

Dr. Saikat Chakrabarti

Fellow (IEEE, USA) / Fellow (INAE, India) / Fellow (IE, India)

Professor, Department of Electrical Engineering
Indian Institute of Technology Kanpur, Kanpur, UP 208016, India

Email: saikatc@iitk.ac.in / saikat.chakrabarti@gmail.com

Web: saikatchakrabarti.github.io

Education

- Ph.D., Electrical Engineering, Memorial University of Newfoundland, Canada, 2006.
- M.E., Electrical Engineering, Jadavpur University, India, 2000.
- B.E., Electrical Engineering, National Institute of Technology Durgapur, India, 1997.

Research Interests

- Power system monitoring, protection, and control
- Power system dynamics and stability
- Modelling of power system components
- Smart grid
- Microgrid

Professional and Research Experience

- **Professor**, Department of Electrical Engineering, Indian Institute of Technology Kanpur, India. *November 2018 – present.*
- **Professor and Director**, Emera and NB Power Research Centre for Smart Grid Technologies, Electrical and Computer Engineering, University of New Brunswick, Fredericton, Canada. *July 2023 – April 2024* (on long leave from IIT Kanpur).
- **Associate Professor**, Department of Electrical Engineering, Indian Institute of Technology Kanpur, India. *June 2014 – November 2018.*
- **Assistant Professor**, Department of Electrical Engineering, Indian Institute of Technology Kanpur, India. *December 2009 – June 2014.*
- **Lecturer**, Department of Electrical Engineering, Faculty of Built Environment and Engineering, Queensland University of Technology, Brisbane, Australia. *February 2009 – November 2009.*
- **Research Associate**, Department of Electrical Engineering, Faculty of Built Environment and Engineering, Queensland University of Technology, Brisbane, Australia. *August 2008 – January 2009.*
- **Special Scientist**, Department of Electrical and Computer Engineering, University of Cyprus, Cyprus. *October 2006 – July 2008.*
- **PhD Candidate and Teaching Assistant**, Faculty of Engineering and Applied Science, Memorial University of Newfoundland, St. John's, Canada. *September 2002 – September 2006.*
- **Scientific Officer**, Electronics Division, Bhabha Atomic Research Centre, Department of Atomic Energy, India. *April 2000 – June 2002.*
- **Marketing and Commissioning Engineer**, Relay and Control Panels Division, Asea Brown Boveri (ABB) Limited, India. *September 1997 – March 1998.*

Awards and Honors

- Elected Fellow, *International Academy of Artificial Intelligence Sciences (AAIS)*, January 2026.
- Elevated to *IEEE* Fellow from January 2026, for contributions to power system state and parameter estimation, and networked microgrid protection and control.
- Invited to Full Membership in *Sigma Xi, The Scientific Research Honor Society*, USA, September 2025.
- Elected Fellow, *International Artificial Intelligence Industry Alliance*, 2024.
- Awarded Emera Research Chair in Smart Grid Technologies, *Department of Electrical and Computer Engineering, University of New Brunswick*, July 2023 – June 2028 (availed July 2023 – April 2024).
- Awarded Ministry of Skill Development and Entrepreneurship Chair Professorship, *IIT Kanpur*, 2022–2025.
- Elected Fellow, *Indian National Academy of Engineering (INAE)*, 2021, for outstanding contribution to the Smart Grid research and development in India and fundamental contributions to the monitoring, control, and protection of power transmission and distribution systems.
- Elected Fellow, *Institution of Engineers (India)*, 2019.
- Awarded Sajani Kumar Roy Memorial Chair Professorship, *IIT Kanpur*, 2019–2022.
- *India Smart Grid Forum (ISGF)* Innovation Award 2019 in “Smart Technology of the Year” category for the MoP-funded project “Development of R&D Platform for Smart City Pilot Projects in the Indian Context.”
- *IEEE Uttar Pradesh PES/IAS Chapter* Outstanding Engineer Award, February 2016.
- P. K. Kelkar Young Faculty Research Fellow, *IIT Kanpur*, 2012–2015.
- Rated “Best Instructor” by students in the 2nd year undergraduate course “Introduction to Electrical Engineering,” *IIT Kanpur*, 2011–12.
- Senior Member, *Institute of Electrical and Electronics Engineers (IEEE)* (S’05, M’06, SM’11).
- Chairperson, *IEEE PES and IAS, Uttar Pradesh Section*, India, 2010 and 2011.
- David Dunsiger Award for Excellence in graduate studies and research, *Faculty of Engineering and Applied Science, Memorial University of Newfoundland*, 2007.
- President, *Engineering Graduate Students Society (EGSS)*, *Memorial University of Newfoundland*, 2004–2005.

Publications

5.1. Book / Book Chapter

1. S. Chakrabarti, “Voltage Stability of Power Systems,” *Monograph in Foundations and Trends in Electric Energy Systems*, vol. 8, no. 2, pp. 124–168, 2024.
2. S. Chakrabarti, A. Sharma, and S. C. Srivastava, “State Estimation Algorithms,” in *Experiences on Use of State Estimator in Power System Operations*, Springer, 2024. ISBN: 978-3-031-62866-5.
3. S. K. Mallik, S. Chakrabarti, and S. N. Singh, “State estimation in the presence of synchronized measurement,” in *Synchronized Phasor Measurements for Smart Grids*, IET. ISBN: 978-1-78561-011-0.
4. S. Chakrabarti, *Application of Artificial Neural Networks for Online Voltage Stability Monitoring and Enhancement of an Electric Power System*. VDM Verlag, Saarbrücken, Germany, 2008.

5.2. Journal / Magazine Publications

1. N. K. Sharma, S. Chakrabarti, and A. Sharma, “Dynamic thermal line rating estimation of power system,” *IEEE Transactions on Power Delivery*, accepted April 2026 (in press).
2. S. Chatterjee, S. Chakrabarti, and A. Mohapatra, “Bilateral event-triggered adaptive state estimator for demand response enabled distribution systems,” *Electric Power Systems Research*, accepted 2026 (in press).
3. J. K. Mahawar and S. Chakrabarti, “Enhancing performance of doubly fed induction generator

