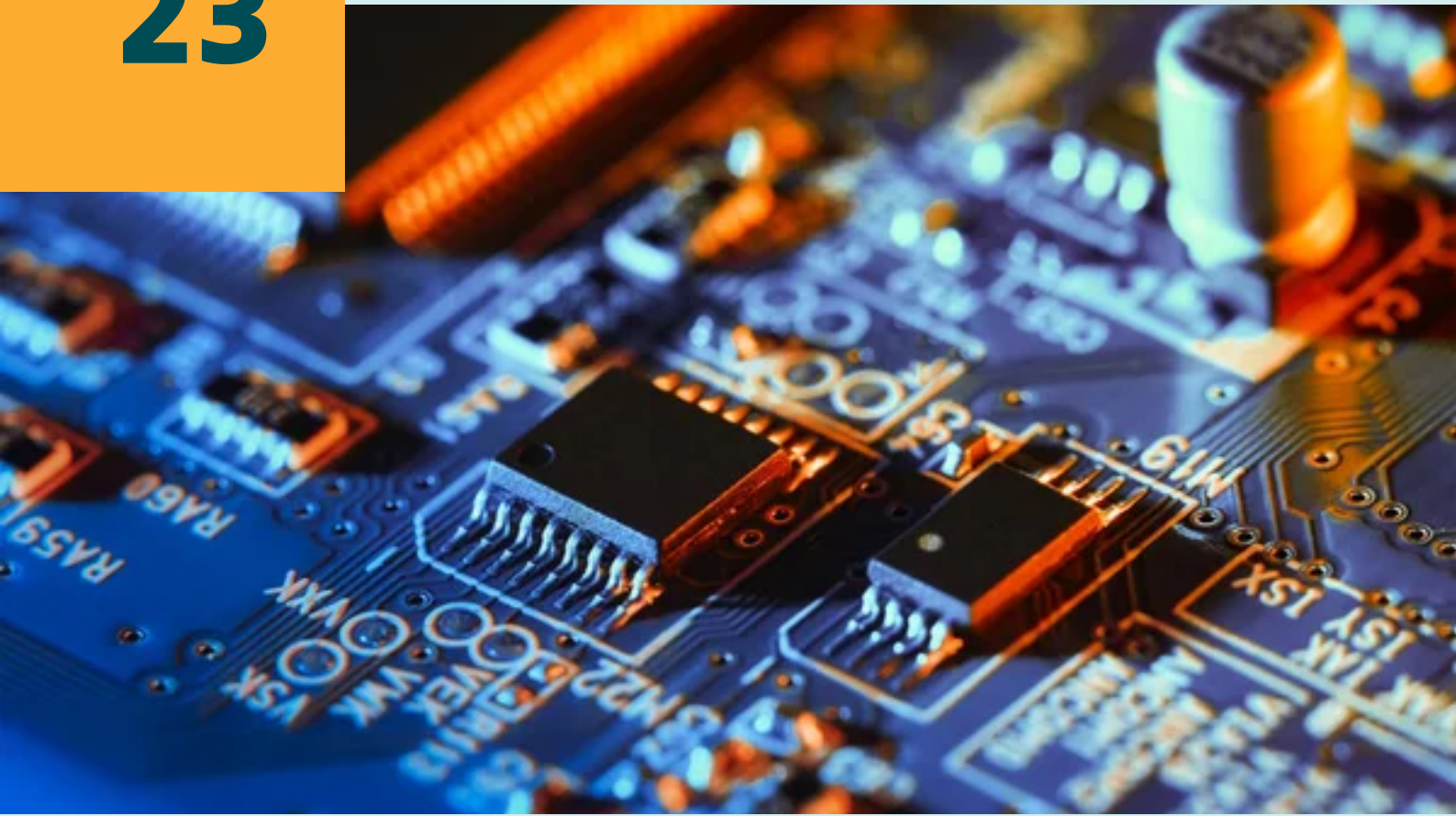


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VIT[®]
Vellore Institute of Technology
(Deemed to be University under section 3 of UGC Act, 1956)

