APRIL TO JUNE 2024

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Newsletter

VISION

To create a center for imparting technical education of international standards and conduct research at the cutting edge of electronics & communication technology to meet the current and future challenges of technological development.

MISSION

To create technical manpower for meeting the current and future demands of industry and academia: to recognize education and research in close interaction with electronics & communication & related industry with emphasis on the development of leadership qualities in the young men and women entering the portals of the institute with sensitivity to social development and eye for opportunities for growth in the international perspective.

JOURNAL/CONFERENCE/BOOK PUBLICATIONS

Ravi Mali, D. Lodhi, and S. Singhal, "QUAD BROADBAND CIRCULARLY POLARIZED CPW FED CLEAVER SHAPED EXTENDED UWB MIMO ANTENNA FOR 5G, C, K AND MILLIMETER WAVE APPLICATIONS" , Analog Integrated Circuits and Signal Processing Volume :0 / 1-10 / 2024

Riyaz Ahmad, Amit M Joshi, Dharmendra Boolchnadani, "Programmable Readout with Integrated Bandgap Reference Potentiostat for Glucose Sensing" , IEEE Transaction on Instumentation and Measurements Volume :XX / / 2024

Trapti Mudgal , Manas Tiwari , Deepak Bharti, "Polymer-composite triboelectric nanogenerators with hook-shaped electrode for wind energy harvesting" , Materials Today Communications Volume :40 / / 2024

Shashank Kumar Yadav, Vikram Maurya, and S. Singhal, "Polarization Independent Highly Insensitive Ultra- wideband Absorber for Infrared, Visible Light and Ultraviolet Region" , Materials Letters Volume :0 / 1-8 / 2024

D. Singh, S. Chaudhary, B. Dewan, and M. Yadav, "Performance investigation of stacked-channel junctionless Tri-Gate FinFET 8T-SRAM cell" , Engineering Research Express Volume :6 / 015305 / 2024

Vandana Singh Rajawat, Bharat Choudhary, Ajay Kumar, "Performance Assessment of High-k SOI GaN FinFET with Different Fin Aspect Ratio for RF/Wireless Applications" , Wireless Personal Communications Volume :136 / / 2024

D. Singh, S. Chaudhary, B. Dewan, and M. Yadav, "Performance investigation of different low power SRAM cell topologies using stacked-channel tri-gate junctionless FinFET" , Microelectronics Journal Volume :145 / 106122 / 2024 ISBN: 0026-2692

Ritu Poonia, C Periasamy, Aasif Mohammad Bhat, Lava Bhargava, Chitrakant Sahu, "Performance Assessment of AlGaN/GaN HEMT for Human Serum Albumin Detection using Charge Deduction Methodology" , IEEE Sensors Journal Volume :- / / 2024

Shreyas Tiwari, Tarun Varma, Rajesh Saha, "Optical Assessment of Vertical TFET based on heterojunction of GaSb-Si" , Micro and Nanostructures Volume :11111 / 1111 / 2024 ISBN: ISSN 2773-0123

Prateek Jain, Amit M Joshi, Saraju Mohanty, linga reddy cenkeramaddi, "Non-invasive Glucose Measurement Technologies: Recent Advancements and Future Challenges" , IEEE Access Volume :XX / / 2024

Uday Chandra Akuthota, Lava Bhargava, "Network intrusion classification for IoT networks using an extreme learning machine" , Engineering Research Express Volume :6 / 025217 / 2024

Sakshi Tiwari, Surendra K Saini, Amit M Joshi, Ravi K Maddila, "Continuous and Cuffless Blood Pressure Estimation Using Photoplethysmography for Wearable Devices" , IEEE India Council International Conference INDICON 2024 by :IEEE at IIT Kharagpur / / 2024

SK Saini, S Tiwari, A Sharma, RK Maddila, "Estimation of Glycated Hemoglobin Using Multiwavelength Photoplethysmography Signal" , IEEE Region 10 Symposium - TENSYMP 2024 by :IEEE at NSUT, Delhi / 1-6 / 2024

A. Chhabra, Y. Singh, P. Dharmadhikari, S. M. Mitul, V. Soni, S. J. Nanda, "Many-Objective Extractive Document Text Summarization Using NSGA-II" , 15th International IEEE Conference on Computing, Communication and Networking Technologies -ICCCNT by :IEEE at Indian Institute of Technology Mandi / 1-7 / 2024 ISBN: 979-8-3503-7024-9

Book Chapter" Performance Projections of Negative Capacitance FET for Low-Power Applications ISBN:978-981-99-6649-3 published by - Springer Nature Singapore Year 2024 Authors- Shalini Chaudhary, Basudha Dewan, Devenderpal Singh, Menka Yadav

Reference Book" Data Science and Applications Proceedings of ICDSA 2023, Volume 4 ISBN:978-981-99-7813-7 published by - Lecture Notes in Networks and Systems (LNNS, volume 821), Springer Singapore Year 2024 Authors- Satyasai Jagannath Nanda, Rajendra Prasad Yadav, Amir H. Gandomi, Mukesh Saraswat

Reference Book" Data Science and Applications Proceedings of ICDSA 2023, Volume 3 ISBN:978-981-99-7816-8 published by - Lecture Notes in Networks and Systems (LNNS, volume 820), Springer Singapore Year 2024 Authors- Satyasai Jagannath Nanda, Rajendra Prasad Yadav, Amir H. Gandomi, Mukesh Saraswat