- under unbalanced voltage,” *IEEE Transactions on Industry Applications*, Early Access, 2026. DOI: [10.1109/TIA.2026.3679657](https://doi.org/10.1109/TIA.2026.3679657).
4. N. K. Sharma, S. Chakrabarti, and A. Sharma, “Coordinated state estimation of power transmission and distribution systems,” *IET Generation, Transmission & Distribution*, vol. 19, no. 1, art. 70163, 2025. DOI: [10.1049/gtd2.70163](https://doi.org/10.1049/gtd2.70163).
 5. N. K. Sharma, S. Chakrabarti, and A. Sharma, “Angle reference based three-phase state estimation of power distribution systems,” *IEEE Transactions on Industrial Informatics*, Early Access, 2025. DOI: [10.1109/TII.2025.3579513](https://doi.org/10.1109/TII.2025.3579513).
 6. S. Chatterjee, S. Chakrabarti, and A. Mohapatra, “Adaptive and robust distribution system state estimator handling unknown noise statistics,” *IEEE Transactions on Industrial Informatics*, accepted July 2025 (in press).
 7. S. Chatterjee, S. Ghosh, S. Chakrabarti, and A. Mohapatra, “Data-driven Bayesian framework to mitigate smart meter asynchrony in forecasting aided distribution system state estimation,” *IEEE Transactions on Instrumentation & Measurement*, accepted May 2025 (in press).
 8. J. K. Mahawar, M. Sehrawat, G. M. Vishwanath, and S. Chakrabarti, “Multi-target control technique for DFIG under unbalanced voltage,” *IEEE Transactions on Energy Conversion*, accepted February 2025 (in press).
 9. M. Sehrawat, S. Chakrabarti, and K. Rajawat, “Dynamic state estimator for power systems modeled by constrained differential-algebraic equations,” *Electric Power Systems Research*, vol. 242, art. 111419, May 2025. DOI: [10.1016/j.epsr.2025.111419](https://doi.org/10.1016/j.epsr.2025.111419).
 10. J. Zhao, A. Srivastava, Y. Guo, D. Cetenovic, Y. Lin, V. Levi, G. Yin, M. Huang, T. Zhang, Z. Li, Y. Chen, A. G. Exposito, W. Zhang, W. Zheng, S. Chakrabarti, Y. Li, A. Sharma, I. Kamwa, Q. Guo, V. Terzija, and L. Mili, “State estimation for integrated energy systems: motivations, advances, and future work,” *IEEE Transactions on Power Systems*, accepted December 2024 (in press).
 11. V. Patel, A. Soni, A. Sharma, S. Chakrabarti, A. Meghwani, S. C. Srivastava, A. Srivastava, and J. G. Sreenath, “Performance analysis of smart grid communication networks using co-simulation,” *IEEE Access*, DOI: [10.1109/ACCESS.2023.1120000](https://doi.org/10.1109/ACCESS.2023.1120000).
 12. K. P. Swain, A. Sharma, A. Karkare, S. Chakrabarti, E. Gryazina, and V. Terzija, “Network-level vulnerability assessment of synchrophasor measurement devices,” *IEEE Access*, DOI: [10.1109/ACCESS.2024.3403456](https://doi.org/10.1109/ACCESS.2024.3403456).
 13. S. D. Roy, A. Sharma, S. Chakrabarti, and S. Debbarma, “Securing power system data in motion by timestamped digital text watermarking,” *IEEE Transactions on Smart Grid*, Early Access, 2024. DOI: [10.1109/TSG.2024.3364891](https://doi.org/10.1109/TSG.2024.3364891).
 14. S. Yadav, N. Kishor, S. Purwar, P. Raussi, and S. Chakrabarti, “Switching attack modeling and vulnerability analysis of generator for dynamics study,” *Sustainable Energy, Grids and Networks*, accepted February 2024 (in press).
 15. S. Som, S. Chakrabarti, and S. R. Sahoo, “An adaptive BESS controller for stability enhancement of islanded low voltage microgrids,” *IEEE Transactions on Sustainable Energy*, vol. 15, no. 2, pp. 1256–1268, Apr. 2024. DOI: [10.1109/TSTE.2023.3347539](https://doi.org/10.1109/TSTE.2023.3347539).
 16. S. Yadav, N. Kishor, S. Purwar, S. Chakrabarti, P. Raussi, and A. Kumar, “Real-time implementation for vulnerability of power components under switching attack based on sliding mode,” *IET Cyber-Physical Systems: Theory & Applications*, vol. 9, no. 4, pp. 375–391, 2024. DOI: [10.1049/cps2.12084](https://doi.org/10.1049/cps2.12084).
 17. A. Mitra, S. Ghosh, A. Mohapatra, and S. Chakrabarti, “Data-driven sparsification and multi-resolution analysis based framework for load identification,” *IEEE Transactions on Smart Grid*, vol. 15, no. 3, pp. 2987–2999, May 2024. DOI: [10.1109/TSG.2023.3342408](https://doi.org/10.1109/TSG.2023.3342408).
 18. S. P. Singh, S. Chakrabarti, D. Shukla, and V. Terzija, “Development and implementation of a MATLAB-based phasor data concentrator for synchrophasor applications,” *International Journal of Electrical Power & Energy Systems*, vol. 155, art. 109637, Jan. 2024. DOI: [10.1016/j.ijepes.2023.109637](https://doi.org/10.1016/j.ijepes.2023.109637).
 19. D. Shukla, S. Chakrabarti, and A. Sharma, “Blockchain-based cyber-security enhancement of

- cyber-physical power system through symmetric encryption mechanism,” *International Journal of Electrical Power & Energy Systems*, vol. 155, art. 109631, Jan. 2024. DOI: [10.1016/j.ijepes.2023.109631](https://doi.org/10.1016/j.ijepes.2023.109631).
20. V. K. Gaur, S. Chakrabarti, and A. Sharma, “Improving faulty phase selection in PV integrated system with compensation angle approach,” *Electric Power Systems Research*, vol. 226, art. 109913, Jan. 2024. DOI: [10.1016/j.epsr.2023.109913](https://doi.org/10.1016/j.epsr.2023.109913).
 21. B. Pawar, E. I. Batzelis, S. Chakrabarti, and B. C. Pal, “Interfacing synchronous machine model including stator transients with network for stability studies,” *IEEE Transactions on Power Systems*, vol. 39, no. 1, pp. 987–990, Jan. 2024. DOI: [10.1109/TPWRS.2023.3313671](https://doi.org/10.1109/TPWRS.2023.3313671).
 22. V. Patel, S. Chakrabarti, and A. Sharma, “A weighted deep neural network for processing measurements for state estimation,” *IEEE Transactions on Industrial Informatics*, vol. 20, no. 3, pp. 4027–4038, Mar. 2024. DOI: [10.1109/TII.2023.3313952](https://doi.org/10.1109/TII.2023.3313952).
 23. S. Ghosh, A. Mitra, S. Chakrabarti, and A. Sharma, “Data-driven strategy for appliance identification using phase-space reconstruction,” *IEEE Transactions on Smart Grid*, vol. 15, no. 2, pp. 1738–1750, Mar. 2024. DOI: [10.1109/TSG.2023.3302480](https://doi.org/10.1109/TSG.2023.3302480).
 24. C. L. Dewangan, V. Vijayan, D. Shukla, S. Chakrabarti, S. N. Singh, A. Sharma, and M. A. Hosain, “An improved decentralized scheme for incentive-based demand response from residential customers,” *Energy*, vol. 284, art. 128617, Dec. 2023. DOI: [10.1016/j.energy.2023.128617](https://doi.org/10.1016/j.energy.2023.128617).
 25. Y. Bansal, R. Sodhi, S. Chakrabarti, and A. Sharma, “A novel two-stage partitioning based reconfiguration method for active distribution networks,” *IEEE Transactions on Power Delivery*, vol. 38, no. 6, pp. 4004–4016, Dec. 2023. DOI: [10.1109/TPWRD.2023.3247782](https://doi.org/10.1109/TPWRD.2023.3247782).
 26. A. Mitra, S. Ghosh, A. Mohapatra, and S. Chakrabarti, “Appliance identification via combinatorial fusion analysis-assisted Bayesian-optimized classifier,” *IEEE Transactions on Smart Grid*, vol. 15, no. 2, pp. 1724–1737, Mar. 2024. DOI: [10.1109/TSG.2023.3302051](https://doi.org/10.1109/TSG.2023.3302051).
 27. S. Ghosh, A. Mitra, S. Chakrabarti, and A. Sharma, “Decomposition-transformation assisted optimized heterogeneous classification strategy in NILM,” *IEEE Transactions on Instrumentation and Measurement*, vol. 72, art. 3525514, 2023. DOI: [10.1109/TIM.2023.3290346](https://doi.org/10.1109/TIM.2023.3290346).
 28. B. R. Kumar, A. Mohapatra, S. Chakrabarti, and A. Kumar, “High-speed sub-cycle algorithm for estimation of decaying DC component in current measurements,” *International Journal of Electrical Power & Energy Systems*, vol. 151, art. 109127, Sep. 2023. DOI: [10.1016/j.ijepes.2023.109127](https://doi.org/10.1016/j.ijepes.2023.109127).
 29. V. Patel, A. Kapoor, S. Chakrabarti, and A. Sharma, “Taxonomy of outlier detection methods for power system measurements,” *IET Energy Conversion and Economics*, vol. 4, no. 2, pp. 73–88, Apr. 2023. DOI: [10.1049/enc2.12082](https://doi.org/10.1049/enc2.12082).
 30. S. Som, S. Chakrabarti, S. R. Sahoo, A. Ghosh, and X. Liang, “BESS reserve-based frequency support during emergency in islanded residential microgrids,” *IEEE Transactions on Sustainable Energy*, vol. 14, no. 3, pp. 1702–1713, Jul. 2023. DOI: [10.1109/TSTE.2023.3240636](https://doi.org/10.1109/TSTE.2023.3240636).
 31. M. N. S. K. Shabbir, X. Liang, and S. Chakrabarti, “A hierarchical voltage control scheme for wind power plants through enhanced reactive power support,” *IEEE Transactions on Industry Applications*, vol. 58, no. 5, pp. 5776–5791, Sep./Oct. 2022 DOI: [10.1109/TIA.2022.3161491](https://doi.org/10.1109/TIA.2022.3161491).
 32. B. R. Kumar, A. Mohapatra, R. Gokaraju, and S. Chakrabarti, “Phase angle-based sub-cycle algorithm for high-speed digital relaying of transmission lines,” *IEEE Transactions on Power Delivery*, vol. 37, no. 4, pp. 3416–3419, Aug. 2022 DOI: [10.1109/TPWRD.2021.3134007](https://doi.org/10.1109/TPWRD.2021.3134007).
 33. P. Gangwar, S. Keshewani, S. Chakrabarti, and S. N. Singh, “Multi-objective multi-scenario framework for RCS placement in unbalanced distribution systems considering uncertainty,” *IEEE Systems Journal*, vol. 16, no. 2, pp. 2811–2821, June 2022 DOI: [10.1109/JSYST.2021.3065659](https://doi.org/10.1109/JSYST.2021.3065659).
 34. C. L. Dewangan, S. N. Singh, S. Chakrabarti, and K. Singh, “Peak-to-average ratio incentive scheme to tackle the peak-rebound challenge in TOU pricing,” *Electric Power Systems Research*, vol. 210, art. 108048, Sep. 2022. DOI: [10.1016/j.epsr.2022.108048](https://doi.org/10.1016/j.epsr.2022.108048).
 35. A. Srivastava, S. Chakrabarti, J. Soares, and S. N. Singh, “An optimization-based topology error detection method for power system state estimation,” *Electric Power Systems Research*, vol. 209, art. 107914, Aug. 2022. DOI: [10.1016/j.epsr.2022.107914](https://doi.org/10.1016/j.epsr.2022.107914).

