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**Editor: Dr. Sanjoy Debbarma, HOD
Department of Electrical
Engineering**

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About the Department

The Department of Electrical Engineering started since the inception of NIT Meghalaya. Presently the department offers B.Tech, M.Tech and Ph.D. Programs. The B. Tech program started in 2010 with an intake of 30 students at NIT Surat and from 2014 onward M.Tech program started with an intake of 20 students offering specialization in Power & Energy Systems. Presently there are full-time and part-time research scholars, registered for the Ph.D. program in diverse specializations. The Department aims to impart high-quality education to the students and carry out fundamental and industry-oriented research work. The research interest of faculties encompasses various areas of electrical engineering such as Power system Control, Smart Grid Technology, Synchrophasor Technology, Power Quality and Renewable energy integration to the grid, Power Electronics & Drives, Control Systems and Instrumentation, Signal Processing and Biomedical Instrumentation, High Voltage Engineering, etc. The department has well-equipped laboratory facilities for the students such as Basic Electrical Engineering Lab, Electrical Machine Lab, Network and Systems Lab, Digital Electronics Lab, Power System Lab, Computational Lab, Control & Instrumentation Lab, Power Electronics Lab, Electric Drives Lab, Microprocessor Lab, Microcontroller & Embedded Systems Lab. Specialized simulation software like Matlab, Sincal, FLUX, PSPICE, PSIM, PSS@E, EMYP etc. is available with the department to carry out experiments and research activities. Besides, the faculty of the EE department is very actively publishing papers in reputed journals and conferences such as IEEE, IET, Elsevier, Springer, Taylor and Francis, Wiley, etc. Moreover, faculty members of the EE department have received several sponsored research projects from various agencies like SERB-DST, CPRI, REC, and the State Council of Science Technology & Environment (SCSTE, Govt. of Meghalaya).

Programs Offered: Currently, the EE department is offering

- B.Tech in EEE
- M.Tech in Power & Energy Systems (Full-Time as well as Sponsored Part-Time)
- Ph.D. in various Specializations (Full-Time as well as Part-Time)

Faculty Profile

Name	Designation	Qualification	Specialization	Date of Joining	Ph.D. Guiding (Ongoing)	Guided/ Thesis Submitted
Dr. S. Debbarma	Assistant Professor	B.E, M.Tech, Ph.D	Power Systems	19 June 2012	05	01
Dr. P. P. Singh	Assistant Professor	B.Tech, M.Tech, Ph.D	Control Systems	31 May, 2016	03	Nil
Dr. Rakesh Roy	Assistant Professor	B.E, M.Tech, PhD	Power Electronics & Electric Machine Drives	03 January 2013		
Dr. Shaik Affijulla	Assistant Professor	B.Tech, M.Tech, Ph.D	Power Systems	03 January 2013	02	01
Dr. Ksh Milan Singh	Assistant Professor	B.Tech, M.Tech, PhD	Instrumentation and Signal Processing	24 May 2016	03	Nil
Dr. Atanu Banerjee	Associate Professor	B.E, M.Tech, PhD	Power Electronics & Drives	25 August, 2014	07	03
Dr. Gayadhar Panda	Professor	Ph.D	Power Electronics	29 January 2013		
Dr. Supriyo Das	Assistant Professor	B.Tech, M.Tech, Ph.D	High Voltage Engineering	25 th August 2014	0	0
Dr. Ramyani Chakrabarty	Trainee Teacher	B.Tech, M.Tech, Ph.D	Power & Control	21 st July, 2014	0	0

Staff Profile

Name	Designation	Qualification	Date of Joining	Nature of Job
Mr. Sushanta Nath	Technical Assistant	B.E (NIT Agartala) M.Tech (NIT Meghalaya)	13/08/2012	Regular
Mr. Bankitbok Laloo	Technical Assistant	Diploma	16/12/2021	Regular
Mr. Ankur Rai	Technical Assistant	M.Tech (NIT Nagaland)	22/12/2021	Regular
Mr. Felix Albert Nongneng	Technician	M.Tech (IIT Madras)	14/12/2021	Regular
Mr. Rishandonborlang Mawrie	Technician	B.Tech	16/12/2021	Regular
Mr. Nangskhem Khongwir	Technician	B.Tech	20/12/2021	Regular
Ms. Julene Seka H Thabah	Technician	M.Tech	13/12/2021	Regular
Mr. Vicky Staryson Wahlang	Lab Attendant	B.Tech	23/12/2021	Regular