SCHOOL OF ELECTRONICS ENGINEERING



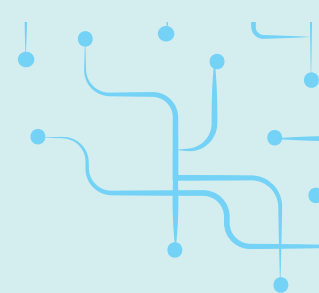
Tech-Tronics

TRIBUNE

E-NEWSLETTER:

Volume 4 Issue 2

Apr - Jun ' 23

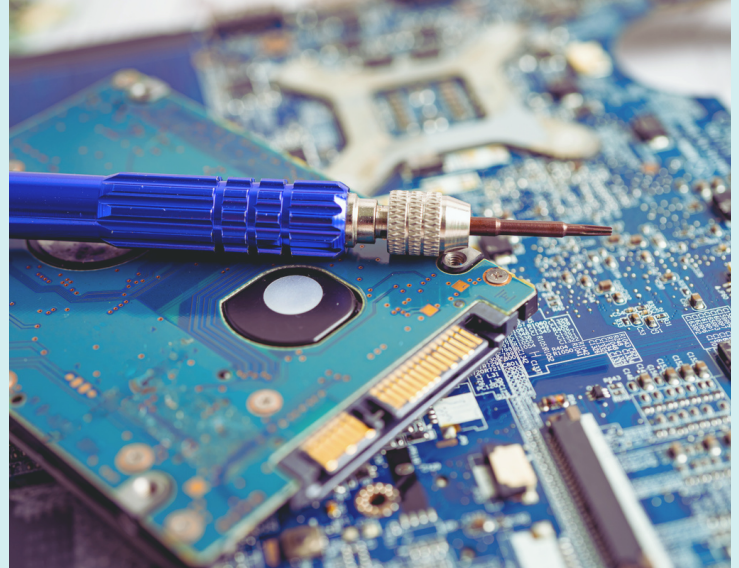


VISION

To be a leader in impacting in-depth and futuristic knowledge of electronics engineering that would cater to the need of industry, research and society.

HIGHLIGHTS

- **Vision & Mission**
- **Dean's Message**
- **Faculty Achievements**
- **ViTECoN 2023**
- **Events Organized**
- **Selected Publications**
- **Sponsored Research**
- **Consultancy Projects**
- **Editorial Committee**



MISSION

- To create and maintain an environment of excellence in teaching, learning and applied research in the fields of electronics and communication engineering and allied disciplines which pioneer sustainable growth.
- To instill in graduates the necessary professionalism, ethics, knowledge and skills which would enable them to be lifelong learners who are able to solve current and future problems and improve the quality of human life.

DEAN'S MESSAGE

Message from SENSE Dean

Dear VITians,

I trust this message finds you in good health and high spirits. Today, I am delighted to bring you important updates and announcements concerning our esteemed institution's School of Electronics Engineering.

In light of the ever-evolving landscape of electronics engineering, we have embarked on a thorough review of our curriculum. Our goal is to ensure that our programs remain at the forefront of technological advancements, equipping our students with the skills and knowledge essential for success in the industry. Anticipate exciting changes in our course offerings, upgraded laboratory facilities, and enriched project-based learning opportunities.

In our commitment to fostering innovation and facilitating groundbreaking research, we have actively pursued collaborations with industry partners and secured additional funding for research projects. These efforts will provide our faculty and students with expanded opportunities to delve into cutting-edge technologies, engage in multidisciplinary research endeavors, and contribute to addressing real-world challenges.

To bridge the gap between academia and industry, we are proactively establishing partnerships and collaborations with leading technology companies. These collaborations will enable our students to gain practical insights through internships, industrial training programs, and guest lectures from industry experts. We firmly believe that these interactions will enhance your professional growth and help you establish valuable industry connections.

I am thrilled to present the 4th Volume, 2nd Issue of our ENewsletter, "Tech-Tronics Tribune," by the School of Electronics Engineering (SENSE) for the second quarter of 2023. This edition showcases the well-deserved honors and recognitions bestowed upon both faculty and students within the SENSE family for the period of April to June 2023. I extend my heartfelt gratitude to all members of the SENSE family for their unwavering support and contributions that have made this newsletter possible. Your continued support is deeply appreciated, and we eagerly anticipate realizing the institute's mission and vision.

