

Dr. Prasanta Kumar Jena

 0000-0002-5626-6241

 pkj.ped@gmail.com

 +91-9658546360

 +91-9584012340



Employment History

- Aug 2023- Cont.  **Assistant Professor**, Department of Electrical and Electronics Engineering, *BVRIT HYDERABAD College of Engineering for Women, Hyderabad, Telangana, India.*
- Aug 2022-Aug 2023  **Assistant Professor**, Department of Electrical Engineering, *OP Jindal University, Chhattisgarh, India.*
- Feb 2018-June 2018  **Temporary Faculty**, Department of Electrical Engineering, *National Institute of Technology Raipur, Chhattisgarh, India.*
- July 2014 – Jan 2018  **Assistant Professsor**, Department of Electrical Engineering, *Rungta College of Engineering & Technology (R1), Bhilai, chhattisgarh, India.*
- Jan 2010 – June 2012  **Lecturer**, Department of Electrical & Electronics Engineering, *Gandhi Institute of Advanced Computer and Research, Odisha, India.*

Education

- 2018 – 2023  **Ph.D., in Electrical Engineering, National Institute of Technology Raipur, Chhattisgarh, India.** Thesis title: *Security Enhancement of Electricity Market Operation in Smart Grid Against Cyberattacks.*
- 2012 – 2014  **M.Tech. in Power Electronics and Drives, KIIT University, Odisha, India.** Passed with **8.25 CGPA**. Thesis title: *Design of a Static Kramer Drive for a Slip Ring Induction Motor.*
- 2004 – 2008  **B.Tech. in Electrical and Electronics Engineering, Biju Patnaik University of Technology, Odisha, India** Passed with **7.01 CGPA**. Thesis title: *Over Voltage and Under Voltage Protection of DC Motor.*

Professional Certificates

- Apr 2023 – Oct 2023  **Post Graduate Diploma in Cybersecurity (PGDCS), National Power Training Institute, India.**

Research Publications

SCIE Indexed (Q1) Journal Publications

- P. K. Jena**, H. Palahalli, E. Koley, and S. Ghosh, "A Generalized Stealth Attack Localization Framework for Smart Grid Network Under Real-Time Test Environment," in **IEEE Transactions on Industrial Informatics**, vol. 21, no. 11, pp. 8495-8505, Nov. 2025. [IF=9.9]
- B. Seshasai, S. Ghosh, E. Koley, and **P. K. Jena**, "A Scalable Privacy-Preserving Framework for Cyber-Resilient Electricity Market in Smart Grids," in **IEEE Transactions on Industry Applications**. [IF=4.5]
- B. Seshasai, S. Ghosh, E. Koley and **P.K. Jena**, "Real-Time Impact Assessment of Sensor Measurement Falsification on Smart Grid Operations," in **IEEE Transactions on Instrumentation and Measurement**. [IF=5.9]

4. B. Seshasai, E. Koley, **P. K. Jena**, and S. Ghosh, "Design of Real-Time False Data Injection Attack on Electricity Market With Limited Sensor Accessibility," in **IEEE Systems Journal**, vol. 18, no. 4, pp. 1999-2009, Dec. 2024, [IF=4.4]
5. **P. K. Jena**, S. Ghosh, & E. Koley, "A Binary-Optimization-Based Coordinated Cyber-Physical Attack for Disrupting Electricity Market Operation," in **IEEE Systems Journal**, vol. 15, no. 2, pp. 2619-2629, 2021. [IF=4.4]
6. **P. K. Jena**, S. Ghosh, & E. Koley, "Identification of Optimal Sensor Location Based on Trade-Off Approach to Improve Resiliency of Electricity Market in Smart Grid," in **IEEE Sensors Journal**, vol. 21, no. 15, pp. 17271-17281, 1 Aug.1, 2021.[IF=4.5]
7. **P. K. Jena**, E. Koley, & S. Ghosh, "An Optimal Scheme for Installation of PMUs and IEDs to Reinforce Electricity Market Immunity Against Data Attacks in Smart Grid," in **IEEE Journal of Emerging & Selected Topics in Industrial Electronics**, vol. 4, no. 2, pp. 603-613, April 2023. [IF=4.0]
8. **P. K. Jena**, S. Ghosh, & E. Koley, "Identification of strategic sensor locations for intrusion detection and classification in smart grid networks," in **International Journal of Electrical Power & Energy Systems**, vol. 139, 107970, 2022.(an Elsevier Publication)[IF=5.0]
9. **P. K. Jena**, S. Ghosh, E. Koley, D.K.Mohanta, & I. Kamwa, "Design of AC state estimation based cyber-physical attack for disrupting electricity market operation under limited sensor information," in **Electric Power Systems Research**, Vol. 205, 107732, 2022.(an Elsevier Publication) [IF=4.2]
10. **P. K. Jena**, S. Ghosh, & E. Koley, "Design of a coordinated cyber-physical attack in IoT-based smart grid under limited intruder accessibility," in **International Journal of Critical Infrastructure Protection**, vol.35, 100484, 2021.(an Elsevier Publication)[IF=5.3]
11. **P. K. Jena**, S. Ghosh, E. Koley, & M. Manohar, "An Ensemble Classifier-Based Scheme for Detection of False Data Attacks Aiming at Disruption of Electricity Market Operation", in **Journal of Network and Systems Management**, Vol. 29, Page 1-26, 2021. (A Springer Publication)[IF=3.9]

