Dr. Soumyabrata Barik

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Academic Qualifications

Indian Institute of Technology Kharagpur, Ph.D. in Power System 2014 – 2019

- Department: Electrical Engineering
- CGPA: 8.75

National Institute of Technology Calicut, M. Tech in Power System 2012 – 2014

- Department: Electrical Engineering
- CGPA: 8.77

Kalyani Government Engineering College, B. Tech in EE 2007 – 2011

- Department: Electrical Engineering
- CGPA: 8.75

Work Experience

Indian Institute of Technology (Indian School of Mines) Dhanbad Dec 2023 – Till Date

- Position: Assistant Professor (Gr-I)

BITS Pilani K. K. Birla Goa Campus Dec 2020 – Dec 2023

- Position: Assistant Professor (Gr-I)

BITS Pilani K. K. Birla Goa Campus July 2019 – Dec 2020

- Position: Assistant Professor (Gr-II)

Subjects Taught

BITS Pilani K. K. Birla Goa Campus 2019 – 2023

- Subjects Taught: Electrical Machines (UG), Electrical Power Systems (UG), Power Electronics (UG)

Indian Institute of Technology (Indian School of Mines) Dhanbad 2023- Till date

- Subjects Taught: Power System Dynamics (UG, PG, Ph.D.), Basic Electrical Engineering-I (UG), Electrical Devices & Circuits (UG)

Academic Experience

- Worked as a teaching assistant in the Renewable Energy Lab at IIT KGP.
- Worked as a teaching assistant in the Electrical Power Systems Lab at IIT KGP.
- Worked as a teaching assistant in the Basic Electrical and Electrical Machine Lab at IIT Kharagpur.
- Worked as a teaching assistant for Power System Analysis, Power System Engineering, Fundamentals of Electrical Engineering courses in National Program for Technology Enhanced Learning (NPTEL).

Technical Skills

- Knowledge of the basics of C language, Python language.
- Knowledge of MATLAB coding and SIMULINK.
- Knowledge of Electrical Softwares (ETAP, POWER WORLD, PSCAD).
- Knowledge of some text processing Softwares (LaTex, MS-Word).
- Knowledge of Moodle (Quanta) for organizing the online evaluation components.

Research Interests

Distribution Networks, Renewable Energy, Uncertainty Analysis, Applications of Soft Computing Techniques in Power System, Microgrid, Electric Vehicles.

Publications

Journals

- B. Das, V. Mukherjee, S. Barik, D. Das "Effect of Zero Bus Load Flow on Network Reconfiguration of Distribution Network", *International Journal of Ambient Energy, Taylor & Francis*, doi:10.1080/01430750.2022.2140193, 2022, Impact Factor-2.326.
- B. Das, S. Barik, V. Mukherjee, D. Das "Application of mixed discrete student psychology-based optimization for optimal placement of unity power factor distributed generation and shunt capacitor", *International Journal of Ambient Energy, Taylor & Francis*, https://doi.org/10.1080/01430750.2022.2111354, 2022, Impact Factor-2.326.
- S. Barik, D. Das, R. C. Bansal "Zero bus load flow method for the integration of renewable DGs by mixed-discrete particle swarm optimisation-based fuzzy max-min approach", *IET Renewable Power Generation*, doi-10.1049/iet-rpg.2020.0713, 2021, Impact Factor-3.894.
- S. Barik, D. Das, "A novel Q–PQV bus pair method of biomass DGs placement in distribution networks to maintain the voltage of remotely located buses", *Energy Elsevier*, vol. 194, pp. 116880, (https://doi.org/10.1016/j.energy.2019.116880), 2020, Impact Factor-7.147.
- S. Barik, D. Das, "Impact of Feeder Flow Control Distributed Generation in a Distribution Network in Presence of Renewable and Load Uncertainties by Mixed Discrete Particle Swarm Based Point Estimate Method", *IET Renewable Power Generation*, vol. 13, no. 9, pp. 1431–1445, 2019, Impact Factor-3.894.
- S. Barik and D. Das, "Determining the Sizes of Renewable DGs Considering Seasonal Variation of Generation and Load and Their Impact on System Load Growth," *IET Renewable Power Generation*, vol. 12, no. 10, pp. 1101–1110, 2018, Impact Factor-3.894.