Thank you, and we look forward to an exciting journey ahead.



Dr. Sivanantham S.
Professor & Dean
School of Electronics Engineering
Vellore Institute of Technology, Vellore
dean.sense@vit.ac.in

FACULTY

ACHIEVEMENTS

Guest Lectures Delivered

- Dr. Palla Penchalaiah delivered a lecture titled "Recent Trends in Optical Wireless Power Transfer" at Chadalawada Ramanamma Engineering College in Tirupati, India, on June 30, 2023.
- Dr. Govardhan K. presented a lecture on "Modelling and Optimization of Nano-additives Infused Pyrolysis Process to Enhance Syngas Generation and Optimal Energy Recovery from Biowaste" at the Material Research Society in collaboration with NTU NUS ASTAR, Singapore, on June 29, 2023.
- Dr. Prakash R. shared insights on "IoT Ecosystems" during a lecture at Sairam Engineering College in Chennai, India, on June 27, 2023.
- Dr. Govardhan K. delivered a lecture on the same topic, "Modelling and Optimization of Nano-additives Infused Pyrolysis Process to Enhance Syngas Generation and Optimal Energy Recovery from Biowaste," at the Material Research Society in collaboration with NTU NUS ASTAR, Singapore, on June 26, 2023.
- Dr. Naveen Mishra discussed "Reconfigurable Antennas for Sub-6 GHz Applications" at the College of Engineering and Rural Technology in Meerut, India, on June 26, 2023.
- Dr. Vijendra Babu V. delivered a lecture titled "Internet of Medical Things (IoMT) - Transforming Healthcare" at PBR Visvodaya Institute of Technology and Science in Kavali, Andhra Pradesh, India, on June 24, 2023.
- Dr. Biswajit Dwivedy explored the "Role of Data Analytics in Internet of Things" during a lecture at Vellore Institute of Technology in Chennai, India, on June 23, 2023.
- Dr. Biswajit Dwivedy discussed "Data Analytics using Python for IoT-based System Implementation" at Vellore Institute of Technology in Chennai, India, on June 23, 2023.
- Dr. Abdul Majeed K shared insights on "Dynamic Loop Band, Fast Locking, and Low Noise PLL" at VIT Chennai, India, on June 22, 2023.
- Dr. Hemprasad Yashwant Patil conducted a lecture on "Artificial Neural Networks and CNN using Python" at the Finolex Academy of Management and Technology in Ratnagiri, India, on June 20, 2023.

Guest Lectures Delivered

- Dr. Gopinath P. delved into "Embedded and Communication Systems" at Kumaraguru College of Technology in Coimbatore, India, on June 17, 2023.
- Dr. Kittur Harish Mallikarjun delivered multiple lectures at SDMCET Dharwad in Dharwad, India, on June 16, 2023.
- Dr. Pradheep T provided insights into "Technological Perspective and Research Trends in Integrated Circuit Fabrication" at the University of Madras in Chennai, India, on June 15, 2023.
- Dr. Idrasen Singh presented on "Machine Learning Techniques for 5G and Beyond" at the National Institute of Technology Kurukshetra in Kurukshetra, India, on June 9, 2023.
- Dr. Elizabeth Rufus shared her expertise on "Incubation and Innovation Ecosystem" at the Christian Medical College and Hospital in Vellore, India, on June 7, 2023.
- Dr. Sakthivel R. served as a Session Chair for "Next Generation Digital System Design" at Think Silicon in Dhaka, Bangladesh, on May 27, 2023.
- Dr. Yepuganti Karuna discussed the "Importance of Random Process in Communications" at AURORAS SCIENTIFIC TECHNOLOGICAL AND RESEARCH ACADEMY in Hyderabad, India, on May 27, 2023.
- Dr. Malaya Kumar Hota explored "Sensing and Signal Processing" at Kalinga Institute of Industrial Technology in Bhubaneswar, India, on May 27, 2023.
- Dr. Aarthi G. presented on "FSO Communication for Smart City Applications" at Bharath Institute of Higher Education and Research in Chennai, India, on May 26, 2023.
- Dr. Sujatha R. introduced the audience to "Machine Learning and Its Applications Using a Cloud Platform" at VIT CHENNAI in Chennai, India, on May 24, 2023.
- Dr. Sumit Kumar Jindal discussed "Sensors and Its Industrial Applications" at ACRS in Chennai, India, on May 20, 2023.
- Dr. Prakasam P. explored "Communications beyond the Thinking" at Dr. T. Thimmaiah Institute of Technology in Bangalore, India, on May 19, 2023.