SCOPUS Indexed Journal Publications

1. S. P.Makhija, S.P.Dubey, R. C.Bansal, & **P.K.Jena**, "Techno-Environ-Economical analysis of floating PV/On-ground PV/grid extension systems for electrification of a remote area in India", in **Technology and Economics of Smart Grids and Sustainable Energy**, 6(1), 1-10, 2021.

Conference Proceedings

1. C. V. Subba, M. Prashanth, C. K. Reddy, **P.K.Jena** and R. Manojkumar, "A Comprehensive Review on Modulation Techniques for VSI-Fed Multiphase Induction Motor," 2026 4th Odisha International Conference on Electrical Power Engineering, Communication and Computing Technology (ODICON), Bhubaneswar, India, 2026, pp. 1-6
2. M. K. Barwar, A. K. Tiwari, S. T. Cherla, L. K. Sahu, S. Singh and **P.K.Jena**, "C-HIL Validation of Reduced Device Stress Multilevel PFC Rectifier for EV Charging Application Using OPAL-RT," 2025 12th National Power Electronics Conference (NPEC), Kozhikode, India, 2025, pp. 1-6.
3. A. K. Tiwari, **P.K.Jena**, K. Singh, P. Sharma, P. Kushwaha and S. P. Tiwari, "Multilevel PFC Converters for Efficient EV Battery Chargers," 2025 IEEE International Transportation Electrification Conference (ITEC-India), Pune, India, 2025, pp. 1-6
4. C. K. Reddy, B. S. Rao, **P.K.Jena**, C. V. S. Reddy, R. Manojkumar and M. Prashanth, "Optimizing Energy Management Through Vehicle to Grid and Grid To vehicle Integration," 2025 IEEE International Transportation Electrification Conference (ITEC-India), Pune, India, 2025, pp. 1-6.