Publications by Departmental Faculty & Students:

A. Journals:

1. S. D. Roy and S. Debbarma, "Imposter Attacks in Energy Market Operation," in *IEEE Transactions on Smart Grid*, vol. 13, no. 5, pp. 3836-3839, Sept. 2022.
2. Siddhartha Deb Roy, S. Debbarma, Josep. M. Guerrero, A Data-driven Algorithm to Detect False Data Injections Targeting both Frequency Regulation and Market Operation in Power Systems, *International Journal of Electrical Power & Energy Systems*, Elsevier, Vol. 143, December 2022, 108409.
3. Sugandha K and P. P. Singh, "Generation of Multi-scroll Chaotic System via Smooth State Transformation, *Journal of Computational Electronics*", vol. 21, no. 04, pp. 781-791, April 2022.
4. Prakash Chandra Gupta and Piyush Pratap Singh, "Multistability, multiscroll chaotic attractors and angle instability in multi-machine swing dynamics", *IFAC-Papers Online*, Vol. 55, pp. 572-578, May 2022.
5. Piyush Pratap Singh and Binoy Krishna Roy, "Pliers shaped coexisting bifurcation behaviors in a simple jerk chaotic system in comparison with 21 reported systems", *IFAC-Papers Online*, Vol. 55, pp. 920-926, May 2022.
6. P. P. Singh and B. K. Roy, "Chaos and Multistability Behaviors in 4D Dissipative Cancer Growth/Decay Model with Unstable Line of Equilibria", *Chaos, Solitons and Fractals*, vol. 161, pp. 112312, June 2022.
7. P. P. Singh, Ankur Rai and B. K. Roy, "Memristor-based asymmetric extreme multistable hyperchaotic system with a line of equilibria, coexisting attractors, its implementation and nonlinear active-adaptive projective synchronisation", *The European Physical Journal Plus*, vol. 137, Article ID: 875, July 2022.
8. Prakash Chandra Gupta, and P. P. Singh, "Chaos, multistability and coexisting behaviours in small-scale grid: Impact of electromagnetic power, random wind energy, periodic load and additive white Gaussian noise", *Pramana - J. Phys.*, vol. 97, no. 3, December 2022.
9. P. P. Singh, Manashita Borah, Asim Datta, Sajad Jafari and Binoy K. Roy, "Integer cum fractional ordered active-adaptive synchronization to control vasospasm in chaotic blood vessels to reduce risk of COVID-19 infections", *International Journal of Computer Mathematics*, vol. xx, no. xx, pp. xx, Jan 2023. DOI: 10.1080/00207160.2022.2163167
10. S. K. Prince, Shaik Affijulla and G. Panda, "Protection of DC microgrids based on complex power during faults in on/off-grid", *IEEE Transactions on Industry Applications*, vol. 59, no. 01, pp. 244-254, 2023.
11. S. L. Chukkaluru and Shaik Affijulla, "Review of discrete Fourier transform during dynamic phasor estimation and the design of synchrophasor units", *The ECTI Transactions on Electrical Engineering, Electronics, and Communications*, vol. 21, no. 01, pp. 01-18, 2023.
12. S. L. Chukkaluru and Shaik Affijulla, "Chirp Z-Transform based dynamic phasor estimator suitable for phasor measurement units in electric grid", *Springer Journal of Control, Automation and Electrical Systems*, vol. 34, no.01, pp. 216-229, 2023.
13. S. K. Prince, K. P. Panda, R.T. Naayagi, P. Sanjeevikumar, B. Khan, Shaik Affijulla and Gayadhar Panda, "Challenges and Advancements in Protection of DC Microgrid System-A Comprehensive Review", *Taylor & Francis - Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, vol. 44, no. 04, pp. 10481-10505, 2022.
14. Aniruddha Agrawal, Donnagratia Syndor, Dallang M Momin and Shaik Affijulla, "Theorems to explore the nature of cyber attacks on power system voltage stability", *De Gruyter*