Guest Lectures Delivered

- Dr. Naveen Mishra delved into "Equivalent Circuit Modeling for Frequency Selective Surfaces" at the College of Engineering and Rural Technology in Meerut, India, on May 18, 2023.
- Dr. Poongundran Selvaprabhu presented on the "Impact of Wireless Communication in 5G Communication" at Jeppiaar Institute of Technology in Chennai, India, on May 12, 2023.
- Dr. Kavitha K.V.N. conducted two lectures: "Analog Communication" at Vel Tech Multi Tech in Chennai, India, on May 4, 2023, and "Impact of Digital Modulation Techniques in Advanced Wireless Communication" at Arunai Engineering College in Tiruvannamalai, India, on May 3, 2023.
- Dr. Chittaranjan Nayak presented on "Technical Report Writing" at Gandhi Institute of Excellent Technocrats in Bhubaneswar, India, on April 29, 2023.
- Dr. Shankar T. served as Chair in the Technical Session and reviewed presented papers at the National Institute of Technical Teachers Training and Research NITTTR in Chennai, India, on April 28, 2023.
- Dr. Idrasen Singh acted as a Session Chair at G. H. Rasoni College of Engineering in Nagpur, India, on April 28, 2023.
- Dr. Sakthivel R served as a Session Chair for a session at PMC Tech Hosur in Hosur, India, on April 27, 2023.
- Dr. Mohiul Islam delivered a lecture on "Digital Image Watermarking Techniques: Overview, Methodology, and Applications" at Vellore Institute of Technology Chennai, India, on April 26, 2023.
- Dr. Suraj Prakash Sahoo explored "Understanding the Huge Upsurge in Technology by AI" at VIT Chennai, India, on April 25, 2023.
- Dr. Sujatha R. conducted a lecture on the "DST SERB SPONSORED NATIONAL SEMINAR ON ADOPTING IoT FOR MANUFACTURING SECTOR" at SAINT JOSEPH COLLEGE OF ENGINEERING in Chennai, India, on April 24, 2023.

FACULTY

ACHIEVEMENTS

Guest Lectures Delivered

- Dr. Pradeep Kumar Das presented on the "Automatic Detection of Blood Cancer using Deep Learning Approach" at VIT, Chennai, India, on April 24, 2023.
- Dr. Sriharipriya K. C. discussed "Technical Discussion on LabVIEW and Work-Life Balance in Industry" at PACIFIC TOOLS in Chennai, India, on April 22, 2023.
- Dr. Rajan Kumar Pandey explored "Ab-initio Materials Modeling of Scaled CMOS Devices" at the Centre for Functional Materials, Vellore Institute of Technology in Vellore, India, on April 20, 2023.
- Dr. Sharmila N. shared insights on "Facts about Entrepreneurship and Healthcare Startup" at Chettinad Academy of Research and Education in Chennai, India, on April 19, 2023.
- Dr. Nithish Kumar V presented on "VLSI Design for Testability" at CARE College of Engineering in Trichy, India, on April 19, 2023.
- Dr. Sasikumar P discussed "Communication Protocols in Smart Grid" at MAR BASELIOS COLLEGE OF ENGINEERING AND TECHNOLOGY in Thiruvananthapuram, India, on April 18, 2023.
- Dr. Vivek Rajpoot delved into "MAC Layer Design in Cognitive Layer Communication" at IMS Engineering College in Ghaziabad, India, on April 8, 2023.
- Dr. Jayanandan T provided insights into the "Roadmap to 6G Technology: Challenges & Opportunities" at IETE Chennai Centre in Chennai, India, on April 6, 2023.
- Dr. Prakasam P explored "Blockchain Technology for Next Generation Wireless Networks" at IETE and Saveetha Engineering College in Chennai, India, on April 1, 2023.
- Dr. Sriharipriya K. C. discussed "Emulation for IoT Applications" at Vellore Institute of Technology in Chennai, India, on April 1, 2023.

