

Publications

Papers Published in International Journals:

1. S. K. Mohanty, **P. K. Nayak**, P. Siano, and A. Swetapadma, "Intelligent protective relaying for the series compensated line with high penetration of wind energy sources," *International Journal of Electrical Power and Energy Systems*, 163 (2024) 110362.
2. S. Singh, and **P. K. Nayak**, "A protection scheme for the transmission line connecting large-scale centralized solar PV plant," accepted (September 2024) for publication in *Microsystem Technologies*.
3. S. Kumar, and **P. K. Nayak**, "An effective method for detection and location estimation of faults in large-scale solar PV arrays," *Solar Energy*, 277 (2024) 112727.
4. S. Biswas, B. K. Panigrahi, **P. K. Nayak**, G. Pradhan, and S. Padmanaban "A single-pole filter assisted improved protection scheme for the TCSC compensated transmission line connecting large-scale wind farms," *IEEE Journal of Emerging and Selected Topics in Industrial Electronics*, vol. 5, no. 2, pp. 346–358, April 2024.
5. S. K. Mohanty, **P. K. Nayak**, P. K. Bera, and H. H. Alhelou, "An enhanced protective relaying scheme for TCSC compensated line connecting DFIG-based wind farm," *IEEE Trans. Industrial Informatics*, vol. 20, no. 3, pp. 3425–3435, March 2024.
6. K. Sarwagya, **P. K. Nayak** and S. Ranjan "Adaptive coordination of directional overcurrent relays for meshed distribution networks with distributed generations using dragonfly algorithm," *Electrical Engineering*, (Springer), pp. 1-22, June 2023. <https://doi.org/10.1007/s00202-023-01905-4>
7. S. Biswas, **P. K. Nayak**, B. K. Panigrahi and G. Pradhan, "An intelligent fault detection and classification technique based on variational mode decomposition-CNN for transmission lines installed with UPFC and wind farm," *Electric Power System Research*, 223 (2023) 109526.
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9. S. K. Mohanty, A. Swetapadma, **P. K. Nayak**, and Om P. Malik, "Decision tree approach for fault detection in a TCSC compensated line during power swing," *International Journal of Electrical Power and Energy Systems*, 146 (2023) 108758.
10. B. Anudeep, **P. K. Nayak** and S. Biswas, "An Improved Protection Scheme for DFIG-Based Wind Farm Collector Lines," *Electric Power System Research*, 211 (2022) 108224.
11. B. Anudeep, and **P. K. Nayak**, "Differential power-based selective phase tripping scheme for modern-day fault-resilient microgrids," *Journal of Modern Power Systems and Clean Energy*, vol. 10, no. 2, pp. 459–470, March 2022.
12. S. Biswas, and **P. K. Nayak**, "A Fault Detection and Classification Scheme for Unified Power Flow Controller Compensated Transmission Lines Connecting Wind Farms," *IEEE Systems Journal*, vol. 15, no. 1, pp. 297–306, March 2021.
13. S. Biswas, **P. K. Nayak**, and G. Pradhan, "A Dual-Time Transform Assisted Intelligent Relaying Scheme for the STATCOM-Compensated Transmission Line Connecting Wind Farm," *IEEE Systems Journal*, vol. 16, no. 2, pp. 2160–2171, June 2022.

