JAN TO MARCH 2023

DEPARTMENT OF ELECTRONICS AND COMMUNICATION

Newsletter

VISION

To create a centre 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.

Mohit Yadav, Muquaddar Ali and R.P.Yadav, "A Compact and Economical AMC backed Antenna Solution for Wearable Biomedical Applications" , International Journal of Microwave and Wireless Technologies Volume :10 / 1-10 / 2023

Pratyusha Nune, Santanu Mandal, Amit Saha, and Rajesh Saha, "A generic simple model of synaptic memristor with local activity for neuromorphic applications" , Journal of Computational Electronics Volume :Accepted / / 2023

JOOHI GARG, SANJEEV YADAV, and M M SHARMA, "A novel miniaturized loop based angularly stable and polarization independent multiband bandpass FSS structure for Wi-Max and WLAN applications" , sadhana Volume :48 / 1-7 / 2023

Aasif Mohammad Bhat a, Ritu Poonia , Arathy Varghese, Nawaz Shafi and C. Periasamy, "AlGaN/GaN high electron mobility transistor for various sensing applications" , Micro and Nanostructures (Elsevier) Volume :1 / 207528 / 2023

Rajesh Saha, Deepak Panda, and Rupam Goswami, "Dependence of RF/analog and linearity parameters on ferroelectric layer thickness in ferroelectric tunnel junction dual material double gate (FTJ-DMDG) TFET" , Ferroelectrics Volume :602 / 204-214 / 2023

Sushil Kumar Jain, Amit M. Joshi, Linga Reddy Cenkeramaddi, "Dielectric Modulated Bilayer Electrode Top Contact OTFT for Label Free Biosensing" , IEEE Access Volume :xx / / 2023

Chaudhary, Shalini, Basudha Dewan, Devenderpal Singh, Chitrakant Sahu, and Menka Yadav, "Exploration of Temperature Stability of linearity and RF Performance Metrics for PGP Negative Capacitance FET" , Semiconductor Science and Technology Volume :1 / / 2023

Piyush Jha, Rashi Kumar and Vineet Sahula, "Filtering and Extended Vocabulary based Translation for Low-resource Language pair of Sanskrit-Hindi" , ACM Transactions on Asian and Low-Resource Language Information Processing Volume :Early / 14 / 2023 ISBN: 2375-4699

Dimpal Janu, Kuldeep Singh, Sandeep Kumar, and Sandeep Mandia, "Hierarchical Cooperative LSTM-based Spectrum Sensing" , IEEE Communication Letters Volume :27-3 / / 2023

Krishna Chauhan, Kamalesh Kumar Sharma, Tarun Varma, "Improved Speech Emotion Recognition Using Channel-wise Global Head Pooling (CwGHP)" , Circuits, Systems, and Signal Processing, Springer Nature Volume :111 / 2222 / 2023 ISBN: 1531-5878

Ankur Saharia, Kamalkishor Choure, Nitesh Mudgal, Ravi Kumar Maddila, Manish Tiwari, Ghanshyam Singh , "Introductory Review on All-Optical Machine Learning Leap in Photonic Integrated Circuits" , Optical Memory and Neural Networks Volume :31 / 393,402 / 2023

Girdhar Gopal, Tarun Varma, "Investigation of temperature for the stacked Ferroelectric Heterojunction TFET(Fe-HTFET) on box substrate" , Micro and Nanostructures (Elsevier) Volume :177 / 1-14 / 2023 ISBN: ISSN 2773-0123

Rajesh Saha, Deepak Kumar Panda, and Rupam Goswami, "Investigation on RF/Analog Performance in SiGe Pocket n-Tunnel FET" , IETE Journal of Research Volume :Accepted / / 2023

Ravindra Kumar Maurya, Rajesh Saha, and Brinda Bhowmick, "Low to high-frequency noise behavior investigation of steeper sub-threshold swing NC-GeFinFET" , Microelectronics Journal Volume :131 / / 2023

Ahmad, Riyaz, Amit M. Joshi, Dharmendar Boolchandani, and Tarun Varma, "Novel Programmable Readout Amplifier and Potentiostat for Glucose Sensing Applications" , SN Computer Science Volume :04 / / 2023

Shreyas Tiwari, Lobzang Chonzom, and Rajesh Saha, "Optical FOMs of extended-source DGTFET photodetector in the visible range of the spectrum" , Semiconductor Science and Technology Volume :38 / / 2023

Shreyas Tiwari and Rajesh Saha, "Optical Performance of Split-Source Z-Shaped Horizontal-Pocket and Hetero-Stacked TFET-Based Photosensors" , Journal of Electronics Material Volume :52 / / 2023

Agarwal, Ankit, Nitesh Mudgal, Kamal Kishor Choure, Rahul Pandey, Ghanshyam Singh, and Satish Kumar Bhatnagar, "Photonic Crystal-Based Water Concentration Estimation in Blood Using Machine Learning for Identification of the Haematological Disorder" , Photonics Volume :10(1) / / 2023