36. M. N. Alam, S. Chakrabarti, and A. K. Pradhan, "Protection of networked microgrids using relays with multiple setting groups," *IEEE Transactions on Industrial Informatics*, vol. 18, no. 6, pp. 3713–3723, June 2022. DOI: [10.1109/TII.2021.3123884](https://doi.org/10.1109/TII.2021.3123884).
37. A. Mitra, R. Dutta, A. Gupta, A. Mohapatra, and S. Chakrabarti, "A robust data-driven approach for adaptive dynamic load modeling," *IEEE Transactions on Power Systems*, Early Access, DOI: [10.1109/TPWRS.2021.3137328](https://doi.org/10.1109/TPWRS.2021.3137328).
38. B. R. Kumar, A. Mohapatra, and S. Chakrabarti, "A novel sub-cycle-based method for estimation of decaying DC component and fundamental phasor," *IEEE Transactions on Instrumentation & Measurement*, vol. 71, art. 9584859, 2022. DOI: [10.1109/TIM.2021.3126143](https://doi.org/10.1109/TIM.2021.3126143).
39. S. Som, R. Dutta, A. Gholami, A. K. Srivastava, S. Chakrabarti, and S. R. Sahoo, "DPMU-based multiple event detection in a microgrid considering measurement anomalies," *Applied Energy*, vol. 308, no. 15, p. 118269, Feb. 2022 DOI: [10.1016/j.apenergy.2021.118269](https://doi.org/10.1016/j.apenergy.2021.118269).
40. C. L. Dewangan, S. Chakrabarti, S. N. Singh, and M. Sharma, "A fair incentive scheme for participation of smart inverters in voltage control," *IEEE Transactions on Industrial Informatics*, vol. 18, no. 1, pp. 656–665, Jan. 2022 DOI: [10.1109/TII.2021.3065658](https://doi.org/10.1109/TII.2021.3065658).
41. S. Som, S. De, S. Chakrabarti, S. R. Sahoo, and A. Ghosh, "A robust controller for battery energy storage system of an islanded AC microgrid," *IEEE Transactions on Industrial Informatics*, vol. 18, no. 1, pp. 207–218, Jan. 2022 DOI: [10.1109/TII.2021.3065659](https://doi.org/10.1109/TII.2021.3065659).
42. R. Dutta, S. Chakrabarti, and A. Sharma, "Robust topology detection of distribution network," *IEEE Transactions on Power Systems*, vol. 36, no. 6, pp. 5967–5970, Nov. 2021. DOI: [10.1109/TPWRS.2021.3092428](https://doi.org/10.1109/TPWRS.2021.3092428).
43. R. Dutta, S. J. Geetha, S. Chakrabarti, and A. Sharma, "An L-1 regularized forecasting-aided state estimator for active distribution networks," *IEEE Transactions on Smart Grid*, vol. 13, no. 3, pp. 2215–2226, May 2022. DOI: [10.1109/TSG.2021.3115726](https://doi.org/10.1109/TSG.2021.3115726).
44. B. Pawar, E. I. Batzelis, S. Chakrabarti, and B. C. Pal, "Grid-forming control for solar PV systems with power reserves," *IEEE Transactions on Sustainable Energy*, vol. 12, no. 4, pp. 1947–1959, Oct. 2021 DOI: [10.1109/TSTE.2021.3074066](https://doi.org/10.1109/TSTE.2021.3074066).
45. Z. Jin, J. Zhao, L. Ding, S. Chakrabarti, E. Gryazina, and V. Terzija, "Power system anomaly detection using innovation reduction properties of iterated extended Kalman filter," *International Journal of Electrical Power & Energy Systems*, vol. 136, art. 107613, Mar. 2022. DOI: [10.1016/j.ijepes.2021.107613](https://doi.org/10.1016/j.ijepes.2021.107613).
46. S. J. Geetha, A. Meghwani, S. Chakrabarti, K. Rajawat, and V. Terzija, "Spoofing attack on synchrophasor GPS clock: impact and detection in power system state estimation," *International Journal of Electrical Power & Energy Systems*, vol. 134, art. 107396, Jan. 2022. DOI: [10.1016/j.ijepes.2021.107396](https://doi.org/10.1016/j.ijepes.2021.107396).
47. A. Mitra, A. Mohapatra, S. Chakrabarti, and S. Sarkar, "Online measurement based joint estimation of synchronous generator and exciter parameters," *IEEE Transactions on Energy Conversion*, vol. 36, no. 2, pp. 820–830, June 2021 DOI: [10.1109/TEC.2020.3021200](https://doi.org/10.1109/TEC.2020.3021200).
48. B. R. Kumar, A. Mohapatra, S. Chakrabarti, and A. Kumar, "Phase angle-based fault detection and classification for protection of transmission lines," *International Journal of Electrical Power & Energy Systems*, vol. 133, art. 107258, Dec. 2021. DOI: [10.1016/j.ijepes.2021.107258](https://doi.org/10.1016/j.ijepes.2021.107258).
49. S. M. Ashraf and S. Chakrabarti, "A single machine equivalent-based approach for online tracking of power system transient stability," *IEEE Transactions on Power Systems*, vol. 36, no. 3, pp. 1688–1696, May 2021. DOI: [10.1109/TPWRS.2020.3036399](https://doi.org/10.1109/TPWRS.2020.3036399).
50. B. Rathore, S. Chakrabarti, and L. Srivastava, "A self-regulated virtual impedance control of VSG in a microgrid," *Electric Power Systems Research*, vol. 197, art. 107289, Aug. 2021. DOI: [10.1016/j.epsr.2021.107289](https://doi.org/10.1016/j.epsr.2021.107289).
51. J. G. Sreenath, S. Chakrabarti, and K. Rajawat, "Asynchronous hierarchical forecasting-aided state estimator with sub-area data validation for power systems," *IEEE Sensors Journal*, vol. 21, no. 2, pp. 2124–2133, Jan. 2021 DOI: [10.1109/JSEN.2020.3016000](https://doi.org/10.1109/JSEN.2020.3016000).
52. S. K. Mallik, S. Chakrabarti, and S. N. Singh, "Analysis of ill-conditioning of hybrid state estimators in the presence of PMU measurements," *IET Energy Conversion and Economics*,