14. M. K. Senapati, C. Pradhan, **P. K. Nayak**, S. Padmanaban and T. Gjengedal, "Modified demagnetisation control strategy for low-voltage ride-through enhancement in DFIG-based wind systems," *IET, Renew. Power Gener.*, vol. 14, no. 17, pp. 3487–3499, 2020.
15. S. Biswas, and **P. K. Nayak**, "A New Approach for Protecting TCSC Compensated Transmission Lines Connected to DFIG-Based Wind Farm," *IEEE Trans. Industrial Informatics*, vol. 17, no. 8, pp. 5282–5291, August 2021.
16. C. Pradhan, M. K. Senapati, S. G. Malla, **P. K. Nayak**, and T. Gjengedal, "Coordinated Power Management and Control of Standalone PV-Hybrid System With Modified IWO-Based MPPT," *IEEE Systems Journal*, vol. 15, no. 3, pp. 2160–2171, June 2022.
17. K. Sarwagya, **P. K. Nayak** and S. Ranjan "Optimal coordination of directional overcurrent relays in complex distribution networks using sine cosine algorithm," *Electric Power System Research*, 187 (2020) 1–10. <https://doi.org/10.1016/j.epsr.2020.106435>
18. Ch. D. Prasad, M. Biswal and **P. K. Nayak**, "Wavelet operated single index based fault detection scheme for transmission line protection with swarm intelligent support," *Energy Systems* (December 2019), Springer. <https://doi.org/10.1007/s12667-019-00373-9>
19. B. Anudeep, and **P. K. Nayak**, "Transient energy-based combined fault detector and faulted phase selector for distribution networks with distributed generators," *International Transactions on Electrical Energy Systems*, 2019. <https://doi.org/10.1002/2050-7038.12288>
20. S. Biswas, and **P. K. Nayak**, "An unblocking assistance to distance relays protecting TCSC compensated transmission lines during power swing," *International Transactions on Electrical Energy Systems*, 2019;e12034.<https://doi.org/10.1002/2050-7038.12034>
21. B. Anudeep, and **P. K. Nayak**, "Sequence component-based improved passive islanding detection method for distribution system with distributed generations," *International Journal of Emerging Electric Power Systems*, vol. 20, issue 2, 2019. <https://doi.org/10.1515/ijeeps-2018-0292>
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26. Ch. D. Prasad and **P. K. Nayak**, "Performance assessment of swarm-assisted mean error estimation based fault detection technique for transmission line protection", *Computers and Electrical Engineering*, Elsevier, vol. 71, pp. 115–128, 2018.

27. S. Biswas, and **P. K. Nayak**, “State-of-the-art on the protection of FACTS compensated high-voltage transmission lines: a review,” *IET, High Voltage*, vol. 3, no. 1, pp. 21–30, 2018.
28. K. Sarwagya, S. De, and **P. K. Nayak**, “High-impedance fault detection in electrical power distribution systems using moving sum approach,” *IET, Sci. Meas. Techno.*, vol. 12, no. 1, pp. 1–8, 2018.
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33. U. Kumar and **P. K. Nayak**, “Investigations on the post-stroke voltages and currents in lightning protection schemes involving single tower,” *IEEE Trans. on Electromagnetic Compatibility*, Volume 47, No. 3, pp. 543 - 551, August 2005.

Book Chapters:

1. S. Biswas, **P.K. Nayak**, and B. K. Panigrahi, “Protection of High Voltage Transmission Lines Connected to Large-Scale Wind Farms: A Review”, *Power Quality: Infrastructures and Control*, Springer, Singapore, 2022. <https://doi.org/10.1007/978-981-19-7956-9>
2. B. Anudeep, P. K. Srivastava, S. Biswas, **P.K. Nayak**, “High Impedance Fault Detection in Microgrids Using Cross-Alienation Coefficient,” *Lecture Notes in Electrical Engineering*, vol 748, pp. 41-54, Springer, Singapore, 2021. https://doi.org/10.1007/978-981-16-0275-7_4
3. B. Anudeep, A. Verma, and **P. K. Nayak**, “Comparative Assessment of Passive Islanding Detection Techniques for Distributed Generations,” *Lect. Notes Electrical Eng.*, Vol. 556, Springer Nature Singapore Pte Ltd. 2019.
4. B. Mahato, S. Mittal, S. Majumdar, K.C. Jana and **P. K. Nayak**, “Multilevel Inverter with Optimal Reduction of Power Semi-conductor Switches”, *Renewable Energy and its Innovative Technologies*, Springer, Singapore, Vol. 1, pp. 31-50, 2019.
5. Ch. Durga Prasad and **P. K. Nayak**, “A Mixed Strategy Approach for Detecting Faults during Power Swing in Transmission Lines”, *Advances in Intelligent Systems and Computing*, Springer Nature Singapore Pte Ltd. 2018, ISBN 978-981-10-7867-5, pp. 597-608.
6. Prabhu. M. S. and **P. K. Nayak**: “A State-of-the-Art Review on Synchrophasor Applications to Power Network Protection”, *Advances in Power Systems and Energy Management*, Springer Nature Singapore Pte. Ltd. 2017, ISBN 978-981-10-4393-2, pp. 531-542.