- International Journal of Emerging Electric Power Systems*, vol. 23, no. 04, pp. 451-464, 2022.
15. Aniruddha Agrawal and **Shaik Affijulla**, “A concept for discrimination of electrical fault from cyber attack in smart electric grid”, *Journal of Electrical Engineering: Journal of Slovak University of Technology*, vol. 73, no. 04, pp. 299-304, 2022.
 16. S. K. Prince, **Shaik Affijulla** and **G. Panda**, “A fault detection technique based on line parameters in ring-configured DC microgrid”, *De Gruyter International Journal of Emerging Electric Power Systems*, vol. 23, no. 04, pp. 523-542, 2022.
 17. S. L. Chukkaluru, A. Kumar and **Shaik Affijulla**, “Tensor based dynamic phasor estimator suitable for wide area smart grid monitoring applications”, *Springer Journal of Control, Automation and Electrical Systems*, vol. 33, no. 01, pp. 955-964, 2022.
 18. Mukesh Kumar and **Shaik Affijulla**, “On-line estimation of alternators rotor angle dynamics in the modern power system”, *Elsevier International Journal of Electrical Power & Energy Systems*, vol. 134, no. 107314, pp. 01-09, 2022.
 19. Abhishek Chauhan and **Ksh. Milan Singh**, “Recursive sliding DFT algorithms: A review,” **Elsevier, Digital Signal Processing**, vol. 172, no. 103560, pp. 1-15, July, 2022 (DOI:10.1016/j.dsp.2022.103560)
 20. Priyankar Roy, **Atanu Banerjee**, “A study on performance parameters of three-level T-type inverter based PMSM drives for electric vehicles applications” , *Electrical Engineering, Springer*, doi.org/10.1007/s00202-023-01779-6, February,2023.
 21. Manish Kurre, Shailesh Deshmukh, Rajdeep Tandekar, Pratikanta Mishra, **Atanu Banerjee** “A Low-Cost Control Architecture for Buck Converter Fed VSI Based BLDC Motor Drive” *International Journal of Engineering Research in Africa* , ESCI, Vol. 62, pp 161-171, September,2022
 22. Manish Kurre, **Atanu Banerjee**, “Zero voltage switching self-oscillating PWM inverter in induction heating applications” *Journal of Engineering Research*, SCI, DOI: 10.36909/jer.16717, May,2022.
 23. N. Hari Charan, **A. Bandyopadhyay**, Josep M Guerrero, “ Performance Evaluation of Single-Phase Boost-Type Cascaded H -Bridge Inverter in the Applications of Grid-Tied Photovoltaic Systems” in *IEEE Journal of Emerging and Selected Topics in Power Electronics*, DOI: 10.1109/JESTPE.2023.3249905 , February,2023.
 24. Patowary, M., Haes Alhelou,H., **Panda, G.**: Performance assessment and validation of inverter control current controllers in reduced sensor maximum power point tracking based photovoltaic-grid tied system. *IET Energy Syst. Integr.* 4(4), 505–517(2022).
 25. Anurekha Nayak, Manoj Kumar Maharana, Tarlochan Sidhu, Sanjeevikumar Padmanaban & **Gayadhar Panda** (2022) Frequency regulation of a maiden structured power system with integrated renewable energy source by a fuzzy - tuned fractional order controller, *Energy Sources, Part A: Recovery, Utilization, and Environmental Effects*, 44:3, 7841-7856.
 26. P. Buduma, M. K. Das, R. T. Naayagi, S. Mishra and **G. Panda**, "Seamless Operation of Master–Slave Organized AC Microgrid With Robust Control, Islanding Detection, and Grid Synchronization," in *IEEE Transactions on Industry Applications*, vol. 58, no. 5, pp. 6724-6738, Sept.-Oct. 2022.
 27. K. P. Panda, P. R. Bana, R. T. Naayagi and **G. Panda**, "A Dual-Source Self-Balanced Switched-Capacitor Reduced Switch Multilevel Inverter With Extending Ability," in *IEEE Access*, vol. 10, pp. 61441-61450, 2022.
 28. M. Kumar, K. P. Panda, J. C. Rosas-Caro, A. Valderrabano-Gonzalez and **G. Panda**, "Comprehensive Review of Conventional and Emerging Maximum Power Point Tracking

Algorithms for Uniformly and Partially Shaded Solar Photovoltaic Systems," in *IEEE Access*, vol. 11, pp. 31778-31812, 2023.