- vol. 2, no. 1, pp. 35–44, 2021. DOI: [10.1049/enc2.12026](https://doi.org/10.1049/enc2.12026).
53. R. Dutta, S. Chakrabarti, and A. Sharma, “Topology tracking for active distribution networks,” *IEEE Transactions on Power Systems*, vol. 36, no. 4, pp. 2855–2865, Jul. 2021. DOI: [10.1109/TPWRS.2020.3048680](https://doi.org/10.1109/TPWRS.2020.3048680).
 54. Z. Jin, S. Chakrabarti, J. Yu, L. Ding, and V. Terzija, “An improved algorithm for CKF based forecasting aided state estimation and anomaly detection,” *International Transactions on Electrical Energy Systems*, vol. 31, art. e12714, 2021. DOI: [10.1002/2050-7038.12714](https://doi.org/10.1002/2050-7038.12714).
 55. P. W. Pande, S. Chakrabarti, S. C. Srivastava, and S. Sarkar, “A clustering-based approach for estimation of low frequency oscillations in power systems,” *IEEE Transactions on Power Systems*, vol. 35, no. 6, pp. 4666–4677, Nov. 2020 DOI: [10.1109/TPWRS.2020.2993124](https://doi.org/10.1109/TPWRS.2020.2993124).
 56. B. Rathore, S. Chakrabarti, and L. Srivastava, “ARI and ARID control of virtual synchronous generator for frequency response improvement,” *IET Renewable Power Generation*, vol. 15, no. 3, pp. 664–675, 2021. DOI: [10.1049/rpg2.12054](https://doi.org/10.1049/rpg2.12054).
 57. R. Dutta, V. S. Patel, S. Chakrabarti, A. Sharma, R. K. Das, and S. Mondal, “Parameter estimation of distribution lines using SCADA measurements,” *IEEE Transactions on Instrumentation & Measurement*, vol. 70, pp. 1–11, 2021. DOI: [10.1109/TIM.2020.3026116](https://doi.org/10.1109/TIM.2020.3026116).
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 59. C. Santhosh Kumar, K. Rajawat, S. Chakrabarti, and B. C. Pal, “Robust distribution system state estimation with hybrid measurements,” *IET Generation, Transmission & Distribution*, vol. 14, no. 16, pp. 3250–3259, 2020. DOI: [10.1049/iet-gtd.2020.0260](https://doi.org/10.1049/iet-gtd.2020.0260).
 60. Z. Jin, J. Zhao, S. Chakrabarti, L. Ding, and V. Terzija, “A hybrid robust forecasting-aided state estimator considering bimodal Gaussian mixture measurement errors,” *International Journal of Electrical Power and Energy Systems*, vol. 120, Sep. 2020 DOI: [10.1016/j.ijepes.2020.105974](https://doi.org/10.1016/j.ijepes.2020.105974).
 61. C. L. Dewangan, S. N. Singh, and S. Chakrabarti, “Combining forecasts of day-ahead solar power,” *Energy*, vol. 202, art. 117743, Jul. 2020. DOI: [10.1016/j.energy.2020.117743](https://doi.org/10.1016/j.energy.2020.117743).
 62. M. N. Alam, R. Gokaraju, and S. Chakrabarti, “Protection coordination for networked microgrids using single and dual setting overcurrent relays,” *IET Generation, Transmission & Distribution*, vol. 14, no. 14, pp. 2818–2828, 2020. DOI: [10.1049/iet-gtd.2019.0557](https://doi.org/10.1049/iet-gtd.2019.0557).
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5.4. Patents

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Sponsored and Consultancy Projects

6.1. Ongoing / Accepted Projects

1. **Sponsored project:** Grid Readiness for EV: Enablers and Technological Developments (GREET). Funding agency: Anusandhan National Research Foundation (ANRF), Government of India. Duration: June 2025 – May 2027. Role: PI.
2. **Sponsored project:** Centre for Rechargeable Energy Storage for Augmenting Transportation and Electrification. Funding agency: SERB, India. Duration: March 2022 – March 2027. Role: Co-PI. Funding: INR 8,45,85,151.

6.2. Completed Projects

1. **Sponsored:** Operation, protection, and control of power grids with large penetration of renewables. Funding agency: Natural Sciences and Engineering Research Council of Canada (NSERC Discovery Grant). Duration: April 2024 – May 2029. Role: PI. Funding: CAD 2,30,000. (*Project approved but not undertaken following relocation from Canada.*)
2. **Sponsored:** Advanced Distribution System Monitoring. Funding agency: New Brunswick Innovation Foundation, Canada. Duration: July 2023 – July 2025. Role: PI. Funding: CAD 55,000.
3. **Consultancy:** Development of digital signal processing algorithms for numerical protection relay. Agency: Synergy Systems & Solutions. Role: PI. Duration: July 2022 – June 2023.
4. **Consultancy:** Technical verification of relay settings for 750 V DC traction system and 220 kV and 33 kV AC systems in Kanpur Metro Project. Agency: Uttar Pradesh Metro Rail Corporation Ltd. Role: Co-PI. Duration: Nov. 2021 – July 2022.
5. **Sponsored:** Interconnected Microgrids for Rural Electrification. Agency: Ministry of Electronics and Information Technology (MEITY), India. Duration: Dec. 2020 – Dec. 2022. Role: Co-PI.
6. **Consultancy:** Technical service to Adani Green Energy Ltd. for solar IDT installation. Agency: Adani Green Energy Ltd. Role: PI. Duration: Nov. 2020 – June 2021.
7. **Consultancy:** Technical inspection of UPPTCL HV line. Agency: Uttar Pradesh Power Transmission Corporation Ltd. Role: PI. Duration: Sept. 2020 – March 2021.
8. **Sponsored:** Study on Cyber-physical Approach for Electric Power Grid. Agency: Department of Science and Technology (DST), India. Role: PI (IIT Kanpur). Duration: March 2020 – March 2023.
9. **Workshop funding:** Training Program on Smart Grid Components and Technologies. Agency: National Smart Grid Mission, Ministry of Power, Government of India. Role: PI. Duration: Feb. 2020 – Jan. 2022 (two workshops per year).
10. **Sponsored:** Stability analysis, protection, and coordinated control of networked microgrids. Agency: DST, India (Mission Innovation). Role: PI (IIT Kanpur). Duration: July 2019 – July 2021.
11. **Consultancy:** Development of PMU-based IT-OT applications for line fault location. Agency: Calcutta Electric Supply Corporation (CESC) Ltd., Kolkata. Role: PI. Duration: July 2019 – July 2020.
12. **Consultancy:** Technical support in implementation of SCADA/ADMS/GIS in the area of

