichaimuthu., and Gokul Rajagopal., (2025). Study on the Behaviour of Encased Steel Concrete Composite Beams under Flexure. *In Asian Symposium on Materials and Processing*, pp.225-242.
2. Karthikeyan, S., Yeswanth Myilsamy., Giritharan Samynathan., Kawin Ramesh., and Magudeshwaran Murugan., (2025). Compressive Behaviour of Encased Steel Concrete Composite Section using Self Compacting Concrete with Rubber Powder. *In Asian Symposium on Materials and Processing*, pp.243-259.
3. Senthil, S.M., Praveen Kumar, S., Bhuvanesh Kumar, M., and Milon Selvam Dennison., (2025). Optimization of tensile strength and hardness for friction stir welded aa6063-t6 pipes using RSM based grey relational analysis and desirability function approach. *Discover Materials*, Vol.5, Article No.281.
4. Karthikeyan, R., Thangavel, P., and Raveendran, P.S., (2025). Comparative Assessment of Indirect Solar Dryer and Screw Conveyor-Based Solar Dryer During Drying Ivy Gourd: A Techno-Economic Analysis. *Journal of Food Process Engineering*, Vol.48(12), p.e70296.
5. Raja, G., Gobinath Velu Kaliyannan., Rajasekar Rathanasamy., and Prashanth Shanmugam., (2025). Enhanced Photovoltaic Performance of Silicon Solar Cells using 3D Printed COC/MgF<sub>2</sub> Antireflective Sheets: Optimization of MgF<sub>2</sub> Loading for Maximum Efficiency. *Silicon*, Vol.17, pp.4147-4159.
6. Shwetha, G.K., Avasthi, A., Kumar, M., Chandra, S., and Hari, B.S., (2025). Integrating Visual Intelligence with Federated Learning and IoT in Healthcare. *In Combining Visual Intelligence and Federated Learning in Smart Healthcare*, pp.141-170.
7. Rajesh, S., Madhankumar, S., Arunkumar, P.M., Vignesh, T., and Sekar, S.D., (2025). Drying kinetics, energy, exergy, and economic aspects of indirect solar dryer with phase change material. *Sol Energy*, Vol.305, p.114287.
8. Priyanka, E.B., Thangavel, S., Sathiskumar, S. and Jose, A.A., (2025). Challenges and Future Directions in Optical Sensors and Distributed Sensing Technologies. *In Optical Sensors and Distributed Sensing*, pp.339-351.

9. Sellappan, S.N., Junfithrana, A.P., Priyanka, E.B., Ridha, F., Chinnappandi, M., and Subramaniam, T., (2025). Analysis of Quadrotor Design UAV Utilizing Biplane Configuration with NACA Airfoils. *Engineering Proceedings*, Vol.107(1), Article No.109.
10. Dhanalakshmi, M., Weiwei Jiang., UmaMaheswara Reddy, S., Arun Kumar, S., Deobarat Kumar Chandan., Venkatamuni, T., Nooray Sashmi, S., Yagya Dutta Dwivedi., and Arun Chokkalingam., (2025). Solar-Responsive Photo-Thermal Polymer Composites with Carbon Nanostructures for On-Demand Water Purification. *Journal of Polymer & Composites*, Vol.13(6), pp.199-209.
11. Babu, B.H., Marotrao, S.S. uk., Shanmugam, A., Sobhanachalam, P., Prasad, V.V., Priya, R., and Muthuvel, S., (2025). Enhancing mechanical properties of composite resin/hydroxyapatite nanocomposite for dental and orthopedic applications: Synthesis, characterization, and bioactivity assessment. *AIP Conference Proceedings*, Vol.3267(1), p.020297.
12. Gomathi, K., Sathiyavathi, S., Thakshshan, S.P., Rithik, T.M., and Pradeep Kumar, S., (2025). Fall detection analysis using the k-nearest neighbor algorithm. *Journal of Applied Research and Technology*, Vol.23(6), pp.536-545.
13. Srinivasan Singaram., Aravindan Palaniappan., and Suresh Muthusamy., (2025). Development and evaluation of novel energy management strategies based on hybrid energy storage systems for extended range electric vehicles to enhance battery lifespan and reduce fuel consumption. *Journal of Energy Storage*, Vol.143, p.119613.