FACULTY
ACHIEVEMENTS

Honours and Awards

- Dr. Vijay Kumar, was honored by the IEEE (Institute of Electrical and Electronics Engineers) with the prestigious IEEE GRSS Grant on the 19th of June 2023. This accolade is a testament to his significant contributions to the field of electronics engineering.
- Dr. Prakasam P., was recognized by IEEE Access Journal as the Outstanding Associate Editor of 2022, a testament to his exemplary editorial work. This recognition was bestowed upon him on the 1st of June 2023.
- Dr. Sujatha R, received two notable awards. The first, the DST SERB Seminar Keynote Speaker Award, was conferred upon her by the Department of Science and Technology's Science and Engineering Research Board (DST SERB) on the 24th of April 2023. Furthermore, she was honored with the Cyber Security Jury Award by the Institution Innovation Council on the 3rd of April 2023.

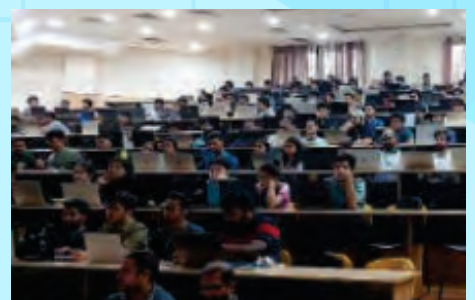


EVENTS

Events Organized

The School of Electronics Engineering at VIT has been busy hosting a variety of events that encompass workshops, training programs, seminars, and more. These events are not only enriching for our students and faculty but also contribute to the growth of knowledge and expertise in the field of electronics.

- Entrepreneurship Development Programme - "Trading Workshop" (April 1, 2023)
- Workshop on Python for Machine Learning and Data Science (June 1-15, 2023)
- IMPETUS Workshop (April 2, 2023)
- INNOVENTURE Workshop (April 2, 2023)
- Training Programme on Haptic Devices for VR Applications (May 2, 2023)
- Training Programme - "Design Challenges of Phase-Locked Loops (PLL)" (June 2, 2023)
- Five-Day FDP on "5G NR Key Aspects and Use Cases (April 3-5, 2023)
- Seminar on "Artificial Intelligence: Experimentation to Implementation - Case Studies from Chip Design and IoT Products" (April 3, 2023)
- Training Programme on System Verilog for Design and Verification (June 3, 2023)
- Workshop on the Application of Renewable Energy: A Solar Perspective (June 3, 2023)
- G20 Quiz - MOE Initiative (June 5, 2023)
- YANTRA TECH WEEK (June 6-8, 2023)
- TTTC Workshop on "VLSI Test and Reliability" (April 7-9, 2023)
- Faculty Development Program on "Challenges and Research Opportunities in Wireless Communication" (May 8-12, 2023)
- Alumni Lectures - "Accelerating Deep-Learning Algorithms on the FPGA Platform" (April 10, 2023)
- FDP on "Scientific Writing for Grants and Research Publication" (April 10-12, 2023)
- FDP on "Blockchain Trends and Applications" (April 10-12, 2023)



EVENTS

Events Organized

- Seminar on "Smart Energy Storage for Electric Vehicles" (April 10, 2023)
- Seminar on "Research Trends, Challenges, and Opportunities in Embedded Biomedical Devices and High-Speed Clocking" (June 10, 2023)
- Two-Day National Workshop on "Internetworking Protocols" (June 10-11, 2023)
- Faculty Development Program on "Digital IC Design Using Cadence Tools" (May 12-14, 2023)
- Alumni Lectures on "Random Processes and Its Application in Speech Technology" (April 13, 2023)
- Training Programme on "Introduction to Robotics and Its Application in Automation (IRAA)" (April 17-21, 2023)
- FDP on "Enriching Technologies in Fiber Optical Communication and Networks" (April 17-19, 2023)
- Faculty Development Program on "VLSI System Design" (April 17-21, 2023)
- Faculty Development Program on "Digital Communication Systems" (April 17-21, 2023)
- Thons - "Appathon App Building Talent" (May 19-22, 2023)
- Training Programme - "Physical Design Using ICC2" (May 20-21, 2023)
- Seminar on "Legal Aspects in Patent Filing" (April 22, 2023)
- Two-Day National Workshop on "Embedded C Programming for 8-Bit Microcontroller" (June 23-24, 2023)
- Seminar on SAP Student Information Session (April 24, 2023)
- Outreach Activity - "Two-Day Exposure Visit Program for CBSE School Principals/Heads" (April 27-28, 2023)
- Entrepreneurship Development Programme - "E-Summit" (March 29 - April 1, 2023)
- Faculty Development Program on "Edge Computing for Internet of Things" (June 30, 2023)