Shalini Chaudhary, Basudha Dewan, Devenderpal Singh, Chitrakant Sahu, Menka Yadav, "Proposal and performance evaluation of delta doped negative capacitance tunneling field transistor: A simulation study" , Micro and Nano Engineering Volume :174 / 207498 / 2023 ISBN: 2773-0123

Deepshikha Lodhi, Sudhir Bhaskar, and S. Singhal, "Quad Port Wheel Shaped Superwideband MIMO Antenna (Accepted)" , Journal of Ambient Intelligence and Humanized Computing Volume :0 / / 2023 ISBN: 1868-5145

Kamal Kishor Choure, Ankur Saharia, Nitesh Mudgal, Rahul Pandey, Ankit Agarwal, Manisha Prajapat, Ravi Kumar Maddila, Manish Tiwari, Ghanshyam Singh, "Reconfigurable and compact reversible channel multiplexers using Si3N4 based optical microring resonator" , Optics Communications Volume :530 / 129126 / 2023

Rajesh Saha, Rupam Goswami, Brinda Bhowmick, Srimanta Baishya, "Simulation study of n+ pocket step shape heterodielectric double gate tunnel FET for switching and biosensing applications" , Materials Science and Engineering: B Volume :293 / 116491 / 2023

Girdhar Gopal, Harshit Agrawal, Heerak Garg and Tarun Varma, "Simulation-Based Analysis of an L-Patterned Negative-Capacitance Dual Tunnel VTFET" , INTERNATIONAL JOURNAL OF ELECTRONICS Volume :111 / 222 / 2023 ISBN: ISSN 0020-7217

Bourdine, Anton V, Vladimir V Demidov, Konstantin V Dukelskii, Alexander V Khokhlov, Egishe V Ter Nersesyants, Sergei V Bureev, Alexandra S. Matrosova, Grigori A. Pchelkin, G. Singh et al., "Six-Core GeO2-Doped Silica Microstructured Optical Fiber with Induced Chirality" , Fibers Volume :11 / / 2023

Mittal, Shweta, Ankur Saharia, Yaseera Ismail, Francesco Petruccione, Anton V. Bourdine, Oleg G. Morozov, Vladimir V. Demidov, Juan Yin, Ghanshyam Singh, and Manish Tiwari , "Spiral Shaped Photonic Crystal Fiber-Based Surface Plasmon Resonance Biosensor for Cancer Cell Detection" , Photonics Volume :10(3) / / 2023 ISBN: 2304-6732

Sharma, Giriraj and Joshi, Amit M and Mohanty, Saraju P, "sTrade: Blockchain based secure energy trading using vehicle-to-grid mutual authentication in smart transportation" , Sustainable Energy Technologies and Assessments Volume :57 / 103296 / 2023

Shreyas Tiwari and Rajesh Saha, "Trap Sensitivity of Splitted Source Z Shape Horizontal Pocket and Hetero Stack TFETs: A Simulation Study" , Physica Scripta Volume :Accepted / / 2023

Research Publications

Ravi Mali, D. Lodhi, S. Singhal, "Ultrawideband Terahertz Antenna For Multiband Circularly Polarized Applications (accepted)" , Optical and Quantum Electronics Volume :0 / 1-10 / 2023 ISBN: 1572-817X

N. Mudgal, Ankur Saharia, Ankit Agarwal, G. Singh , "ZnO and Bi-metallic (Ag–Au) Layers Based Surface Plasmon Resonance (SPR) Biosensor with BaTiO3 and Graphene for Biosensing Applications" , IETE Journal of Research Volume :69(2) / 932-939 / 2023 ISBN: 0377-2063

Ravindra Kumar Maurya, Vivek Kumar, Rajesh Saha, Brinda Bhowmick, "Effects of FerroThickness and Temperature on Electrical Performance of SiHfO2 Based NC FinFET" , 2023 11th International Symposium on Electronic Systems Devices and Computing by :IEEE at Sri City India / / 2023

H. K. Phulawariya, R. Chaudhary, S. Tiwari and R. Saha, "Realization of Logic Performance Using Double Gate TFET DG-TFET and Ge Source DG-TFET S-Ge-TFET" , AISP 2023 by :IEEE at VIT AP University / 1-5 / 2023

J. Kumar, R. Chaudhary and R. Saha, "Performance Analysis of Dielectric Modulated Dual Material Double Gate Hetero Stack DM-DMDG-HS TFET" , International Conference on Intelligent and Innovative Technologies in Computing, Electrical and Electronics by :IEEE at Bangaluro / 296-301 / 2023

Sandeep Mandia, Faisel Mushtaq, Kuldeep Singh, Rajendra Mitharwal, Alavikunhu Panthakkan, "YOLO-V5 Based Single Step Student Affect State Detection System" , International Conference on the Paradigm Shifts in Communication, Embedded Systems, Machine Learning and Signal Processing by :IEEE at Nagpur, India / / 2023