14. Murali Krishna, T., Siva Ganesh Malla., Welson Bassi., Yuvaraj, R., Gowri Shankar, V., Krishna Chaithanya Janapati., and Surendar, V., (2025). Power Quality Enhancement of Wind-PV-Battery Powered Hybrid AC/DC Microgrid with ANN-LSTM Controllers. *5<sup>th</sup> International Conference on Sustainable Energy and Future Electric Transportation*, pp.1-6, IEEE.
15. Vaigundamoorthi, M., Karthick, S., Chandrika, V.S., Chithra, D., Balaramakrishna, K.V., Lakshmi Khandan, K., Lakshmana Phaneendra Maguluri., Chandrasekar, S., and Janarthanan, M., (2025). Design and implementation of solar-grid based charging station for electric vehicle with fault detection method using R-i and IoT processor. *International Journal of Applied Power Engineering*, Vol.14(4), pp.794-802.
16. Drammeh, Maimuna, Ravi Samikannu, Abid Yahya, Maruliya Begam Kadarmydeen, Kavitha, R., Kanimozhi Gunasekaran., Meeradevi, T., and Gladys Gamariel., (2025). Optimal energy management system for a community microgrid: A case study from the Gambia. *Utilities Policy*, Vol.99, p.102132.
17. Begum, I.P., Rajeshkumar, K., Divya, A., Meenakshi, S.K., Sasikala, S., and Hussain, M.A., (2025). Artificial Intelligence-Based Sensor System for Precision Monitoring in Subsurface Drip Irrigation. *Journal of Environmental Protection and Ecology*, Vol.26(7), pp.2735-2745.
18. Sudha, S., Krishnaraj, V., Elango, S., Thurai Raaj, V.B., Baskar, D., and Sharmila, M., (2025). Arrhythmia Detection from Heart Electrical Signal using 1-D Convolution Neural Network. *3<sup>rd</sup> International Conference on Artificial Intelligence and Machine Learning Applications Theme: Healthcare and Internet of Things*, pp.1-7, IEEE.
19. Nivetha, B., Gomathi, P.S., Abirami, T., Nanjundan, M., Raja, G.B., and Gowsika, B., (2025). Transformer-Based Multi-Modal Deep Learning Framework for Early Disease Prognosis using EHR and Medical Imaging Data. *6<sup>th</sup> International Conference on Inventive Research in Computing Applications (ICIRCA)*, pp.983-990, IEEE.
20. Dinesh, K., Rajavel, R., Harimoorthy, K., and Pitchai, A.A., (2025). Scalable scheduling and resource management framework for cloud-native B2B applications. *Scientific Reports*, Vol.24(15), p.44500.
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28. Nithya, T., Chandrasekarn, V., Mahendrakumar, S., Kanuramoorthi, R., Kalaivani, P., Parvathi, M., Keerthana, N.V., Gomathi, V., Suganya, D., and Maheswari, R., (2025). Optimized Phishing Detection Through URL Analysis by a Gradient Boosting-RNN Ensemble Model: A Hybridization Approach. *AI-Driven Security and Intelligence in Cloud and Internet of Things Systems*, pp.159-186.
29. Chinnasamy, R., Malliga, S., Sengupta, N., and Ramkumar, MP., (2025). Federated Learning for Sustainable Energy Efficiency: A Privacy-Preserving Artificial Intelligence Approach with Attention Mechanisms. *In Integrating Big Data and IoT for Enhanced Decision-Making Systems in Business*, Vol.2, pp.155-166.
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33. Thangamani, R., Vimaladevi, M., Kamalam, G.K., and Subramanian, K.M., (2025). Securing the Future: Quantum Computing in Cybersecurity. In: Goyal, S.B., Kumar, V., Islam, S.M.N., Ghai, D. (eds) *Quantum Computing, Cyber Security and Cryptography*.
34. Rajalaxmi, R.R., Sudharsana, P.P., and Thangarajan, R., (2025). An Effective LSTM – Autoencoder Approach with Acoustic Features in Indian Classical Music Raga Recognition. In: Chakravarthi, B.R., et al. *Speech and Language Technologies for Low-Resource Languages. Communications in Computer and Information Science*, Vol.2656.
35. Kavitha, S., Selvakumar, P., Gajendran, T., and Yuvaraj, S., (2025). Enhancement of consolidated bioprocessing for bioethanol conversion from water hyacinth using the wild and mutant bacterial strains. *International Journal of Chemical Engineering*, Vol.2025, Article No.6648307.
