

Department of Electrical Engineering

Indian Institute of Technology (Indian School of Mines) Dhanbad



VIBHAV



Vol.II, No.5

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Monthly Newsletter

MESSAGE FROM HoD's DESK

By PROF. SUKANTA DAS



Dear All,

Greetings from IIT(ISM) Dhanbad!

It gives me immense pleasure to present the "November 2025" edition of the Department of Electrical Engineering's monthly newsletter, "VIBHAV".

The month of November 2025 highlights a few notable individual achievements that reflect the dedication, excellence, and collective efforts of our faculty, students, and staff.

I also warmly invite our students to contribute actively toward enhancing the quality, diversity, and outreach of our monthly newsletter. Your constructive feedback and valuable suggestions are most welcome and may be shared at ee@iitism.ac.in to help us continually improve future editions of "VIBHAV".

Thank you for your continued support and engagement.

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. Tanmoy Maity received a consultancy "Vetting of Design Parameters of 400 KWP on Grid-Solar Plant" from *NBCC (India) Limited, Bhubaneswar* as CI, with a sanctioned amount of Rs 2,12,400.

Hearty Congratulations for his achievement !



PUBLICATIONS

Journals

- Sumit Paul, Prakash Kumar, and **Kalyan Chatterjee**, "Detection and mitigation of cyber attack in DFIG-based wind energy systems," *Journal of Sustainable Energy, Grids and Networks (Elsevier)*, vol. 44, Dec. 2025, 102057, doi: 10.1016/j.segan.2025.102057.
- Swati Lipsa, Ranjan Kumar Dash, Subhra Debdas, Korhan Cengiz, Pankaj Kumar, and **Nitai Pal**, "Enhancing cardiac disease prediction with explainable bidirectional LSTM," *Scientific Reports, Nature Portfolio*, ISSN: 2045-2322, pp. 1-18, vol. 15, 41241, 2025, doi: 10.1038/s41598-025-25071-8.
- **B. Bhattacharyya** and S. K. Rajbhar, "Optimal VAR management of a large power network using most efficient method of weak node detection," *Measurement: Energy*, vol. 8, p. 100077, Dec. 2025, doi: 10.1016/j.meane.2025.100077.

OUTREACH ACTIVITIES

- **Prof. Nitai Pal** conducted Ph.D. Viva-voce Examination for Research Scholar of MNIT, Jaipur as an External Examiner.
- **Prof. Nitai Pal** evaluated Ph.D. Thesis of Research Scholar of Integral University, Lucknow as an External Examiner.

- **Prof. Nitai Pal** delivered an expert lecture in 2nd National Level FDP on “Recent Trends in Electrical and Electronics & Communication Technology”, organized by Tripura University (A Central University), Tripura held in November 2025.

UPCOMING EVENTS

Executive Development Program (EDP) on “Electrical Safety and Smart Maintenance for Sustainable Mines” to be held during 05th – 09th January 2026 at Seminar Room (No. 113), 1st Floor, New Academic Complex, Department of Electrical Engineering, IIT(ISM) Dhanbad: CI- **Prof. Nitai Pal**, Professor and Co-CI- **Prof. P. K. Sadhu**, Professor (HAG), Department of Electrical Engineering. Links: <https://www.iitism.ac.in/seminar-1> <https://www.iitism.ac.in/electrical-engineering>

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OBSERVATION OF CONSTITUTION DAY ON NOVEMBER 26, 2025, COMMEMORATING THE ADOPTION OF THE INDIAN CONSTITUTION



FACULTIES WITH RESEARCH INTERESTS

Prof. Ananda Shankar Hati



Deep Learning-based CBM, AI-based Energy Efficiency Of Drives, Intelligent Systems, HVAC, MRAS

Prof. Anirban Ghoshal



Power Electronics, Distributed Generation, Electric Drives

Prof. Arijit Baral



Condition Monitoring of Large Power Equipment; Electromagnetic Field Computation; Insulation Response Analysis; Testing & Diagnosis of Transformer Insulation

Prof. Ashok Kumar



Power electronic converters and control for renewable energy-based systems, Electric vehicle technology, Wireless power transfer, Resonant converters, WBG semiconductor device-based converters, Renewable energy-powered DC microgrid, Multi-port converters for battery charging applications, Reliability analysis for Power Converters

Prof. Bhawana Singh



Nonlinear Control Systems, Lyapunov methods (Control Lyapunov functions), Interval Observers, sliding mode control, Finite-time stability, Fixed-time stability, Prescribed-time stability, Passivity theory and Negative Imaginary theory, Guidance and Control of Unmanned Autonomous Vehicles, ASVs, AUVs.