- KESCO, Kanpur. Agency: Kanpur Electricity Supply Company (KESCO), India. Role: PI. Duration: May 2019 – May 2022.
13. **Consultancy:** Technical inspection of KESCO underground cable network. Agency: KESCO Ltd., Kanpur. Role: PI. Duration: Oct. 2018 – Jan. 2019.
 14. **Consultancy:** Investigating the failure of towers on 400 kV Parichha-Orai-Mainpuri line of UPPTCL. Agency: UPPTCL. Role: PI.
 15. **Workshop funding:** Training Program on Smart Grid for Utility Professionals. Agency: National Smart Grid Mission, Ministry of Power. Duration: Jan. 17–19, 2018.
 16. **Sponsored:** UI-ASSIST (US-India collABorative for Smart diStribution System wIth STorage). Agency: IUSSTF, DST India, and DOE USA. Duration: Sep. 2017 – Aug. 2022. Role: Co-PI.
 17. **Sponsored:** UK India Clean Energy Research Institute. Agency: DST, India. Duration: Apr. 2017 – Apr. 2021. Role: PI (Task leader from Indian side for Stability Issues).
 18. **Consultancy:** Use of synchrophasor data for tuning power system stabilizer and online estimation of generator parameters. Agency: National Thermal Power Corporation (NTPC) Ltd., India. Role: PI. Duration: Nov. 2016 – Nov. 2018.
 19. **Consultancy:** Study to minimize over-voltage and inrush current of transformers during connecting of grid-tied solar PV plant. Agency: NTPC Ltd., India. Role: Co-PI.
 20. **Sponsored:** Development of R&D platform for smart city projects in the Indian context. Agency: Ministry of Power (MoP), India, and IIT Kanpur. Duration: Dec. 2014 – June 2022. Role: PI.
 21. **Sponsored:** Advanced communication and control for the prevention of blackouts. Agency: DST, India and EPSRC, UK. Duration: Nov. 2014 – Sep. 2018. Role: PI (IIT Kanpur side, Indian consortium).
 22. **Sponsored:** Stabilize Energy. Agency: DST and European Union (FP7 INDIGO). Duration: 2014–2017. Role: PI (IIT Kanpur side).
 23. **Sponsored:** Use of synchrophasors in power system load modelling and state estimation. Agency: Central Power Research Institute (RSOP). Duration: 2014–2016. Role: PI.
 24. **Workshop funding:** Smart Transmission Grid using Synchrophasor Technology. Role: PI. Duration: Dec. 10–14, 2013.
 25. **Workshop funding:** Exploring beyond the frontiers to build a smarter grid. Agency: DST, India, and the Royal Society, London. Duration: Mar. 20–22, 2013. Role: PI.
 26. **Consultancy:** Clarification on national building code of India. Agency: Mukesh & Associates, Tamil Nadu. Role: PI. Duration: Feb.–Mar. 2013.
 27. **Consultancy:** Studies on voltage stability and small signal oscillation monitoring of power systems. Agency: GE India Technology Center Pvt. Ltd, Bangalore. Duration: Nov. 2012 – Aug. 2013. Role: PI.
 28. **Consultancy:** Feasibility study to run the state tubewells in UP using SCADA. Agency: Irrigation Department, Uttar Pradesh. Role: PI. Duration: June–Aug. 2012.
 29. **Sponsored:** Synchronized measurement technology for voltage stability monitoring and state estimation of power systems. Agency: DST, India. Duration: Oct. 2010 – Oct. 2013. Role: PI.
 30. **Sponsored:** Synchronized measurement technology for power systems: selected applications. Agency: IIT Kanpur, India. Duration: Feb. 2010 – Oct. 2011. Role: PI.
 31. **Sponsored:** Application of synchrophasor technology in power systems. Agency: Queensland University of Technology, Australia. Duration: Feb. 2009 – Feb. 2010. Role: PI.
 32. **Sponsored:** Detection and location of fault on a transmission line using synchronized measurements. Agency: Queensland University of Technology, Australia. Duration: Feb. 2009 – Feb. 2010. Role: PI.

Invited Talks, Tutorials, and Short Courses

1. Keynote lecture: “*Big data sources in power systems*,” IEEE PES International Conference 2026, Hong Kong, Jan. 2026.
2. Keynote lecture: “*AI applications in power system monitoring*,” 7th Int. Conf. Energy, Power

and Environment (ICEPE 2025), NIT Meghalaya, India, May 2025.

3. Tutorial: *“Real-time monitoring using data analytics,”* South Asia Region 100 Women Engineer Leader’s (SAR100) Program, Asian Institute of Technology, Bangkok (online), Jan. 2025.
4. Keynote address: *“AI applications in power system monitoring,”* Conf. on Artificial Intelligence and its Applications in Power Systems, West Bengal State Electricity Board (WBSEB), India, Feb. 2025.
5. Invited online talk: *“Big data sources in power systems,”* Toronto Metropolitan University, Nov. 2024.
6. Tutorial: *“Stability challenges in inverter-penetrated grids,”* Workshop on Understanding the Challenges of Inverter-Based Resources Through Hardware-in-the-Loop Simulation, Oct. 2024.
7. Keynote lecture: *“Recent trends in operation, control, and protection of microgrids,”* 2024 IEEE 12th Int. Conf. Smart Energy Grid Engineering (SEGE 2024), Ontario, Canada, Aug. 20, 2024.
8. Tutorial: *“Sources of big data in power systems,”* IEEE PES Subcommittee on Big Data & Analytics for Power Systems (online), Mar. 14, 2024.
9. Invited Rosseti International Lecture: *“Microgrids: emerging trends, challenges, and solutions,”* Skoltech, Moscow, Dec. 6, 2022.
10. Invited online lecture: *“Smart distribution system: a case study,”* Skoltech, Moscow, as part of AMPaC Megagrant Project Assembly, Dec. 23, 2021.
11. Keynote talk: *“A field pilot for research and development on smart city,”* 3rd Int. Symposium on Smart Grid: Methods, Tools, and Technologies, Shandong University, Jinan, China, Sept. 18, 2019.
12. Invited IEEE lecture: *“Synchronphasor-assisted power system state estimation,”* BC Hydro, Vancouver, Canada, May 29, 2019.
13. Invited IEEE lecture: *“A field pilot for research and development on smart distribution system,”* University of Saskatchewan, Saskatoon, Canada, May 27, 2019.
14. Invited IEEE lecture: *“Developing the electrical infrastructure of a smart city prototype: a case study,”* Memorial University of Newfoundland, St. John’s, Canada, May 22, 2019.
15. IEEE PES/IAS lecture: *“Development of a smart distribution system: a case study,”* Motilal Nehru National Institute of Technology Allahabad, India, Mar. 28, 2019.
16. Invited talk: *“Smart city pilot projects and smart grid research in India,”* Norwegian Embassy, Delhi, India, Jan. 2019.
17. Keynote talk: *“Advanced monitoring of modern transmission and distribution systems,”* Manipal University, Jaipur, India, Dec. 2018.
18. Keynote talk: *“Advanced control centre applications using PMU measurements,”* National Power Systems Conf. (NPSC 2018), Trichy, India, Dec. 2018.
19. Invited talk: *“Development of a smart microgrid R&D platform in the Indian context,”* Symposium on Microgrids, University Politehnica of Bucharest, Romania, Sept. 2018.
20. Invited talk: *“Development of smart city prototype in the Indian context,”* 5th Int. Conf. & Exhibition on Energy Storage & Microgrids in India, New Delhi, Jan. 12, 2018.
21. Keynote lecture: *“Power system load modelling,”* 4th Int. Conf. Power, Control and Embedded Systems (ICPCES-2017), Motilal Nehru NIT Allahabad, Mar. 10, 2017.
22. Tutorial: *“Smart grids: renewable integration and microgrids,”* Veermata Jijabai Technological Institute, Mumbai, Feb. 28 – Mar. 1, 2016.
23. Invited talk: *“Wide area measurement based smart monitoring of power transmission systems,”* Foundation Day, NIT Patna, India, Jan. 27, 2017.
24. Tutorial: *“State estimation in power systems,”* National Power Systems Conf. (NPSC 2016), Bhubaneswar, Dec. 19, 2016.
25. Invited talk: *“Measurement and sensing for modern power systems,”* United College of Engineering and Research, Allahabad, Oct. 22, 2016.
26. Invited talk: *“Smart grid: technological challenges and potential solutions”* and *“Smart grid monitoring,”* Veermata Jijabai Technological Institute, Mumbai, May 18, 2016.
27. Co-organized workshop: *“Smart Microgrids,”* IIT Kanpur, Apr. 8–10, 2016.

