

JANUARY TO MARCH 2024

# 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.



Pankaj Binda, Raghvendra Kumar Singh, Rajendra Mitharwal, "A highly sensitive terahertz temperature sensor based on polarization insensitive perfect metamaterial absorber with tunable characteristics" , Optical Materials Volume :148 // 2024

R. K. Vijay, S. J. Nanda, A. Sharma, "A spatio-temporal binary grid-based clustering model for seismicity analysis" , Pattern Analysis and Applications Volume :27 // 2024 ISBN: ISSN 1433-7541

Pankaj Binda, Sagnik Banerjee, Rajendra Mitharwal, Sarita Nanda, "Adjustable Broadband Absorber based on Vanadium Dioxide Multiple Coupled Diagonally Sliced Square Ring Shaped Structure For THz Frequency" , Photonics and Nanostructures - Fundamentals and Applications Volume :58 // 2024

Meghna Kumawat, Girdhar Gopal, Tarun Varma, "Design and Analysis of Hetero-Dielectric Junctionless-TFET(JL-TFET) with N<sup>+</sup> Pocket as Label free Biosensors" , Physica Scripta Volume :99 2024 / 1-16 / 2024 ISBN: 1402-4896

Arun Kumar Sharma, Girdhar Gopal, Tarun Varma, "Design and Implementation of the Logic Gates using Electrically Doped Configurable Polarity Control Double Gate Tunnel FET" , Physica Scripta Volume :99 / 1111111 / 2024 ISBN: ISSN 1402-4896

Geetha P, S. J. Nanda, R. P. Yadav, "DOA Estimation in the Presence of Doppler Shifts Using Quantum-Inspired Swarm Intelligence Algorithms" , SN Computer Science Volume :5 / 1-31 / 2024 ISBN: ISSN 2661-8907

Vikram Maurya and S. Singhal, "Dual Band Terahertz Reflective Linear Cross Polarization Converter Based Biosensor" , IEEE Sensors Journal Volume :0 / 1-8 / 2024

Nidhi Sinha, Amit M Joshi, Saraju Mohanty, "iCardo 3.0: ECG-Based Prediction of Conduction Disturbances Using Demographic Features" , SN Computer Science Volume :5 // 2024

Prateek Jain, Amit M. Joshi, Saraju P. Mohanty , "iGLU 4.0: Intelligent Non-invasive Glucose Measurement and Its Control with Physiological Parameters" , SN Computer Science Volume :5 // 2024

Kamal Kishor Choure, Ankur Saharia, Nitesh Mudgal, Rahul Pandey, Manisha Prajapat, Ravi Kumar Maddila, Manish Tiwari, Ghanshyam Singh, "Implementation of all-optical single qubit gates using Si<sub>3</sub>N<sub>4</sub> based micro ring resonator" , Optics and Laser Technology Volume :170 / 110263 / 2024

Ashish Kumar, Arothy Varghese, Dheeraj Kalra, Anshuman Raunak, Jaiverdhan, Mahant Prasad, Vijay Janyani, R.P. Yadav, "MEMS -based piezoresistive and capacitive microphones: A review on materials and methods" , Materials Science in Semiconductor Processing Volume :169 / 1-27 / 2024

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

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

S. Singhal, "Superwideband Terahertz Absorber Based Highly Sensitive Refractive Index Sensor" , IEEE Sensors Journal Volume :0 / 1-8 / 2024

Devenderpal Singh, Shalini Chaudhary, Basudha Dewan, Menka Yadav, "Performance Investigation of different Low Power SRAM Cell Topologies using Stacked-Channel Tri-gate Junctionless FinFET" Microelectronics Journal, Vol. 145, 2024

Devenderpal Singh, Shalini Chaudhary, Basudha Dewan, Menka Yadav, "Performance Investigation of Stacked-Channel Junctionless Tri-Gate FinFET 8T-SRAM Cell", Engineering Research express, vol. 6, issue 1, 2024

Nidhi Sinha, Amit M Joshi, "iHyptn: Predicting Hypertension Using PPG Signal for Cardiovascular Disease With Machine Learning Models" , TENCON 2023-2023 IEEE Region 10 Conference by :IEEE at Thailand // 2024

Rashi Chaudhary, Rajesh Saha, "Quality factor and digital inverter performance in gate underlap and overlap DMG FinFETs", Materials Science and Engineering: B, Volume 299 Pages , 116991, 2024

Shashank Rai, Shreyas Tiwari, Rashi Chaudhary, Rajesh Saha, Ritu Sharma, "Investigation on electrical parameters between single and double material gate nanoribbon FETs including trap distributions", Materials Science and Engineering: B Volume 303, May 2024, 117326

Rashi Chaudhary, Rajesh Saha, Menka Yadav, "Analysis of thermal stability in underlap and overlap DMG FinFETs including self-heating effects", Microelectronics Journal, Pages 106152, 2024.

# PROJECTS

**Project Investigator:**

**Dr Amit M 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: 5.9 Lakhs**

**Duration: 2024-24**

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**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**

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**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**

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**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**

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**Project Investigator:**

**Dr Amit Mahesh Joshi**

**Title of the Project:**

**iGLU Intelligent Glucose Measurement Device**

**Funding Agency: DST**

**Amount: 10.5 lakhs**

**Duration: 2023-2024**

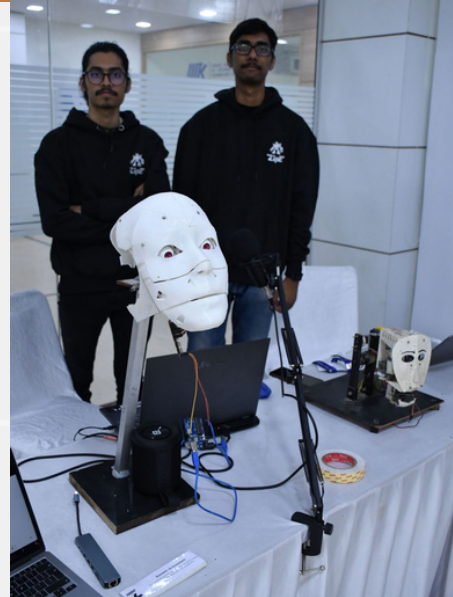
# AWARDS & HONORS

**"Prof. Ghanshyam Singh", Vice Chair for given by Prakash Bharti, IEEE Photonics India Community Network 2024**

# EVENTS ORGANISED

**National Conference on "Recent Trends in Space Technology (RTST 2024)**

**Date: 20-21 March 2024**





# Modern Technology

ROLLABLE OLED'S MOMENT IS NEAR EXPERTS THINK FLEXIBLE PHONES "COULD COME UP QUICK"

The Mobile World Congress (MWC), a technology convention held each year in Barcelona, placed a spotlight on rollable phones like the Phantom Ultimate, a scroll-like concept from Tecno Mobile, and Motorola's Adaptive Display Concept, a phone that can wrap around your wrist like a smartwatch. They were followed by a new patent filed by Samsung that hints at a future smartphone or tablet that rolls up like a newspaper.



*Motorola exhibited a concept rollable smartphone that wraps around the wrist and bends in multiple positions, at the Mobile World Congress 2024 in Barcelona.*

**\*Source: IEEE Spectrum**

## Students Corner

### 17th Convocation

**UG Degrees Received: 120**

**PG Degrees Received: 82**

**PhD Degrees Received: 22**

### Gold Medals

**UG: 1 PG: 4**

## Exams Cleared

GATE: 10

CAT: 1

TOEFL: 1

## Placement

UG: 13

PG: 3

## Higher Studies

For PG: 2

Imperial College of London

Cornell University