

Department of Electrical Engineering

Indian Institute of Technology (Indian School of Mines) Dhanbad



VIBHAV



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Monthly Newsletter

MESSAGE FROM HoD's DESK

By PROF. SUKANTA DAS



Dear All,

Hope you are doing well!

With great pleasure, I hereby introduce the 'July 2025' edition of the Department of Electrical Engineering's Monthly Newsletter: "VIBHAV".

The month of 'July 2025' marked a significant milestone with some notable individual achievements of our faculty members. Additionally, we are delighted to share that our family has grown with the joining of **Prof. Priyatosh Mahish** on 2nd July 2025. On behalf of the department, I extend a warm welcome to him.

I encourage you all to explore this issue and invite our students to contribute actively toward enhancing the quality and reach of our Monthly Newsletter. We also welcome your constructive feedback and suggestions, which may be forwarded to ee@iitism.ac.in for the improvement of forthcoming editions of "VIBHAV".

Wish you all a very Happy Independence Day!

Thank you all.

Best wishes.

ABOUT THE DEPARTMENT

The Electrical Engineering department was established in the year 2005. The four-year B.Tech. program in Electrical Engineering was started in the academic session 2006-07. Although the Department of Electrical Engineering is one of the latest of the existing departments of the Institute, the Electrical Engineering Section existed as a part of earlier Mining Machinery Engineering department from 1975. Apart from different B.Tech. programs, the department at present also offers M.Tech programs in Power System Engineering and Power Electronics & Electrical Drives. Through funded projects, consultancies, Doctoral, and postdoctoral programs, most of the research activities are being carried out in the department.

INDIVIDUAL ACHIEVEMENT

Prof. Kalyan Chatterjee has been selected as a Senior Individual Member of INAE.

Hearty Congratulations for his achievement !



Prof. Arijit Baral has received Ministry of Ports, Shipping and Waterways, GOI funded project "Design and Development of an Innovative Methodology for Advanced Assessment of the Lubricating Oil Performance Based on Frequency Domain Spectroscopy Used for Marine Applications" with the net budget worth of 62.36 Lakhs as Co-PI.

Hearty Congratulations for his achievement !



PATENTS

Patent no. 202531004108, Dated 17th Jan. 2025, "Compact Three-Phase Saturated Core Fault Current Limiter (SCFCL) for Grid-Connected DFIG Systems," **Kalyan Chatterjee** and Prashant Mani Tripathi. The Indian Patent is granted on 31st July 2025. *Hearty Congratulations to the Team!*

PUBLICATIONS

Journals

- Rajbhar, S.K., **Bhattacharyya, B.**, “Metaheuristic techniques and optimal VAR support to the vulnerable buses for improved reactive power planning,” *International Journal of System Assurance Engineering and Management* DOI: 10.1007/s13198-025-02896-0, July 2025.
- Sekhar A, **Mandal S**, “Design and Analysis of Modified Double Ring Resonator With Embedded High Contrast Optical Bragg Grating as an Optical Filter and a Biosensor,” *IEEE Transactions on Nanotechnology*, vol. 24, pp. 330-337, 2025.
- Saha S, **Mandal S**, “High contrast grating embedded multi-bus micro-optical triple ring-resonated temperature sensor design and simulation,” *Optik*, vol. 327, pp. 172276, 2025.
- Sekhar A, **Mandal S**, Ranjan R, “Model of double optical ring resonator configuration as a biosensor using FDTD numerical method,” *Optical and Quantum Electronics*, vol. 57, 2025.

- Prince, Byungun Yoon, **Ananda Shankar Hati**, Prashant Kumar and Prasun Chakrabarti, “Prediction of Energy Consumption and Airflow of a Ventilation System: A SAGA-Optimised Back-Propagation Neural Network-based Approach,” *Expert Systems with Applications*, <https://doi.org/10.1016/j.eswa.2025.129293>, 2025.