28. Invited talk: *“Introduction to smart grid,”* NIT Durgapur, India, Dec. 21, 2015.
29. Short course: *“Synchrophasor applications in power system state estimation and stability monitoring,”* IIITDM Jabalpur, India, Oct.–Nov. 2015.
30. Tutorials: *“Power system stability”* and *“Synchronized measurement technology,”* United College of Engineering and Research, Allahabad, Jul. 14, 2015.
31. IEEE seminar: *“Smart power grid: implementation and challenges,”* IIT Mandi, Himachal Pradesh, Apr. 10, 2015.
32. Invited talk: *“Next generation of state estimators utilizing synchrophasor measurements,”* NIT Surathkal, Karnataka, Mar. 2, 2015.
33. Invited talk: *“Smart grid: concepts and challenges,”* Rajasthan Technical University, Kota, Feb. 13, 2015.
34. Invited talk: *“Smart grid: concepts and deployment,”* 7th Capacity Building Programme for Officers of Electricity Regulatory Commissions, IIT Kanpur, Jan. 28–30, 2015.
35. Invited talk: *“Concepts of smart grids,”* DIGITAL INDIA: eMpowering e-Governance (DigiGov-2014), Computer Society of India, Lucknow, Dec. 6–7, 2014.
36. Invited talk: *“Next generation hybrid state estimators for smart grids,”* Indo-UK Workshop, Coventry University, UK, Mar. 19–20, 2013.
37. Tutorial: *“Enhanced monitoring of power systems using phasor technology,”* STTP on Operation and Control of Modern Power Systems, Malaviya NIT Jaipur, Mar. 7–11, 2013.
38. Lecture: *“Wide area measurement systems: PMU placement and analytical applications,”* Workshop on Smart Grid, CIGRE India and CBIP, Bangalore, Oct. 11–12, 2012.
39. Tutorial: *“Phasor measurement technology and its applications to power systems,”* AICTE Staff Development Program, VNR Vignana Jyoti Inst., Hyderabad, Jun. 18–30, 2012.
40. Tutorial: *“Synchronized measurement technology for electric power systems,”* Symposium on Developments in Instrumentation & Control Engineering, Aligarh Muslim University, Mar. 17–18, 2012.
41. Tutorial: *“Mathematics for circuit analysis,”* Workshop on Mathematics for Electrical Sciences, PSG College of Technology, Coimbatore, Mar. 2–3, 2012.
42. Tutorials: *“Optimal power flow”* and *“State estimation in emerging power systems,”* Short-term course on Operation and Management of Emerging Power Systems, IIT Kanpur, Nov. 2011.
43. Invited lecture: *“Synchronized measurement based wide area monitoring of electric power systems,”* ICT Empowered Grid Conf., Trondheim, Norway, Oct. 5, 2011.
44. Guest lecture: *“Synchrophasor assisted enhanced monitoring of electric power systems,”* Norwegian University of Science and Technology (NTNU), Trondheim, Oct. 4, 2011.
45. Tutorial: *“Wide area monitoring and control,”* 16th National Power Systems Conf., Hyderabad, Dec. 2010.
46. Invited talk: *“Power system state estimation by synchronized measurement technology,”* Indian Institute of Science, Bangalore, Dec. 2007.
47. Talk: *“Phasor measurement units for power system state estimation,”* University of Cyprus, Nicosia, Oct. 2007.
48. Talk: *“Application of artificial neural networks for online voltage stability monitoring of an electric power system,”* University of Cyprus, Nicosia, Jan. 2007.

Professional Activities

- Lead Coordinator from IIT Kanpur for the Hyundai Center of Excellence (CoE), India, since January 2026.
- Electrical Engineering domain coordinator from IIT Kanpur and mentor for the Centre for Engineering Education Excellence (CEEE), a joint program of the Indian National Academy of Engineering (INAE) and Infosys Foundation for improving engineering education in India.
- Convenor, Fellow Selection Committee 2025, INAE India (Electrical Engineering domain).
- Principal Member, Power System Control and Associated Communications Sectional Committee

(LITD 10), Bureau of Indian Standards (BIS), representing IIT Kanpur.

- Associate Editor, *IEEE Transactions on Smart Grid*, from December 2022.
- Associate Editor, *International Journal of Electrical Power & Energy Systems*, from November 2020.
- Editor, *IEEE Power Engineering Letters*, from January 2020.
- Editor, *IEEE Transactions on Power Systems*, January 2020 – January 2024.
- Associate Editor, *IET Generation, Transmission & Distribution*, April 2019 – November 2022.
- Treasurer, IEEE Uttar Pradesh Section, India, 2014.
- Co-organized the “National Workshop on Wide Area Monitoring and Control of Power Systems using Synchrophasor Technology,” IIT Kanpur, April 13–14, 2012.
- Chairperson, IEEE Power & Energy Society (PES) and Industry Applications Society (IAS), Uttar Pradesh Section, India, 2010 and 2011.
- Senior Member, IEEE Power & Energy Society (PES).

Administrative Activities

- Director, Emera and NB Power Research Centre for Smart Grid Technologies, Department of Electrical and Computer Engineering, University of New Brunswick, July 2023 – April 2024.
- Professor-in-Charge, Electrical Works, IIT Kanpur, 2016–2019.
- Hostel Warden, Hall 7, IIT Kanpur, April 2013 – March 2016.