5. C. K. Reddy, R. Manojkumar, **P.K.Jena**, M. Prashanth, B. S. Rao and C. V. Subba Reddy, "Low Energy Building Management Using Arduino Microcontroller," 2025 International Conference on Power Electronics and Energy (ICPEE), Bhubaneswar, India, 2025, pp. 1-6
6. C. K. Reddy, B. S. Rao, **P.K.Jena**, R. Manojkumar, M. Prashanth and C. V. S. Reddy, "Solar-Powered Weather Monitoring System with Cloud Integration," 2025 International Conference on Green Energy, Computing and Sustainable Technology (GECOST), Miri Sarawak, Malaysia, 2025, pp. 1-5.
7. C. K. Reddy, R. Manojkumar, **P.K.Jena**, B.S.Rao, C. Gowthami and Y. Roshini, "Solar-Powered Real-Time Air Quality Monitoring System Using Arduino," 2025 Innovations in Power and Advanced Computing Technologies (i-PACT), Surabaya, Indonesia, 2025, pp. 1-7.
8. C. K. Reddy, R. Manojkumar, B. S. Rao and **P.K.Jena**, "Modbus Communication Based Data Extraction Energy Monitoring System," 2024 International Conference on Smart Electronics and Communication Systems (ISENSE), Kottayam, India, 2024, pp. 1-5.
9. C. K. Reddy, R. Manojkumar, **P.K.Jena**, and B. S. Rao, "Electrical Parameters Data Extraction for Effective Monitoring and Controlling of Smart Buildings," 2024 International Conference on Sustainable Power & Energy (ICSPE), Raigarh, India, 2024
10. S. P. Tiwari, **P.K.Jena**, A. K. Tiwari and R. Verma, "A Protection Scheme for Fault Identification in AC Microgrid Using LDA-Based Algorithm," 2024 International Conference on Computational Intelligence for Green and Sustainable Technologies (ICCIGST), Vijayawada, India, 2024, pp. 1-5.
11. **P.K.Jena**, S. Ghosh, & E. Koley, "Identification of Malicious Data Attacks in a Smart Grid Network Using Spectral Clustering," 2023 IEEE 3rd International Conference on Sustainable Energy and Future Electric transportation (SEFET) 2023, Bhubaneswar, India, 2023.
12. **P.K.Jena**, S. Ghosh, & E. Koley, "An Optimal PMU Placement Scheme for Detection of Malicious Attacks in Smart Grid," 2021 4th Biennial International Conference on Nascent Technologies in Engineering (IC-NTE), NaviMumbai, India, 2021, pp. 1-6.
13. S. T. Rayabagi, **P.K.Jena**, & S. Ghosh, "Design of False Data Injection Attack for Automatic Generation Control," 2020 IEEE First International Conference on Smart Technologies for Power, Energy and Control (STPEC), Nagpur, India, 2020, pp. 1-5.
14. B. L. Prasanna, G. MadhusudhanaRao, S. Kaushaley, S. Nakka, & **P.K.Jena**, "Automatic Bottle Filling and Capping Machine using SCADA with the Internet of Things," 2022 OPJU International Technology Conference on Emerging Technologies for Sustainable Development (OTCON), Raigarh, Chhattisgarh, India, 2023, pp. 1-6.
15. Y. Kishor, R. N. Patel, L. K. Sahu, V. H. Kumar, **P.K.Jena**, & A. K. Tiwari, "A High Gain Z-Source Converter with Reduced Device Count for Distributed PV System," 2022 IEEE 10th Power India International Conference (PIICON), New Delhi, India, 2022, pp. 1-6.
16. S. Srikanth, **P. K. Jena**, A. Tiwari, & K. Goswami, "An interval arithmetic based computation of losses and payback period in high voltage distribution system," 2017 4th IEEE Uttar Pradesh Section International Conference on Electrical, Computer and Electronics (UPCON), Mathura, India, 2017, pp. 124-129.
17. **P. K. Jena**, A. Mohapatra, Srikanth, & P. Choudhary, "Comparative study of solar PV MPPT by Perturbation and Observation and Fuzzy method," 2016 IEEE Uttar Pradesh Section International Conference on Electrical, Computer and Electronics Engineering (UPCON), Varanasi, India, 2016, pp. 515-518.

Book Chapters

1. **P.K. Jena**, S.Ghosh, & E.Koley, "Strategic deployment of advanced measuring instruments to enhance robustness of state estimation in smart grid against cyberattacks", in Smart Metering (pp. 169-185), 2024. Elsevier. (SCOPUS Indexed)

2. S. P.Makhija, P.K. Shrivastava, **P. K., Jena,** S.P.Dubey, & P. Singh, "Techno-Economic Comparative Analysis of On-Ground and Floating PV Systems: A Case Study at Gangrel Dam, India. Photovoltaic Systems Technology", 191-210, 2024, WILEY. (SCOPUS Indexed)
3. R. Manojkumar, S. P. Vaidya, , **P. K., Jena,** S. Ashok, Dasari, S. (2025). Machine Learning and Federated Learning in Industrial Cybersecurity. In AI-Enhanced Cybersecurity for Industrial Automation (pp. 407-438). IGI Global Scientific Publishing. (SCOPUS Indexed)

Patent

1. G.Madhusudhana Rao, R.D.Patidar, Sushree Diptimayee Swain, **Prasanta Kumar Jena,** *Solar Power Charger*, Indian Design no.: 379249-001, Date: 13/02/2023.