ViTECoN 2023



IEEE 2nd International Conference on Vision Towards Emerging Trends in Communication and Networking Technologies

The 2nd IEEE International Conference on "Vision Towards Emerging Trends in Communication and Networking Technologies (ViTECoN-2023)" was held on May 5th and 6th, 2023. ViTECoN-2023 was organized with the aim of bringing together academicians, researchers, engineers, and students who specialize in the areas of Electronics, Communication, Networking, and their various applications.

Key Highlights of ViTECoN 2023:

- **Diverse International Presence:** ViTECoN-2023 attracted participants and contributions from all around the globe. Notably, keynote speakers hailed from six different countries, including France, Sweden, South Korea, Malaysia, Indonesia, and India.
- **Global Academic Engagement:** The conference received an overwhelming response from the academic community, with more than 100 academic institutions across the world contributing research papers.
- **Significant Paper Submissions:** An impressive total of 1342 research papers were submitted to the conference. After a rigorous selection process, 277 papers were accepted and registered for presentation, reflecting the high standards of the conference.
- **Comprehensive Technical Sessions:** ViTECoN-2023 hosted a total of 18 technical sessions, showcasing the depth and breadth of research in Electronics, Communication, and Networking. A special session on "Women in Engineering" emphasized the importance of gender diversity in the field.
- **Diverse Conference Tracks:** The conference featured nine distinct tracks, allowing attendees to explore specific areas of interest:
 - a. Smart Electronic Systems (SES)
 - b. Next Generation Wireless Communication Techniques (NGWCT)
 - c. Advanced Wireless Networks (AWN)
 - d. Smart Antenna & RF Technologies for next-generation Communication (SARF)
 - e. Signal and Image Processing (SIP)
 - f. Advanced Computing & Information Systems Security (ACISS)
 - g. Women in Engineering (WiE)
 - h. Special Track on IoT & Sensor Networks
 - i. Special Track on the Predominant Role of Communication, IoT, Blockchain on Electric Vehicle, Smart Grid & Smart Cities.

ViTECoN 2023



IEEE 2nd International Conference on Vision Towards Emerging Trends in Communication and Networking Technologies

- **Paper Acceptance Rate:** The acceptance rate for papers was 20.64%, reflecting the selectivity and quality of the papers presented at the conference.
- **Impressive Revenue Generation:** ViTECoN-2023 demonstrated a successful financial outcome, generating a revenue of Rs 24,00,000, which includes GST.
- **Geographical Distribution of Papers:** The papers received and accepted showed a wide geographical spread. A significant number of papers came from both North India (454) and South India (876), indicating a strong interest in the conference from across the country. Additionally, the conference attracted papers authored by foreign contributors (12), underlining its international appeal.

The 2nd IEEE International Conference, ViTECoN-2023, not only served as a platform for knowledge exchange but also exemplified the global reach and impact of research in the fields of Electronics, Communication, and Networking. The commitment to fostering diversity and quality research was evident in the conference's success and its comprehensive technical sessions. ViTECoN-2023 was a testament to the collaborative and innovative spirit of the academic community.