Papers Published in National/International Conference Proceedings:

1. S. Singh, **P. K. Nayak**, S. Sarangi, and S. Biswas, "Improved protection scheme for high voltage transmission lines connecting large-scale solar PV plants," *22nd National Power Systems Conference (NPSC-2022)*, 16th – 18th Dec., 2022, IIT Delhi.
2. S. Biswas, **P. K. Nayak** and G. Pradhan, "A Transient-Extracting Transform Assisted Intelligent Fault Detection and Classification Approach for UPFC Installed Transmission Line," *2022 IEEE IAS Global Conference on Emerging Technologies (GlobConET)*, 20th – 22th May, 2022, Arad, Romania.
3. S. Biswas, **P. K. Nayak** and G. Pradhan, "A time varying filter-EMD based intelligent technique for protecting UPFC installed transmission line," *9th International Conference on Power Systems, 2021 (ICPS 2021)*, 16th – 18th Dec., 2021, IIT Kharagpur, India.
4. S. Biswas, **P. K. Nayak** and G. Pradhan, "An EMD-DT Assisted Intelligent Protection Scheme for TCSC Compensated Transmission Lines," *2020 IEEE Power & Energy Society General Meeting (PESGM)*, 2-6 Aug. 2020, Montreal, QC, Canada, <https://ieeexplore.ieee.org/document/9281397>, DOI: 10.1109/PESGM41954.2020.9281397
5. S. Biswas, V. Parhi, B. Anudeep and **P. K. Nayak**, "S-Transform Assisted CUSUM Based Protection Strategy for Transmission Lines Possessing UPFC," *Proceedings of the International Conference on Emerging Frontiers in Electrical and Electronic Technologies (ICEFEET)*, 10th-11th July-2020, NIT Patna, India, pp. 1-6. Available: <https://ieeexplore.ieee.org/abstract/document/9186956>
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8. M. K. Senapati, C. Pradhan and **P. K. Nayak**, "Comparative Assessment of Control Strategies Used in a Hybrid AC-DC Microgrid Consisting of Composite Energy Sources," *Proceedings of the International Conference on Advances in Electronics, Electrical & Computational intelligence (ICAEEC-2019)*, 31st May– 1st June, 2019, IIIT Allahabad, India, pp. 1-8. Available: <http://dx.doi.org/10.2139/ssrn.3575322>
9. S. Biswas, **P. K. Nayak**, R. S. Prakash and S. Dutta, "The Effect of Kernels in SVM on the Fault Classification Accuracy of a Transmission Line Compensated with TCSC," *Proceedings of the International Conference on Advances in Electronics, Electrical & Computational intelligence (ICAEEC-2019)*, 31st May– 1st June, 2019, IIIT Allahabad, India, pp. 1-10. Available: <http://dx.doi.org/10.2139/ssrn.3577488>
10. S. Biswas, and **P. K. Nayak**, "Superimposed Component-Based Protection Scheme for UPFC Compensated Transmission Lines," *20th National Power Systems Conference (NPSC-2018)*, 14th – 15th Dec., 2018, NIT Tiruchirappalli, Tamil Nadu.
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13. B. Anudeep, and **P. K. Nayak**, "A Passive Islanding Detection Technique for Distributed Generations," 7th International Conference on Power Systems, 2017 (ICPS 2017), 21st – 23rd Dec., 2017, College of Engineering Pune (COEP), Pune, India.
14. Ch. D. Prasad and **P. K. Nayak**, "New Linear Error Matrix Based Fault Detector for Transmission Line Relaying Application", in Proc. ICICICT-2017. (IEEE)
15. Ch. D. Prasad and **P. K. Nayak**, "A mixed strategy approach for fault detection during power swing in transmission lines," *Joint International Conference on Artificial Intelligence and Evolutionary Computations in Engineering Systems (ICAIECES-2017) & Power, Circuit and Information Technologies (ICPCIT-2017)*, 27th – 29th April, 2017, Madanapalle Institute of Technology & Science (MITS), Madanapalle, India.
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