29. Sao, Jitendra Kumar, **Panda, Gayadhar**, Ray, Pravat Kumar, Patidar, Ram Dayal and Swain, Sushree Diptimayee. "Parameter optimization of PV integrated Shunt Active power filter with Taguchi SNR" *International Journal of Emerging Electric Power Systems*, 2022

B. Book/ Book chapters:

1. **P. P. Singh**, "Nonlinear Systems: Chaos, Advanced Control and Applications", *Nova Science Publishers, Inc. 400 Oser Ave Suite, 1600 Hauppauge, NY, USA*, May 2022. ISBN: 978-1-68507-660-3 (Book)
2. Abhishek Chauhan and **Ksh Milan Singh**, "Sustainable Energy and Technological Advancements, Chapter "Doppler Velocity Estimation Employing mHDFT Phase Locked Loop" *International Symposium on Sustainable Energy and Technological Advancements PP. Springer*, PP. 773-784, 2022. (Book Chapter)

C. Conferences:

1. I. Koley, G. K. Panda, S. Debbarma, A. C. Atoche and A. Datta, "Plug-in Electric Vehicle Aided Load Frequency Control using Cascaded Controller in Microgrid System," *2023 IEEE IAS Global Conference on Renewable Energy and Hydrogen Technologies (GlobConHT)*, Male, Maldives, 2023, pp. 1-7, doi: 10.1109/GlobConHT56829.2023.10087793.
2. S. D. Roy and S. Debbarma, "Deep Learning for Classification of FDIs on Time-Series Sensor Data in Cyber-Physical Power Systems," *2022 IEEE 21st Mediterranean Electrotechnical Conference (MELECON)*, Palermo, Italy, 2022, pp. 665-670, doi: 10.1109/MELECON53508.2022.9843077.
3. S. D. Roy and S. Debbarma, "A Survey on the Security Vulnerabilities in the Cyber-Physical Power Systems," *2022 4th International Conference on Energy, Power and Environment (ICEPE)*, Shillong, India, 2022, pp. 1-6, doi: 10.1109/ICEPE55035.2022.9798028.
4. S. D. Roy and S. Debbarma, "Imposter Attacks Against Data Integrity to Disrupt Power Balancing in Power Systems," *2022 4th International Conference on Energy, Power and Environment (ICEPE)*, Shillong, India, 2022, pp. 1-6, doi: 10.1109/ICEPE55035.2022.9797987.
5. I. Koley, A. Datta, G. K. Panda and S. Debbarma, "TLBO Optimised PID Controller for Coordinated Control in a Hybrid AC/DC Microgrid," *2022 4th International Conference on Energy, Power and Environment (ICEPE)*, Shillong, India, 2022, pp. 1-6, doi: 10.1109/ICEPE55035.2022.9798062.
6. Deep Kumar Biswas and Piyush Pratap Singh, DC Microgrid Power Management by Cascaded PI Control of HESS, *4th IEEE Int. Conference on Energy, Power and Environment (ICEPE)*, NIT Meghalaya, India, 29 April - 01 May, 2022.
7. Piyush Pratap Singh and Binoy Krishna Roy, Secure Communication and Image Encryption via Non-identical Chaotic Systems Synchronisation using Sliding Mode Control, *4th IEEE Int. Conference on Energy, Power and Environment (ICEPE)*, NIT Meghalaya, India, 29 April - 01 May, 2022.
8. Saikumar Puppala, Devendra P., Piyush Pratap Singh, Design of Solar PV System with Single Input-Multi Output (SIMO) DC-DC Converter for Remote Area Applications, *2nd International Symposium on Sustainable Energy and Technological Advancements (ISSETA)*, NIT Meghalaya, India, 24-25 February 2023.
9. Prakash Chandra Gupta, and Piyush Pratap Singh, Nonlinear behaviour of rotor angle dynamics in three machine infinite bus power system, *2nd International Symposium on*