Sandesh Singh Shekhawat, Deepshikha Lodhi and Sarthak Singhal, "Ultra Wideband Antenna for 5G and Satellite Applications" , IEEE International Conference on Microwave, Antenna and Communication - MAC2023 by :IEEE at MNNIT Allahabad, Prayagraj / / 2023

Shreya Pourush and Prof. R. P. Yadav, "A Novel 2 X 2 Wideband Multiple Input Multiple Output Antenna" , IEEE Wireless, Antenna and Microwave Symposium 2023 by :IEEE at Pandit Deendayal Energy University Gandhi Nagar / / 2023

Geetha P. , Dr. Satyasai Jagannath Nanda and Prof. R.P.Yadav, "A Chaotic Sailfish Optimizer for Accurate DOA Estimation in Automotive Radar" , 2nd IEEE International Conference on Microwave, Optical and Communication Engineering 2023 by :IEEE at IIT Bhubaneswar / / 2023

Sushil Kumar Jain , Amit Mahesh Joshi, "OTFT Based Biosensor for Detection of Breast Cancer Biomarker C-erbB-2" , Great Lakes Symposium on VLSI by :ACM at Knoxville, TN, USA / / 2023

Reference Book" Proceedings of the International Conference on Paradigms of Computing, Communication and Data Sciences: PCCDS 2022 ISBN:ISBN 978-981-19-8741-0 published by - Algorithms for Intelligent Systems, Springer Singapore Year 2023 Authors- Rajendra Prasad Yadav, Satyasai Jagannath Nanda, Prashant Singh Rana, Meng-Hiot Lim

Book Chapter" Charge Plasma TFET-based Label-Free Biosensor for Healthcare Application ISBN:- published by - Springer Year 2023 Authors- Basudha Dewan, Shalini Chaudhary, and Menka Yadav

Awards & Honours

Dr. Satyasai Jagannath Nanda, "Second Shanghai Cooperation Organisation (SCO) Nations Young Scientist for Second SCO-YSC Young Scientist in the field of Artificial Intelligence and Big Data Analysis" given by Department of Science and Technology, Govt. of India and JNCASR, Bengaluru, Karnataka

Project Investigator:
Dr Amit Mahesh Joshi
Title of the Project:
Onboard spectral preprocessing for multispectral image compression using FPGA
Funding Agency: ISRO
Amount: 18.62 lakhs
Duration: 2023-2025

Project Investigator:
Dr. Kuldeep Singh
Title of the Project:
Development of techniques for data traffic based analysis of smart systems
Funding Agency: *DRDO, Ministry of Defense , Govt. of India*
Amount: *103.49 lakhs*
Duration: 2023-2025

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: *59.97 lakhs*
Duration: 2022-2025

STUDENT CORNER

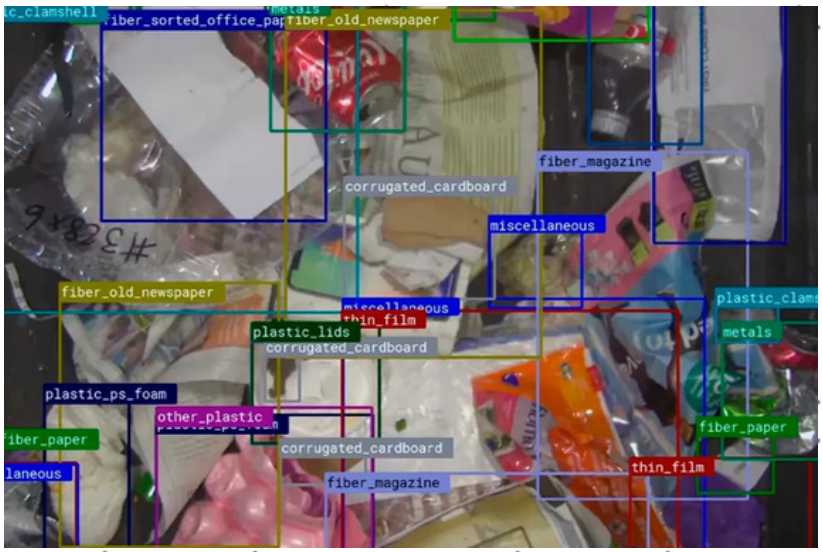
Educational Tour to CEERI-Pilani, BITS Pilani and Aksh Optifibre Ltd (Industry) by Optica student chapter MNIT Jaipur

Latest Technical Advancement

AI-GUIDED ROBOTS ARE READY TO SORT YOUR RECYCLABLES

Computer-vision systems use shapes, colors, and even labels to identify materials at superhuman speeds

The company, Amp Robotics, based in Louisville, is developing hardware and software that relies on image analysis to sort recyclables with far higher accuracy and recovery rates than are typical for conventional systems.



*source-IEEE Spectrum