M. Tech Thesis Supervision

- | | |
|-------------|--|
| 2022 – 2023 |  Thesis Title: Automatic Gas Filling in a Hydrogen plant Using PLC (Name of the Student: <i>Katyayani rathore</i> ,Roll No. 01PG21061009) in OP Jindal University, Raigarh (C.G.). |
| 2014 – 2015 |  Thesis Title: Power Quality Improvement in Solar Distribution System Using DSTATCOM (Name of the Student: <i>Savitri Manikpuri</i> ,Roll No. 5136213011) in Chhattisgarh Swami Vivekanand Technical University, Bhilai (C.G.).

 Thesis Title: Modeling and Control of an Inverter in a Grid Connected PV System Using Fuzzy Tuned PI Controller (Name of the Student: <i>Bhavna Sahu</i> ,Roll No. 5136213006) in Chhattisgarh Swami Vivekanand Technical University, Bhilai (C.G.). |
| 2015-2016 |  Thesis Title: Design of Hybrid Active Filter With Variable Conductance Using Fuzzy-PI Controller for Harmonic Reduction (Name of the student: <i>Abdul Sattar Khan</i> , Roll No. 5136214011)in Chhattisgarh Swami Vivekanand Technical University, Bhilai (C.G.). |
| 2016-2017 |  Thesis Title: An Experimental Analysis of Artificial Neural Network Based Maximum Power Point Tracking for a Photovoltaic System. (Name of the student: <i>Shweta Pandey</i> , Roll No. 5136215005)in Chhattisgarh Swami Vivekanand Technical University, Bhilai (C.G.). |

Project

- | | |
|-------------|---|
| 2018 – 2022 |  Contributed to fulfilling the objectives of the project titled "Detection of Data Attacks and Design of resistance mechanism in smart grids", funded by the Interdisciplinary Cyber-Physical Systems (ICPS) division of the Department of Science and Technology, Government of India under Research Grant DST/ICPS/Cluster/CS Research/2018(General) and published five SCIE journals. |
| 2022 |  Contributed in preparing the proposal for the project titled " Development of a Cyberattack Resilient Smart Grid Network" applied under the Indo-US Collaborative Research. |

Skills

- | | |
|-----------|---|
| Coding |  Matlab, Python, LaTeX. |
| Hardware |  Typhoon HIL real-time simulator, Phasor measurement unit (PMU). |
| Academic |  Academic research, teaching, training, LaTeX typesetting, and publishing. |
| Languages |  Reading, writing and speaking competencies for English, Hindi, Odia. |

Awards and Achievements

- 2026  Received **Best Paper Award** for the paper titled "Scheduling of EV Charging Considering Grid Profile" in the IEEE-International Conference on Electrical and Electronics for Sustainable Innovations 2026 (ICEESI 2026) organised by OP Jindal University Raigarh, India.
- 2024  Delivered lectures on 'Maintenance and Testing of Electrical Machines' for **SWAYAM Course**, an initiative by the **Government of India** that aims to provide quality education online.
-  Received **Best Paper Award** for the paper titled "A Protection Scheme for Fault Identification in AC Microgrid Using LDA-Based Algorithms" in the conference 2024 International Conference on Computational Intelligence for Green and Sustainable Technologies, Vijayawada, India.
- 2023  Delivered lectures on 'Energy Monitoring and Auditing' for **SWAYAM Course**, an initiative of the **Government of India** aimed at providing quality education online.
-  Reviewed lectures delivered on several topics for the **SWAYAM Course**, an initiative of the Government of India aimed at providing quality education online.
-  **Best Innovation Award**, Received best innovation award for presenting a research paper at the conference ERSEM 2023.
- 2020  **K SHANKAR AWARD IEEE BS 2020**, The research article titled "A Binary-optimisation based coordinated cyber-physical attack for disrupting electricity market operation" is awarded in the Professional (Doctoral) Journal category for K SHANKAR IEEE BS 2020 Meritorious Paper Award 2020.
- 2018  **MHRD Scholarship**, Selected under MHRD scholarship for full-time PhD in NIT Raipur.
- 2015  **IEEE UPP mini project scholarship**, Guided students for the UPP mini project titled "Automatic Gate System For Railways" and received a grant of Rs 15000 for 8th semester B Tech students.