- Sustainable Energy and Technological Advancements (ISSETA)*, NIT Meghalaya, India, 24-25 February 2023.
10. Piklu Das and Piyush Pratap Singh, Non-singular Terminal Sliding Mode Chaos Control of 3-Bus Power System Model, *IEEE IAS Global Conference on Renewable Energy and Hydrogen Technologies (GlobConHT)*, Male City, Maldives, 11-12 March, 2023.
 11. P. V. Rajesh Varma and Shaik Affijulla, “Impact analysis of symmetrical/sequence domain parameters during dynamics in the power system”, *Sustainable Energy and Technological Advancements: Proceedings of ISSETA 2023*, Springer Book Chapter, Singapore, pp. 1-8, Mar 2023.
 12. V. Wahlang and Shaik Affijulla, “Impact of Induced Currents during Shunt Faults in HVAC Transmission Lines”, *Sustainable Energy and Technological Advancements: Proceedings of ISSETA 2023*, Springer Book Chapter, Singapore, pp. 1-8, Mar 2023.
 13. A. P. Vishwakarma, Shaik Affijulla and K. M. Singh, “Comparative Analysis of Optimally Tuned PI Controller Based SAPF for Harmonic Elimination”, *IEEE IAS Global Conference on Renewable Energy and Hydrogen Technologies (GlobConHT)*, Male, Maldives, pp. 1-6, Feb 2023.
 14. P. V. Rajesh Varma and Shaik Affijulla, “Anti-aliasing Filter Leakage Characteristics for Utilization in Phasor Measurements Units”, *IEEE 10th Power India International Conference (PIICON)*, New Delhi, India, pp. 1-6, Nov 2022.
 15. S. K. Dalai, S. K. Prince, A. Abhishek, Shaik Affijulla and G. Panda, “Power Management Strategies for Islanding and Grid-Connected DC Microgrid Systems with Multiple Renewable Energy Resources”, *IEEE Global Conference on Computing, Power and Communication Technologies (GlobConPT)*, New Delhi, India, pp. 1-6, Sep 2022.
 16. A. Sridhar, K. Ravindra and Shaik Affijulla, “A review on architecture of electricity markets”, *IEEE 4th International Conference on Energy, Power and Environment (ICEPE)*, Shillong, India, pp. 1-6, May 2022.
 17. Subhasis Bandopadhyay, Atanu Bandyopadhyay, Ashoke Mondal, Pradip kumar Sadhu, “Harmonic Reduction and Power Quality Improvement in Distributed Power Flow Controller by Space Vector PWM”, *5th international conference on Energy Systems, Drives and Automations: ESDA2022, Applied Computer Technology, Kolkata*, 31st December, 2022-1st January, 2023.
 18. Manish Kurre, Priyankar Roy, Atanu Banerjee, Pradip Kumar Sadhu,” Nine level asymmetrical switched capacitor multilevel inverter fed induction heated autoclave system for medical applications” , *5th international conference on Energy Systems, Drives and Automations: ESDA2022, Applied Computer Technology, Kolkata* ,31st December,2022-1st January,2023.
 19. Bodhisatwa Bhattacharya, Atanu Banerjee “A comparison of STATCOM and modified-UPFC 3-level inverters in renewable energy”,*5th international conference on Energy Systems, Drives and Automations: ESDA2022*, 31st December, Applied Computer Technology, Kolkata,2022-1st January,2023.
 20. Edapha Rhema Jones Chullai and Atanu Banerjee “Application of a BDDC bidirectional brushless DC drive on a pump hydro energy storage system”, *5th international conference on Energy Systems, Drives and Automations: ESDA2022*, 31st December, Applied Computer Technology, Kolkata,2022-1st January,2023.
 21. Edapha Rhema Jones Chullai , Atanu Banerjee , Pradip Kumar Sadhu, “Experimental investigation of a grid-tied high efficiency reversible Pump-turbine energy storage system employing an adjustable BLDC drive” , *5th international conference on Energy Systems, Drives and Automations: ESDA2022*, 31st December, Applied Computer Technology, Kolkata,2022-1st January,2023.
 22. Priyankar Roy, Atanu Banerjee, “A Microcontroller Based Battery Charger Prototype using TRIAC AC Voltage Controlling”- *5th international conference on Energy Systems, Drives*