Awards Won by Students

- PhD student Mr. Bandopant Pawar won Grid India Power System Award 2024 for his PhD thesis on *Stability Analysis and Enhanced Control for Inverter-Integrated Power Systems*.
- PhD student Mr. B. Ravi Kumar won Grid India Power System Award 2024 for his PhD thesis on *Phasor Domain Algorithms for High-Speed Protection of Electric Power Networks*.
- Postdoctoral Fellow Dr. Soumyajit Ghosh won AWSAR Award-2022 from DST, Government of India, under Best Stories in Post Doctoral Fellow (PDF) category.
- PhD student Ms. S. Som won the Grid India Power System Award (PPSA 2023) for her PhD thesis on *Control and Stability Enhancement of Islanded Microgrids with Battery Energy Storage Systems*.
- PhD student Mr. A. Mitra won Grid India Power System Award (PPSA 2023) for his PhD thesis on *Data-driven Approaches for Parameter Estimation, Modeling, and Monitoring of Power System Components*.
- MS student Mr. Nitesh Singh won Prof. L.P. Singh Power System Award for excellent research, 2021–22.
- PhD student Mr. P. W. Pande won Grid India Power System Award (PPSA 2022) for his PhD thesis on *Estimation of Low Frequency Oscillation Modes in Power Systems and Online Tuning of the PSS using Synchrophasor Measurements*.
- PhD student Mr. R. Dutta won Grid India Power System Award (PPSA 2021) for his PhD thesis on *Distribution System State and Parameter Estimation*.
- MS student Mr. Santhos Kumar C won Grid India Power System Award (PPSA 2020) for his MS thesis on *Robust Three-Phase Distribution System State Estimation using Hybrid Measurements*.
- PhD student Mrs. A. Dubey won Grid India Power System Award (PPSA 2020) for her PhD thesis on *Synchrophasor-Assisted Advanced State Estimators for Power Systems*.
- MS student Mr. Santhos Kumar C won Best Master's Thesis Award 2019, IEEE PES/IAS Joint Chapter, UP Section.
- MS student Mr. Santhos Kumar C won Prof. L.P. Singh Power System Award, 2018–19.
- MS student Mr. Santhos Kumar C won Dr. Shankar Dayal Sharma Medal for best all-round PG student.
- MS student Mr. Santhos Kumar C won IIT Kanpur Excellence Award for leadership in students'

affairs.

- Mentored the graduate student team that won the software edition of Smart India Hackathon (SIH) 2019, Kochi, for a solution to the problem “To locate the fault in distribution network for ad-hoc maintenance,” posed by ABB GIS Pvt. Ltd.
- PhD student J. G. Sreenath won Grid India Power System Award (PPSA 2018) for his PhD thesis on *Multi-Area State Estimation*.
- MS student Mrs. S. Sahoo won Grid India Power System Award (PPSA 2018) and Eaton Pratibha Excellence Award 2017–18 for work on demand response management.
- PhD student Mrs. A. Meghwani won Grid India Power System Award (PPSA 2017) for her PhD thesis *DC Microgrid Protection: Challenges and Solutions*.
- MTech student Ms. N. Negi won Grid India Power System Award (PPSA 2017) for her thesis *Decentralized Adaptive Primary and Distributed Secondary Control for Radial AC Microgrid*.
- PhD student Mrs. A. Meghwani won Dr. Ramamoorthy Best Paper Award in Power Electronics and Drives at NPSC 2016 for the paper “A Fast Scheme for Fault Detection in DC Microgrid Based on Voltage Prediction.”
- PhD student Mr. V. Vignesh won Grid India Power System Award (PPSA 2016) for his PhD thesis *Improved Load Modelling and Its Impact on Stability of Power Systems Having Large Penetration of Wind Generation*.
- PhD student Mr. S. K. Mallik won Grid India Power System Award (PPSA 2016) for his PhD thesis *Hybrid State Estimation and Enhanced Monitoring of Power Systems Using Synchrophasors*.
- MTech student Mr. N. Sharma won Grid India Power System Award (PPSA 2016) for his MTech thesis *Observability Analysis and Topology Error Processing of Power Systems in the Presence of Hybrid Measurements*.
- PhD student Mr. Ankush Sharma won Grid India Power System Award (PPSA 2015) for his PhD thesis *Multi-Area Power System State Estimation Utilizing Synchrophasor Measurements, Multi-Agents and Common Information Model*.
- PhD student Ch. V. V. S. Bhaskara Reddy won Grid India Power System Award (PPSA 2015) for his PhD thesis *Early Detection and Control of Voltage Stability and Fast Assessment of ATC Using Synchrophasor Measurements*.
- MTech student Mr. Mahesh Vardikar won Grid India Power System Award (PPSA 2014). Thesis: *Power System State Estimation with External Network Equivalents Considering Measurement Transformation*.
- MTech student Mr. Dongare Kapil Subhash won Grid India Power System Award (PPSA 2013). Thesis: *Power System State Estimation Considering Real-Time Equivalents of the External Networks*.
- MTech student Mr. Sivanagaraju Gangavarapu won Grid India Power System Award (PPSA 2013). Thesis: *Current Differential Protection of Transmission Line Considering Parameter Uncertainties*. Co-supervisor: Prof. S.C. Srivastava.

Researchers / Students Advised

11.1. Postdoctoral Fellows

Current

1. Dr. M. Pandit, PhD from IIT Ropar. Working since June 2026.
2. Dr. A. Bharati, PhD from National Institute of Technology Rourkela. Working since October 2025.
3. Dr. T. Alam, PhD from IIT Roorkee. Working since September 2025.
4. Dr. R. Rastogi, PhD from National Institute of Technology Allahabad. Working since September 2025.

Former

1. Dr. S. Ghosh, PhD from Jadavpur University, Kolkata. January 2022 – present.
2. Dr. Y. Bansal, PhD from IIT Ropar. November 2021 – January 2023.
3. Dr. V. K. Gaur, PhD from IIT Roorkee. September 2021 – October 2023.
4. Dr. O. Yadav, National Postdoctoral Fellow, PhD from NIT Allahabad. 2020–2021.
5. Dr. J. G. Sreenath, PhD from IIT Kanpur. January 2020 – November 2021.
6. Dr. K. Swain, PhD from NIT Patna. October 2019 – November 2023.
7. Dr. A. Dubey, PhD from IIT Kanpur. 2019–2020.
8. Dr. M. N. Alam, PhD from IIT Roorkee. 2018–2020.
9. Dr. Suman M, PhD from NIT Trichy. January–June 2019.

11.2. PhD Students

Ongoing

1. S. Chatterjee, “Distribution state estimation.” Started 2020. Co-supervisor: Prof. A. Mohapatra.
2. A. Anand, “Distribution system protection.” Started 2020. Co-supervisor: Prof. A. Mohapatra.
3. N. K. Sharma, “Joint state estimation of transmission and distribution systems.” Started 2020. Co-supervisor: Prof. A. Sharma.
4. T. Ahmed, “Power system state estimation.” Started 2026.

Completed

1. J. K. Mahawar, “Enhancing the performance of doubly fed induction generator under grid disturbances.” Completed 2026. Co-supervisor: Prof. G. M. Vishwanath.
2. M. Sehrawat, “Improved dynamic state estimation methods for modern power systems.” Completed 2025. Co-supervisor: Prof. K. Rajawat.
3. V. Patel, “Intelligent data-driven techniques for distribution system state estimation and cyber-attack resilient fault analysis.” Completed 2025. Co-supervisors: Prof. A. Sharma (IIT Kanpur), Prof. Abdun Mahmood and Prof. Adnan Anwar (La Trobe University).
4. P. B. Bhimrao, “Stability analysis and enhanced control for inverter-integrated power systems.” Completed 2024.
5. B. R. Kumar, “Phasor domain algorithms for high-speed protection of electric power networks.” Completed 2023. Co-supervisor: Prof. A. Mohapatra.
6. S. Som, “Control and stability enhancement of islanded microgrids with battery energy storage systems.” Completed 2023. Co-supervisor: Prof. S. R. Sahoo.
7. A. Mitra, “Data-driven approaches for parameter estimation, modeling, and monitoring of power system components.” Completed 2023. Co-supervisor: Prof. A. Mohapatra.
8. B. Rathore, “Stability improvement of microgrids using virtual synchronous generator control.” Completed 2022.
9. C. L. Dewangan, “Solar power forecasting and incentive schemes for voltage control and residential demand response.” Completed May 2022. Co-supervisor: Prof. S. N. Singh.
10. R. Dutta, “State, topology, and parameter estimation of active distribution networks.” Completed March 2022. Co-supervisor: Prof. A. Sharma.
11. S. M. Ashraf, “Synchrophasor-assisted voltage stability monitoring and control and transient stability assessment of power systems.” Completed April 2021.
12. P. W. Pande, “Estimation of low frequency oscillation modes in power systems and online tuning of the PSS using synchrophasor measurements.” Completed 2021. Co-supervisor: Prof. S. C. Srivastava.
13. P. Gangwar, “Multi-objective distribution network reconfiguration and optimal allocation of renewable energy sources.” Completed 2020. Co-supervisor: Prof. S. N. Singh.
14. J. G. Sreenath, “Distributed forecasting-aided power system state estimation in the presence of bad data, time-skewed measurements, and cyber-attacks.” Completed 2019. Co-supervisor: Prof. K. Rajawat.
15. A. Dubey, “Synchrophasor-assisted advanced state estimators for power systems.” Completed