PROJECTS

Project Investigator:
Dr. Kuldeep Singh
Title of the Project:
Development of techniques for data traffic based analysis of smart systems
Funding Agency: *DRDO*
Amount: *113.97 Lakhs*
Duration: **2023-25**

Project Investigator:
Dr Amit Mahesh Joshi
Title of the Project:
Secure and Reliable Internet of Medical Things Framework using Physical Unclonable Functions for Diabetes Management
Funding Agency: **Data Security council of India**
Amount: **5.90 lakhs**
Duration: **2024-2024**

Project Investigator:
Dr. Ritu Sharma
Title of the Project:
Design, Fabrication and performance Evaluation of Flexible Piezoelectric Biomechanical Energy Harvester
Funding Agency: *SERB-Power Grant*
Amount: *53.97 lakhs*
Duration: **2022-2025**

Project Investigator:
Dr. Kuldeep Singh
Title of the Project:
Prototype Development of Artificial Intelligence based Portable Computer Aided Diagnosis System for Silicosis
Funding Agency: *Directorate of specially-abled people, Govt. of Rajasthan*
Amount: *22.59 lakhs*
Duration: **2022-2024**

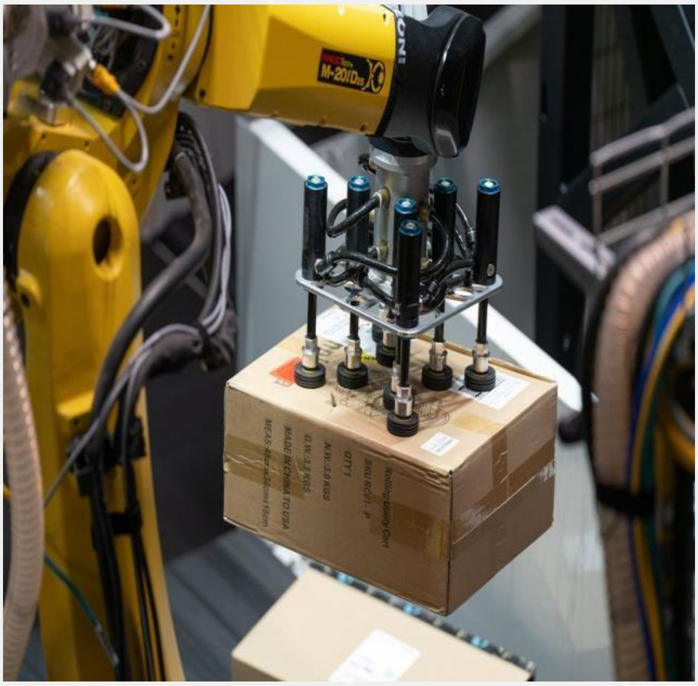
Project Investigator:
Prof. Vineet Sahula
Title of the Project: **Electronics and ICT Academy(phase-2)**
Funding Agency: *Ministry of Electronics and IT, Govt. of India*
Amount: *1005.58* **lakhs**

PATENTS

- *"A vaccine carrier system", Vijay Janyani, Abhinav Bhatnagar, Naveen Kumar , Reg.No. 537623 [The Patent Office, Govt of India.(Awarded)*
- *"A PDMS-BASED GRAPHENE/PANI/GRAPHENE (G-P-G) SANDWICH TRANSPARENT CONDUCTING FLEXIBLE SENSOR DEVICE AND ITS FABRICATION METHOD THEREOF", Mr. Atul Kumar Sharma, Dr. Ritu Sharma, Dr. Anup Kumar Sharma, Mr. Puneet Sharma, Miss Surbhi Singh , Reg.No. 202411037200 [Intellectual Property India, Government of India](filed)*

MODERN TECHNOLOGY

How Amazon is Changing the Future of Robotics and Logistics



Amazon's robotic system, Robin, exemplifies the company's innovation in logistics. Designed for real-world complexity, Robin adapts to Amazon's dynamic fulfillment centers, handling varied items with speed and precision. Utilizing AI, computer vision, and mechanical engineering, Robin learns and improves over time.

Developed through collaboration among roboticists, engineers, and data scientists, Robin was tested in live environments, evolving with each deployment. Engineers at Amazon benefit from vast resources and a culture that encourages experimentation.

Since its deployment, Robin has performed billions of picks, enhancing efficiency and workplace safety by taking over repetitive tasks. The insights gained from Robin are shaping Amazon's future robotics innovations.

Amazon fosters a problem-solving culture where engineers translate ideas into impactful solutions. Robin represents not just a technological advancement but a vision for continuous improvement, proving that innovation thrives when ambition, collaboration, and execution come together.

**Source: IEEE Spectrum*

STUDENTS CORNER

UG Students Placement

Highest LPA-37.5

Average LPA-14.75

PG Students Placement

VLSI:	***Highest LPA-33.06***	***Average LPA-25.97***
ECE:	***Highest LPA-12.5***	***Average LPA-10.86***
WOC:	***Highest LPA-15.38***	***Average LPA-9.42***
EMBEDDED:	***Highest LPA-33.06***	***Average LPA-18.08***

MAJOR RECRUITERS