Conferences

- Soumyadip Banerjee, Md Asif Hussain, **Tanmoy Maity**, **Ananda Shankar Hati** and Mayank Sharma, “Deep Q-Learning-Based Maximum Power Point Tracking for PMSG-Driven Hybrid VAWTs in Urban Wind Environments,” *IEEE 5th International Conference on Sustainable Energy and Future Electric Transportation (SEFET 2025)*, Jaipur, Rajasthan, India, 2025.
- Md Asif Hussain and **Ananda Shankar Hati**, “Gradient Descent Based Adaptation Mechanism for Sensor-less Induction Motor Drives,” *IEEE 5th International Conference on Sustainable Energy and Future Electric Transportation (SEFET 2025)*, Jaipur, Rajasthan, India, 2025.

tion (*SEFET 2025*), Jaipur, Rajasthan, India, 2025.

- Nishant Mishra, **Ananda Shankar Hati** and Vinod Khadkikar, “Simulation of HVAC Systems in Commercial Buildings—A Theoretical Approach,” *IEEE 5th International Conference on Sustainable Energy and Future Electric Transportation (SEFET 2025)*, Jaipur, Rajasthan, India, 2025.
- Nishant Mishra, **Ananda Shankar Hati** and Sonu Kumar, “Reduction of Torque Ripples in Switched Reluctance Motor Drive Using Fuzzy Logic Controller,” *IEEE 5th International Conference on Sustainable Energy and Future Electric Transportation (SEFET 2025)*, Jaipur, Rajasthan, India, 2025.

Book/Book Chapter

- AA Husain, **T. Maity**, M Rai, and RK Yadav, “Artificial Intelligence-Based Smart Traffic Surveillance System for Vehicles;,” in the Book “Next Generation Data Science and Blockchain Technology for Industry 5.0,” Wiley 2025, pp. 421-455.

Welcome Prof. Priyatosh Mahish in the Department



Prof. Priyatosh Mahish joined as an Assis-

tant Professor in the department of Electrical Engineering on 2nd July 2025.

He received his B.Tech. degree in Electrical Engineering from B.P. Poddar Institute of Management and Technology, Kolkata, India in 2010. In 2013, he received his M.E. degree in Electrical Power Systems from BIT Mesra. He completed his Ph.D degree from IIT Kharagpur in 2021 in the area of wide-area control of the large power networks. Following his Ph.D. degree, he joined the Department of Electrical Engineering at the Indian Institute of Technology Delhi as Post Doctoral

Fellow. Before joining the Department of Electrical Engineering at Indian Institute of Technology (Indian School of Mines) Dhanbad, he had been working as an Assistant Professor at Indian Institute of Technology Mandi since October 2022.

He has received the prestigious *POSOCO Power System Award (2022)* for his doctoral research work.

His research interests include smart grid operation, wide-area power system monitoring and control, and grid-integration of renewable energy resources.

OUTREACH ACTIVITIES

WORKSHOP ORGANIZED

- FIVE days Executive Training Course course on “Working with Programmable Logic Controller (PLC) – Programming, Troubleshooting Mining Applications” 7 to 11 JULY, 2025. Coordinators: **Prof. Sanjoy Mandal**, **Prof. Tanmoy Maity**

- **Prof. Arijit Baral** delivered an invited lecture at a national workshop titled “Integrating HPC, SLURM, CUDA, and Cybersecurity for AI in Power Utilities (IHSCCP-2025),” Organized by IEST, Shibpur
- **Prof. Nitai Pal** was appointed to conduct Ph.D. viva-voce examination of Research Scholar of IIT Delhi.

Kumaran Bharatheedasan (17DP000279), a part-time research scholar has been provisionally awarded with PhD degree in July 2025 on the topic “Real-Time Monitoring and Prognostics of Rotating Machinery Using Hybrid Deep Learning for Bearing Fault Diagnosis and Life Prediction,” under the guidance of **Prof. Tanmoy Maity**.

Hearty Congratulations to him !

EVENT FOR AUGUST 2025

Executive Development Program (EDP) on “Electrical Safety and Precautionary Maintenance for Sustainable Mines” held during 4th August to 8st August 2025 at EDC, IIT(ISM) Dhanbad: CI- **Prof. Nitai Pal** and Co-CI- **Prof. P. K. Sadhu**.

🔗Link: <https://www.iitism.ac.in/seminar-1>

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