2019. Co-supervisor: Prof. A. Sharma.

16. A. Meghwani, "Development of efficient fault detection and location techniques for DC microgrid protection." Completed 2018. Co-supervisor: Prof. S. C. Srivastava.
17. V. Vignesh, "Improved load modelling and its impact on stability of power systems having large penetration of wind generation." Completed 2016. Co-supervisor: Prof. S. C. Srivastava.
18. S. K. Mallik, "Synchronized measurement technology for state estimation and enhanced power system visualization." Completed 2015. Co-supervisor: Prof. S. N. Singh.
19. C. V. V. S. B. Reddy, "Voltage stability monitoring and control using synchronized measurement technology." Completed 2014. Co-supervisor: Prof. S. C. Srivastava.
20. A. Sharma, "Multilevel distributed power system state estimator for smart grid applications." Completed 2014. Co-supervisor: Prof. S. C. Srivastava.

11.3. MTech / MS Students (Completed)

1. V. Kumar, "Distance protection for transmission line connecting converter-interfaced PV system." 2023. Co-supervisor: Prof. A. Sharma.
2. V. Kumar, "Voltage profile improvement and power loss minimization of distribution systems using distributed generation." 2023. Co-supervisor: Prof. S. R. Sahoo.
3. A. Kishore, "Frequency support from doubly fed induction machine based wind turbine." 2020.
4. A. Thakur, "Analysis of hybrid energy storage systems integrated with DC/AC distribution system." 2020. Co-supervisor: Prof. A. Sharma.
5. H. Mishra, "Demand side management." 2020. Co-supervisor: Prof. N. Verma.
6. R. K. Yadav, "Droop characteristics based secondary controller for islanded DC microgrid with improved voltage regulation, load sharing, and line loss." 2020. Co-supervisor: Prof. S. R. Sahoo.
7. B. P. Singh, "Load forecasting." 2020. Co-supervisor: Prof. N. Verma.
8. A. Kumar, "Robust design and coordinated tuning of power system stabilizers." 2018. [TISCO, India]
9. A. Khan, "Parameter and topology estimation for electrical power distribution system." 2018. Co-supervisor: Prof. A. Sharma. [GE, India]
10. Santhoshkumar, "Robust three-phase distribution system state estimation using hybrid measurements." 2019. Co-supervisor: Prof. K. Rajawat.
11. G. Garg, "Optimal day-ahead load scheduling in an islanded microgrid using demand-side management." 2018. Co-supervisor: Prof. A. Mohapatra.
12. S. Sahoo, "Optimal dispatch scheduling for residential battery storage with solar photovoltaics." 2018. Co-supervisor: Prof. A. Sharma.
13. S. Patre, "Parameter estimation of synchronous generator using online measurements from PMU." 2018.
14. B. Uppin, "Transfer function based approach for dynamic load modelling." 2018. Co-supervisor: Prof. A. Mohapatra.
15. Sathish Kumar, "Estimation and utilization of aggregate harmonic load model." 2018. Co-supervisor: Prof. S. Anand.
16. N. Negi, "Decentralized adaptive primary and distributed secondary control for radial AC microgrid." 2016. Co-supervisor: Prof. S. R. Sahoo.
17. G. A. Kumar, "Rotor angle estimation and coherency detection of synchronous generators." 2015.
18. M. Mukherjee, "Voltage stability monitoring using Lyapunov exponent." 2015. Co-supervisor: Prof. M. Banerjee.
19. K. M. Naik, "Optimal demand response for PV-integrated households." 2015.
20. N. Singh, "Observability analysis and topology error processing of power systems in the presence of hybrid measurements." 2015.
21. J. G. Sreenath, "An optimal smoother based dynamic state estimator for power systems considering PMU measurements." 2015.
22. P. Porwal, "Measurement based recursive methods for monitoring of power system oscillations." 2014. Co-supervisor: Prof. N. Verma.

23. M. Jha, "Estimation of the rotor angle of synchronous generator using PMU measurements." 2014.
24. R. P. Kundu, "A study on the assessment of voltage stability of electric power systems." 2013. [PowerGrid, India]
25. V. M. Pandurang, "Power system state estimation with external network equivalents considering measurement transformations." 2013. [PowerGrid, India]
26. S. Chitturi, "Performance study on the techniques for monitoring power system oscillations." 2013. Co-supervisor: Prof. S. N. Singh. [PowerGrid, India]
27. S. Gangavarapu, "Current differential protection of transmission line considering parameter uncertainties." 2012. Co-supervisor: Prof. S. C. Srivastava. [Ashok Leyland, Chennai]
28. C. P. K. Reddy, "Adaptive load shedding strategy for improving power system frequency and voltage stability." 2012. Co-supervisor: Prof. S. C. Srivastava. [Dar Group, Pune]
29. K. Dongare, "Power system state estimation considering real-time equivalents of the external networks." 2012. [Tata Motors, Pune]
30. B. Amanulla, "Reconfiguration of distribution systems considering reliability and power loss." 2011. Co-supervisor: Prof. S. N. Singh. [Ashok Leyland, Chennai]
31. V. S. K. Reddy, "Estimation of fault location on transmission lines using synchronous and asynchronous measurements." 2011. Co-supervisor: Prof. S. C. Srivastava. [Tata Motors, Pune]
32. A. Kumar, "ANN based state estimation for power systems, including bad data processing by particle swarm optimization." 2011. [Dar Group, Pune]
33. N. K. Meena, "Multi-criteria PMU placement for power system observability." 2011. [Faculty, Jagannath University, Jaipur]
34. G. Gourav, "Bang-bang modulated FACTS stabilizing controllers based on online identification of critical modes." 2011. Co-supervisor: Prof. S. C. Srivastava.

Courses Taught

1. **Power System Dynamics** – Graduate course, Electrical and Computer Engineering, University of New Brunswick, Fredericton, Canada.
2. **Smart Grid Monitoring and Visualization** – Graduate course, EE, IIT Kanpur.
3. **Synchrophasor Applications in Power Systems** – Short course, EE, IIT Mandi, Himachal Pradesh, April 2015.
4. **EE-330: Power Systems** – Undergraduate course, EE, IIT Kanpur.
5. **ESO-210: Introduction to Electrical Engineering** – Undergraduate course, IIT Kanpur.
6. **EE-631: Advanced Power System Stability** – Graduate course, EE, IIT Kanpur.
7. **EE-698Z: Synchrophasor Technology and its Applications** – Graduate course, EE, IIT Kanpur.
8. **EE-632: Economic Operation & Control of Power Systems** – Graduate course, EE, IIT Kanpur.
9. **ENB 452: Advanced Power System Analysis** – Final year undergraduate, EE, Queensland University of Technology, Brisbane, Australia.
10. **ENB 340: Power Systems and Machines** – Second year undergraduate, EE, Queensland University of Technology.
11. **Industrial Electronics** – Final year undergraduate, EE, Queensland University of Technology.
12. **Advanced Design and Professional Practice** – Final year undergraduate, EE, Queensland University of Technology.