Workshop Organised/ Invited Talks/ Session Chair

- Organized a Special Session on **Smart and Secure Energy Networks: Advances in AI, Power Electronics, and Cybersecurity** organised by IEEE-International Conference on Electrical and Electronics for Sustainable Innovations 2026 (ICEESI 2026) during 27th & 28th March 2026.
- Served as a **session chair** for the IEEE conference, ICEESI 2026, organized by OP Jindal University, Raigarh, India, during March 27 – 28, 2026.
- Delivered **expert lecture** on **Application of Optimization and ML Techniques to Secure Smart Grid Against Cyberattacks** in the five-day STTP on 'AI-Driven Solutions for Electrical Engineering: Intelligent Strategies to Tackle Modern EE Challenges' organized by the National Institute of Technology Raipur from 8th to 18th October 2025.
- Delivered **expert lecture** on 6th November 2025 on the title "**Cyber Security in Smart Grid**" during five day FDP on "Emerging trends and Future Prospects in Renewable and Sustainable Energy Systems" Organized by Teerthanker Mahaveer University College of Engineering on 6th October 2025.
- Delivered **expert lecture** on "**Cyber Attacks on Electric Vehicles: Risks, Impact, & Countermeasures**" organized by NIT Warangal in association with BVRIT Hyderabad (Sponsored by the Ministry of Electronics and Information Technology (MeitY), GOI) from 7th to 14th July 2025.
- Delivered **expert lecture** on **Cyberattack Resilient Electricity Markets** during the FDP on 'AI-Powered Smart Grids: Advancing Resilient and Equitable Energy Systems' organized by the O P Jindal University from 16st to 20th June 2025.
- Delivered **expert lecture** on **cyber security in power systems** in the five-day STTP on 'Power system and power electronic research, applications, and real-time simulation' organized by the National Institute of Technology Raipur from 21st to 25th December 2024.

- Served as a **session chair** for the IEEE conference, ICSPE 2024, organized by OP Jindal University, Raigarh, India, during November 28 – 29, 2024.
- Served as a **session chair** for the IEEE conference, ICCIGST 2024, organized by Velagapudi Ramakrishna Siddhartha Engineering College (VRSEC), Andhra Pradesh, India, during July 18 – 19, 2024.
- Served as a **session chair** for the IEEE Sponsored International Conference on Electrical, Computer, and Communication Technologies (ICECCT 2024), organized by CSVTU, Bhilai, India, during June 26 – 28, 2024.
- Delivered an **expert lecture** during a Lecture series for a research seminar on "A Masterclass in Technical Writing", organized by O.P. Jindal University from 4th to 8th March 2024.
- Delivered **expert lecture** during a Five-day faculty development program on "Recent trends in power electronics and their application in power systems", organized by Sandeep University on 24th and 25th March 2023.
- Organized an international five-day online workshop on "Power Electronics and its Applications Using OPAL-RT" from 18.02.2023 to 24.02.2023.
- Served as a **session chair** for the IEEE conference, ICIDEA 2022, organised by KIIT University on 16.10.2022.
- Delivered **expert lecture** on synchronous machines at Jindal Power Limited, Tamnar on 31.08.2022.

Personal Details

Name: Prasanta Kumar Jena

D.O.B.: 07/05/1987

Father's Name: Narahari Jena

Present Address: BVRIT Hyderabad College of Engineering for Women, Hyderabad, 500090.

Permament Address: Sastri Nagar, 8th Lane, Rayagada s.f., Rayagada, Odisha, 765002.

References

Dr.Subhojit Ghosh

Associate Professor

Department of Electrical Engineering,
National Institute of Technology Raipur,

✉ shosh.ele@nitrr.ac.in

☎ +91-7389001453

Dr.Tanmoy Roy Choudhury

Assistant Professor

Department of Electrical Engineering,
National Institute of Technology Rourkela,

✉ choudhuryt@nitrkl.ac.in

☎ +91-9776432644

Declaration

I hereby declare that the above mentioned information is correct.

Date: May 25, 2026

Hyderabad, Telangana, India

Prasanta Kumar Jena