ViTECoN 2023



IEEE 2nd International Conference on **Vision Towards Emerging Trends in Communication and Networking Technologies**



TOP PUBLICATIONS (IF)

- COVID-19 clinical waste reuse: A triboelectric touch sensor for IoT-cloud supported smart hand sanitizer dispenser, Basith S.A., Chandrasekhar A., Nano Energy, Vol:108, DOI: 10.1016/j.nanoen.2023.108183, IF = 17.6.
- Sucrose assisted chemical-free synthesis of rGO for triboelectric nanogenerator: Green energy source for smart-water dispenser, Muktar Ahmed R.F.S., Mohan S.B., Ankanathappa S.M., Shivanna M., Basith S.A., Chandrashekara Shastry M.H., Chandrasekhar A., Sannathammegowda K., Nano Energy, Vol:106, DOI: 10.1016/j.nanoen.2022.108085, IF = 17.6.
- Ti₃AlC₂ MAX phase and Ti₃C₂TX MXene-based composites towards supercapacitor applications: A comprehensive review of synthesis, recent progress, and challenges, Kewate O.J.; Punniyakoti S., Journal of Energy Storage, Vol:72, DOI: 10.1016/j.est.2023.108501, IF = 9.4.
- Marriage between metal-organic frameworks/covalent-organic frameworks and triboelectric nanogenerator for energy harvesting ?A review, P K N.; Chandrasekhar A., Materials Today Energy, Vol:37, DOI: 10.1016/j.mtener.2023.101393, IF = 9.3.
- Developing novel channel estimation and hybrid precoding in millimeter-wave communication system using heuristic-based deep learning, G N.R., Ravikumar C.V., Energy, Vol:268, DOI: 10.1016/j.energy.2022.126600, IF = 9.
- Adaptive Bezier Curve-based Membership Function formulation scheme for Interpretable Edge Detection, Madhu C., Sudhakar M.S., Applied Soft Computing, Vol:133, DOI: 10.1016/j.asoc.2022.109968, IF = 8.7.
- Deep convolution neural network based semantic segmentation for ocean eddy detection, Saida S.J., Sahoo S.P., Ari S., Expert Systems with Applications, Vol:219, DOI: 10.1016/j.eswa.2023.119646, IF = 8.5.
- L-shaped geometry-based pattern descriptor serving shape retrieval, Priyanka S., Oliva D., Mallikarjuna K., Sudhakar M.S., Expert Systems with Applications, Vol:213, DOI: 10.1016/j.eswa.2022.119260, IF = 8.5.
- Energy balanced reliable and effective clustering for underwater wireless sensor networks, Kaveripakam S.; Chinthaginjala R., Alexandria Engineering Journal, Vol:77, Pg.No:(41-62), DOI: 10.1016/j.aej.2023.06.083, IF = 6.8.
- Synergistic Effect of Dual Surface Modified Ecoflex Polymer for Dynamic Triboelectric Nanogenerator Towards Sustainable Battery-Free Tally Counter, Basith S.A.; Chandrasekhar A., Advanced Materials Technologies, DOI: 10.1002/admt.202300495, IF = 6.8.
- A novel approach for brain tissue segmentation and classification in infants' MRI images based on seeded region growing, foster corner detection theory, and sparse autoencoder, Hrishikesh Jaware T.; Ramesh Patil V.; Nayak C.; Elmasri A.; Ali N.; Mishra P., Alexandria Engineering Journal, Vol:76, Pg.No:(289-305), DOI: 10.1016/j.aej.2023.06.040, IF = 6.8.

SPONSORED PROJECTS

Investigator Details: Prof. ANTONY XAVIER GLITTAS X.
Type: PI (Principal Investigator)
Funding Agency: Indian Space Research Organization
Agency Type: Government
Sanction Date: March 27, 2023
Sanction Amount: Rs. 30,53,700



CONSULTANCY PROJECTS

Investigator Details: Prof. SUJATHA R.
Type: Co-PI (Co Principal Investigator)
Funding Agency: Daimler India Commercial Vehicles Pvt Ltd, , India
Agency Type: Private
Sanction Date: May 19, 2023
Sanction Amount: Rs. 97,550



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- Prof. Karthikeyan B., HOD, Department of Embedded Technology
- Prof. Noor Mohammed V., HOD, Department of Communication Engineering
- Prof. Jagannadha Naidu K., HOD, Department of Micro & Nanoelectronics
- Prof. Konguvel E., IQAC Coordinator, SENSE

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