- and Automations: ESDA2022*, 31st December, Applied Computer Technology, Kolkata, 2022-1st January, 2023.
23. HARI CHARAN N and A Bandyopadhyay, "A Single-Stage Boost-Type Cascaded H-bridge Multilevel Inverter" accepted for presentation in 2022 *IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES)*, MNIT Jaipur during 14th -17th December, 2022.
 24. P Roy, M Kurre and A Bandyopadhyay, "GH-reference frame based SVPWM controlled T-type NPC inverter fed PMSM drive for Electric Vehicle applications" accepted for presentation in 2022 *IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES)*, MNIT Jaipur during 14th -17th December, 2022.
 25. S. K. Dalai, K. P. Panda, R. Thakur and G. Panda, "Three Phase Multilevel Switched Capacitor Inverter for Low/High Voltage Applications using PD-PWM Technique," 2023 *IEEE IAS Global Conference on Renewable Energy and Hydrogen Technologies (GlobConHT)*, Male, Maldives, 2023, pp. 1-6.
 26. A. Bharate, P. K. Ray, A. Ghosh and G. Panda, "Implementation of Composite Storage System in a PV-Integrated DC Microgrid for Active Power Sharing," 2023 *IEEE IAS Global Conference on Renewable Energy and Hydrogen Technologies (GlobConHT)*, Male, Maldives, 2023, pp. 1-6.
 27. M. Kumar, K. P. Panda, J. Moharana, R. Thakur and G. Panda, "Hybrid Energy Source Based BLDC Motor Drive for Electric Vehicle Application," 2023 *2nd International Conference for Innovation in Technology (INOCON)*, Bangalore, India, 2023, pp. 1-6.
 28. S. Samal, P. Nayak, R. K. Mallick, A. Bhoi, S. Mishra and G. Panda, "Harmonic Estimation of PV - Integrated Microgrid Using Kalman Filter," 2022 *IEEE Global Conference on Computing, Power and Communication Technologies (GlobConPT)*, New Delhi, India, 2022, pp. 1-6.
 29. S. K. Dalai, S. K. Prince, A. Abhishek, S. Affijulla and G. Panda, "Power Management Strategies for Islanding and Grid-Connected DC Microgrid Systems with Multiple Renewable Energy Resources," 2022 *IEEE Global Conference on Computing, Power and Communication Technologies (GlobConPT)*, New Delhi, India, 2022, pp. 1-6.
 30. M. Kumar, G. Panda and D. V. S. K. R. K., "Analysis of Conventional and Interleaved Boost Converter with Solar Photovoltaic System," 2022 *International Conference on Intelligent Controller and Computing for Smart Power (ICICCSPP)*, Hyderabad, India, 2022, pp. 1-6.
 31. S. Sahoo, P. S. Puhan and G. Panda, "Power control of a variable speed DFIG based wind turbine using two fuzzy logic controllers," 2022 *International Conference on Intelligent Controller and Computing for Smart Power (ICICCSPP)*, Hyderabad, India, 2022, pp. 1-5.
 32. S. K. Dalai, S. K. Prince, K. P. Panda and G. Panda, "Harmonic Mitigation in a Grid Interfacing PV Assisted Three-Phase Multilevel Switched Capacitor Inverter," 2022 *International Conference on Intelligent Controller and Computing for Smart Power (ICICCSPP)*, Hyderabad, India, 2022, pp. 1-6.
 33. B. V. S. Prasad, N. Saha and G. Panda, "Parameter Extraction of PV Module using CamWOA Technique," 2022 *International Conference on Intelligent Controller and Computing for Smart Power (ICICCSPP)*, Hyderabad, India, 2022, pp. 1-5.
 34. S. S. Rath *et al.*, "Protection Study in 9-Generator Power System Under Grid-Connected Mode of Operation," 2022 *International Conference on Intelligent Controller and Computing for Smart Power (ICICCSPP)*, Hyderabad, India, 2022, pp. 1-5.
 35. N. Saha, S. K. Sahoo, A. K. Swain, S. Panda and G. Panda, "Parameter Extraction of PV Module using Proposed BESAS Technique," 2022 *IEEE IAS Global Conference on Emerging Technologies (GlobConET)*, Arad, Romania, 2022, pp. 453-458.
 36. T. S. V. S. P. Teja, S. K. Prince, M. R. D. Adhikari, N. B. P and G. Panda, "Enhancement of Power Quality with a Wind-Integrated Shunt Active Power Filter," 2022 *4th International Conference on Energy, Power and Environment (ICEPE)*, Shillong, India, 2022, pp. 1-6.

37. A. Panda and G. Panda, "Modular multilevel inverter configuration with lesser switch counts," *2022 4th International Conference on Energy, Power and Environment (ICEPE)*, Shillong, India, 2022, pp. 1-5.

Conference/ Workshop/ Seminar Organized by Department

1. Organized *2nd International Symposium on Sustainable Energy and Technological Advancements*, which is being organized by the Department of Electrical Engineering, NIT Meghalaya, Shillong, India during 24th – 25th February, 2023.
2. *Organized 4th International Conference on Energy, Power & Environment*, Sponsored by IEEE Kolkata, IEEE IAS, IEEE Guwahati Subsection, NIT Meghalaya, 29 April – 01 May 2022.