Prof. Bhukya Krishna Naick



Electrical Drives, Renewable Energy Sources

Prof. Biplab Bhat-tacharyya



Power System planning, dispatch, FACTS devices, Soft computing techniques

Prof. Devara Vijaya Bhaskar



Power Electronics Applications, Drives, And Micro-grid Structure

Prof. Dushyant Sharma



Automatic Load Frequency Control, Renewable Energy Systems, Distributed Control In Power Systems, Microgrids, Grid Forming Inverter Control, and Active Power Control of Interconnected Power Systems

Prof. Gauri Shankar



Power system operation and control, distributed generation, power quality issues in microgrid, and soft computing techniques

Prof. Haswanth Vundavilli



Systems biology, bioinformatics, and computational modeling applied to cancer therapy and drug discovery

Prof. Kalyan Chatterjee

Cyber Physical System, Power System, Soft Computing Application In Power System, Renewable Energy

Prof. Kartick Chandra Jana

Power Electronics, Multilevel Converters, Motor Drives, Renewable Energy Extraction

Prof. Nitai Pal

Power Electronics, Power Systems, Renewable Energy

Prof. Paresh Kumar Nayak

Protection, control and monitoring of modern power grids including FACTS devices and large-scale integration of renewable energy sources.

Prof. Pradip Kumar Sadhu

Power Electronics Applications, Application Of High Frequency Converter, Energy Efficient Devices, Energy Efficient

Prof. Priyatosh Mahish

Smart grid operation, wide area power system monitoring and control, and grid-integration of renewable energy resources

Prof. Sanjoy Mandal

Instrumentation ,Fiber Optic sensors, Integrated Photonics and AI integrated control System Design. Research interest also includes design and development of interdisciplinary module bridging electrical engineering with photonics, quantum technology, and computational intelligence

Prof. Sethupathy S

Electromagnetic Analysis, Power Electronics, Electric Vehicles

Prof. Shyam A B

Power Electronic Converters, Wide Band Gap (WBG) Based Circuits, Distributed Generation And Micro-grids

Prof. Somnath Pan

Reduced Order Modelling & Controller Design for Process Control and Power System Applications. Keywords: PID, Fractional PID, ADRC, SMC, LFC, AVR, MIMO Process

Prof. Sonam Acharya

Design Of High Frequency Power Converters Using Wide Band Gap Devices, EV Charging Technology, Application Of Embedded Systems In Power Electronics, Renewable Integrated Mixed Energy Systems

Prof. Soumyabrata Barik

Power System, Distribution Network, Renewable Energy, Electric Vehicles

Prof. Sukanta Das

Electric Vehicles, Brushless Machines, Electric Machine Control, High Performance Drives, Fast Battery Charging Technologies

Prof. Sukanta Halder

Electric Vehicle, PMSM Drives, Intelligent EV , Data Driven BMS , Machine Learning-based Motor Control, WBG (SiC & GaN) Inverter Development, Gate Driver Design, Multi-level Inverters, Hydrogen Fuel Cell Based HEV.

Prof. Tanmoy Maity

Power Electronics, Instrumentation, Mine Electrical Engineering, Energy Management

Prof. Vedantham Lakshmi Srinivas

Grid Integration of Renewable Energy Sources (Solar PV & Solar Thermal, Wind, Hydro, Pumped Storage, Tidal, Geothermal), Associated Control Systems, Electric Vehicles (Motor Drives, Battery Management Systems, Charging Infrastructure, V2G & G2V Technologies), AC-DC Microgrids, Cyber Physical Power Systems, State Estimation, Virtual Power Plants

Prof. Vivekananda Mukherjee

Small signal stability, Restructured power systems, Distributed Generation, and Evolutionary computing techniques

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