36. Raynukaazhakarsamy., Raynukaazhakarsamy., Mayormonte., Marvin Alazzam Malik., Udayanatchi, K.V., Mahmoud Mina., and Bhavani, P., (2025). Leveraging Graph Neural Networks for Fault Tolerance in Network Infrastructures. *International Conference on Advances in Computing Research on Science Engineering and Technology*, IEEE.
37. Ghulam Muhiuddin., Ramya, N., Farshid Mofidnakhaci., Hossein Rashmanlou., Farah Maqsood., and Noura Aldossary., (2025). Stagnation-point flow of a Sisko nanofluid over a stretching surface with heat generation and nano-transport phenomena. *Scientific Reports*, Article No.1603.
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39. Arun Jeganatha Joseph, P., Mahesvaran, K., Vijayakumar, M., Satendra Kumar., and Arul Rayappan, I., (2025). Exploring Dy<sup>3+</sup> induced spectroscopic and luminescence behavior in lead alumino-magnesium boro phosphate glasses for solid -state lighting. *Journal of Materials Science: Materials in Electronics*, Vol.36, Article No.2280.



40. Gunasekaran, M., Srinivasan, P., Mohan, K.S., Mohamed Kasim Sheit, H., Rathi, V., and Vanchinathan, S., (2025). Expired pharmaceutical compounds as green corrosion inhibitors for low carbon steel in acidic conditions. *Discover Chemistry*, Vol.2, Article No.238.
41. Selvakumar, P., Nikitha Sreekanthaswamy., Anubhav, Santosh Kumar Nathsharma., Satyajit M. Deshmukh., Revathi, A., and Manjunath, T.C., (2025). Air Pollution control and Green chemistry solutions, *IGI Global Scientific Publishing*.
42. Ramasamy, A., Sundharesalingam, P., Manickam, D.R., and Rajendran, G., (2025). Leveraging Blockchain Technology to Enhance Data Security and Elevate Brand Reputation. *International Conference on Engineering Innovations and Technologies*, pp.519-524.
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44. Vetrivel, S.C., Sabareeshwari, V., Ambikapathi, R., Arun, V.P., and Sowmiya, K.C., (2025). Smart Aging: Harnessing Artificial Intelligence in Elderly Healthcare. *Artificial Intelligence in Healthcare for the Elderly*, Wiley, pp.1-31.
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46. Vetrivel, S.C., Vidhyapriya, P., and Arun, V.P., (2025). Integrating AI in Secondary Social Studies. In M. Kessinger, G. Nelson, L. Lennex, & K. Nettleton (Eds.), *Examining AI Disruption in Educational Settings: Challenges and Opportunities*, pp.133-160, IGI Global.
47. Vetrivel, S.C., and Mohanasundaram, T., (2025). Harnessing the Power of Social Media for Health Promotion and Disease Prevention in Rishabha Malviya, Swati Verma, Harish Kumar (eds) *Intelligent Data Analytics in Media Communication to Improve Public Health Care*, Apple Academic Press, Taylor & Francis, Vol.1, pp.20.
48. Vetrivel, S.C., Vidhyapriya, P., Arun, V.P., and Sabareeshwari, V., (2025). Ethical and Legal Considerations in AI-Generated Media. In G. Revathy, A. Natarajan, & N. Kshetri (Eds.), *Securing AI-Generated Media with Blockchain Technologies*, pp.1-34, IGI Global.
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50. Vetrivel, S.C., Vidhyapriya, P., and Arun, V.P. (2025). The Challenges of Graph Neural Networks. In: Chelliah, P.R., Whig, P., Nagarajan, S., Sakthivel, U., Yathiraju, N. (eds) *Graph Neural Networks: Essentials and Use Cases*. Springer, Cham.
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52. Vetrivel, S.C., Arun, V.P., Maheswari, R., and Sabareeshwari, V., (2025). Technology-Driven Smart Society. In E. Babulak (Ed.), *The Social Impact of Next-Generation Smart Cyber Technology*, pp.345-372, IGI Global.
53. Deepa, S., and Praveenkumar, M., (2025). Deep Learning Based Monkeypox Virus Classification using VGG19. *9<sup>th</sup> International Conference on Inventive Systems and Control (ICISC)*, pp.1387-1393.
54. Vedhadharshini, R., and Ananthi, P., (2025). Stock Market Prediction using Deep Learning Technique. *2<sup>nd</sup> International Conference on Intelligent Technologies for Sustainable Electric and Communications Systems*, pp.1-6.

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