Fig 1: *2nd International Symposium on Sustainable Energy and Technological Advancements* during 24th – 25th February 2023.





Fig 2: 4th International Conference on Energy, Power and Environment during 29 April – 01 May 2022.

Conferences / Workshops / Seminars / Training Attended by faculty members

Sl. No.	Name of Faculty	Name of the Programme Attended
4	Dr. Ksh Milan Singh	3
5	Dr. P. P. Singh	3

Invited Talks Delivered:

- Dr. S. Debbarma delivered Talk on "*Application of Data Analytics in Power System*", HRD Training Program on 01-02, December 2022 at NERLDC, POSOCO, Shillong.
- **Dr. S. Affijulla** delivered Talk on "*Fundamentals of Phasor Measurement Units*", HRD Training Program on 01-02, December 2022 at NERLDC, POSOCO, Shillong.

Sponsored Projects Granted

Sl. No.	Title of the Project	Investigators (P.I. / Co-P.I.)	Funding Agency	Funding amount	Duration	Status
1	Design and development of Multilevel Inverter based Distributed Power Flow Controller (DPFC) FACTS for a grid integrated system with renewable energy sources	PI	CPRI, Govt. of India	34 lakh	2 years	Ongoing

Awards Won/ Recognition received at the national and international level

1. Dr. Sanjoy Debbarma, was awarded the "**Global Research Excellence Award**" at IEEE IAS Global Conference on Renewable Energy and Hydrogen Technologies 2023, organized by Maldives National University, Male, Maldives during 11-12, March 2023.
2. Dr. Rakesh Roy, Assistant Professor, EE Dept, received first prize at **Techno Exhibit - 2022** organized by NIT Meghalaya & SCSTE during 11 - 12 May 2022.
3. Mr. Priyankar Roy & Mr. Raja Gandhi, Ph.D. Scholars of the EE Dept., received North East India Student Travel Awards, at the **10th IEEE International Conference on Power Electronics, Drives & Energy Systems** (IEEE PEDES 2022) from 14-17 December 2022, held at NIT Jaipur.
4. Dr. Siddhartha Deb Roy, Ph.D. Scholar, EE Dept., has received the "Best Paper Award" at **4th IEEE ICEPE 2022**, 29 April – 01 May 2022, for the paper entitled "**Imposter Attacks Against Data Integrity to Disrupt Power Balancing in Power Systems**".

Patents Filled/Granted

1	Dr. Atanu Banerjee	1. Pradip K. Sadhu, Agamani Chakraborty, Atanu Bandyopadhyay & Nitai Pal "A System for Induction Heated Sterilization of Surgical Instruments and a Method for the Same"- Published in Journal of Intellectual Property India (Journal No-49/2014), Department of Industrial Policy & Promotions, Government of India, December, 2014, page no: 12723 & Patent (Application No: 1052/KOL/2014,dated 16.10.2014) is granted, August,2022, patent no. 403045
2	Dr. G. Panda	5. Satyavarta Kumar Prince, Kaibalya Prasad Panda, Shaik Affijulla and Gayadhar Panda, "GRID- RESILIENT SOLAR PHOTOVOLTAIC FED SHUNT ACTIVE POWER FILTER SYSTEM AND CONTROL METHOD THEREOF", Indian Patent Filed and the Patent Application No: 202331005669, dated: 2/10/2023.

Membership of Professional Bodies

Sl. No.	Name of Faculty	Membership
1.	Dr. S. Debbarma	Senior Member IEEE, IEEE PES Society, IEI (India)
2.	Dr. P. P. Singh	Senior Member IEEE, IEEE Control System Society, IEI (India), Automatic Control & Dynamic Optimization Society (ACDOS), Member
3.	Dr. Rakesh Roy	IEEE, IEI
4.	Dr. Shaik Affijulla	Senior Member IEEE, IEI
5.	Dr. Atanu Banerjee	IEEE, IEI
6.	Dr. Ksh Milan Singh	Senior Member IEEE, IEI
7.	Prof. Gayadhar Panda	Senior Member IEEE, Fellow IE (I), Life Member ISTE
8.	Dr. Supriyo Das	Senior Member IEEE, IEEE DEIS society & IEEE PES society
9.	Dr. Ramyani Chakrabarty	IEEE Students Member



Thank You