Conferences

- Anagha R. K P, S. Barik and S. Swain, "Logic OR Based Modified Forward Backward Load Flow Method for the Siting and Sizing of DGs in Radial Distribution Networks", *2024 International Conference on Recent Innovation in Smart and Sustainable Technology (ICRISST)*, (Presented) 2024.
- S Suraj, N. S. Manjarekar, and S. Barik, "Solar Photovoltaic Charging of Electric Vehicle and V2G for Indian Electricity Demand Scenario", *International Conference on Advances in Renewable Energy & Electric Vehicles (AREEV)*, Springer, 2022.
- S Suraj, N. S. Manjarekar, and S. Barik, "Switched Capacitor based Bidirectional DC-DC Converter for Photovoltaic Energy Storage System in Indian Electricity Demand Scenario utilizing Secondary Life of Electric Vehicle Battery", *Power Electronics, Drives and Energy Systems (PEDES)*, IEEE, 2022.
- S Suraj, N. S. Manjarekar, and S. Barik, "SoC Estimation and IoT based Delayed Charging of Electric Vehicles", *2022 Second International Conference on Power, Control and Computing Technologies (ICPC2T)*, IEEE, pp. 1-6, 2022.
- S. Barik, D. Das, R. C. Bansal, R. Naidoo and N. Das, "A Novel Forward-Backward Zero Bus Power Flow Method for the Placement of Renewable DGs in Distribution Network," *Australasian Universities Power Engineering Conference (AUPEC)*, IEEE, pp. 1-6, 2021.
- S. Barik and D. Das, "Athletic Run Based Optimization: A Novel Method for the Integration of DGs and Shunt Capacitors," *International Conference on Electronics, Computing and Communication Technologies (CONECCT)*, IEEE, 2021. (Accepted and Presented).
- B. Das, S. Barik, V. Mukherjee and D. Das, "Dynamics Analysis of Split-Shaft Microturbine for Stand-Alone and Grid Connected Mode of Operation," *International Conference on Electronics, Computing and Communication Technologies (CONECCT)*, IEEE, 2021. (Accepted and Presented)
- S. Barik, and D. Das, "MDPSO Based Q–PQV Bus Pair Technique–A Novel Method to Maintain the Voltage of Remotely Located Buses with Renewable DGs," *IEEE PES Asia–Pacific Power and Energy Engineering Conference (APPEEC)*, IEEE, 2018.

- S. Barik, and Abraham T. Mathew, "Design and comparison of power system stabilizer by conventional and robust H loop shaping technique," *International Conference on Circuits, Power and Computing Technologies (ICCPCT)*, pp. 124-129. IEEE, 2014.

Book Chapters

- S Suraj, and S. Barik, N. S. Manjarekar and R. Bansal, "Handbook on New Paradigms in Smart Charging for E-Mobility: Global Trends, Policies and Practices" (Chapter-14) in "**RES & EV-Charging Potential Scenarios**", Elsevier Science. (Accepted) 2024.
- B. Das, S. Barik, D. Das and V. Mukherjee, " Optimization Algorithm for Renewable Energy Integration" (Chapter-1) in "**Intelligent Renewable Energy Systems: Integrating AI Techniques and Optimization Algorithms**", Wiley, Scrivener Publication, 2021.
- S. Barik, D. Das and Ramesh C. Bansal, "DG Investment and Allocation in Active Distribution Networks" (Chapter-11) in "**Uncertainties in Modern Power Systems**", pp. 343-394, Elsevier, 2020.

Projects

- " Investigating the Operation of EV integrated with Renewable Sources & Microgrid for Empowering Sustainability"
  - **Role:** PI
  - **Grant:** IIT (ISM) FRS Grant
  - **Cost:** Rs. 20,000,00.00
  - **Duration:** 2 Years
  - **Status:** Accepted

Reference Persons

- **Prof. Debapriya Das**
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  Phone: (+91)3222-283042
  eMail: ddas@ee.iitkgp.ernet.in;ddas.co.in@gmail.com
- **Prof. Ramesh C. Bansal**
  Address: Electrical Engineering Department, University of Sharjah, Sharjah, UAE
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- **Prof. Saurav Pramanik**
  Address: Electrical Engineering Department, IIT Kharagpur Campus, Kharagpur, West Bengal, India
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