

Shyam A B

Assistant Professor

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RESEARCH

Power Electronics • Power Electronic Converters • Wide Band Gap (WBG) based Circuits • Distributed Generation and Microgrids

EXPERIENCE

Assistant Professor • IIT (ISM) Dhanbad • Dhanbad, Jharkhand, India Oct 2023 – Present
Project Scientist • IIT Kanpur • Kanpur, Uttar Pradesh, India Aug 2023 – Oct 2023
Lecturer • RGUKT - R K Valley • Kadapa, Andhra Pradesh, India Jul 2012 – Dec 2015

EDUCATION

Ph. D. • Electrical Engineering • IIT Kanpur • Kanpur, India
M. E. • Electrical Engineering • IISc Bangalore • Bengaluru, India
B. Tech. • Electrical & Electronics Engineering • NSS College of Engineering • Palakkad, India

AWARDS & FELLOWSHIPS

Best Contributory Paper Award in track Micro-Grid and Distribution System at 9th International Conference on Power Systems (ICPS-2021), IIT Kharagpur, 2021
Student Support Grant to present paper at 2018 IEEE Innovative Smart Grid Technologies - Asia (ISGT Asia), Singapore, 2018

PROJECTS (As Principle Investigator)

2026-2029	Cyber-Resilient Intelligent Control Architecture for Next-Generation DC Microgrids by <i>Anusandhan National Research Foundation (ANRF)</i> under <i>Prime Minister Early Career Research Grant (PM-ECRG)</i> scheme
2024-2026	Design and Development of Onboard Charger for Electric Vehicle by <i>Indian Institute of Technology (Indian School of Mines) Dhanbad, India</i> under <i>Faculty Research Scheme (FRS)</i>

PUBLICATION SUMMARY

- 5 Journal publications, 7 publications in Conferences
- Google Scholar: 212 Citations, 6 h-index, 5 i10-index

JOURNAL PUBLICATIONS

- A. B. Shyam, S. R. Sahoo and S. Anand, "Voltage Regulation and Load Sharing in DC Microgrid Using Single Variable Global Average Estimation," in *IEEE Journal of Emerging and Selected Topics in Industrial Electronics*, vol. 5, no. 2, pp. 336-345, April 2024, doi: [10.1109/JESTIE.2023.3317800](https://doi.org/10.1109/JESTIE.2023.3317800)
- A. Das, A. Shukla, A. B. Shyam, S. Anand, J. M. Guerreo and S. R. Sahoo, "A Distributed-Controlled Harmonic Virtual Impedance Loop for AC Microgrids," in *IEEE Transactions on Industrial Electronics*, vol. 68, no. 5, pp. 3949-3961, May 2021, doi: [10.1109/TIE.2020.2987290](https://doi.org/10.1109/TIE.2020.2987290)
- A. B. Shyam, S. Anand and S. R. Sahoo, "Effect of Communication Delay on Consensus-Based Secondary Controllers in DC Microgrid," in *IEEE Transactions on Industrial Electronics*, vol. 68, no. 4, pp. 3202-3212, April 2021, doi: [10.1109/TIE.2020.2978719](https://doi.org/10.1109/TIE.2020.2978719)
- A. Ingle, A. B. Shyam, S. R. Sahoo and S. Anand, "Quality-Index Based Distributed Secondary Controller for a Low-Voltage DC Microgrid," in *IEEE Transactions on Industrial Electronics*, vol. 65, no. 9, pp. 7004-7014, Sept. 2018, doi: [10.1109/TIE.2018.2795524](https://doi.org/10.1109/TIE.2018.2795524)
- Islam, S., Agarwal, S., Shyam, A. B., Ingle, A., Thomas, S., Anand, S. and Sahoo, S.R. (2018), "Ideal current-based distributed control to compensate line impedance in DC microgrid," *IET Power Electronics*, 11: 1178-1186, doi: [10.1049/iet-pel.2017.0531](https://doi.org/10.1049/iet-pel.2017.0531)

CONFERENCE PUBLICATIONS

1. **A. B. Shyam**, A. Das, S. R. Sahoo and S. Anand, "Effect of Communication Delay on Steady State Voltage in DC Microgrids," *2022 22nd National Power Systems Conference (NPSC)*, New Delhi, India, 2022, pp. 524-529, doi: [10.1109/NPSC57038.2022.10069847](https://doi.org/10.1109/NPSC57038.2022.10069847)
2. **A. B. Shyam**, S. Ranjan Sahoo and S. Anand, "Voltage Regulation Controller in DC Microgrid: Implementation Challenges and Solutions," *IECON 2022 – 48th Annual Conference of the IEEE Industrial Electronics Society*, Brussels, Belgium, 2022, pp. 1-6, doi: [10.1109/IECON49645.2022.9968717](https://doi.org/10.1109/IECON49645.2022.9968717)
3. **A. B. Shyam**, S. R. Sahoo, S. Anand and J. M. Guerrero, "Comparative Study of Various Communication Technologies for Secondary Controllers in DC Microgrid," *2021 9th IEEE International Conference on Power Systems (ICPS)*, Kharagpur, India, 2021, pp. 1-6, doi: [10.1109/ICPS52420.2021.9670303](https://doi.org/10.1109/ICPS52420.2021.9670303)
4. V. P. Abhiram, **A. B. Shyam**, S. R. Sahoo and S. Anand, "Stability of DC Microgrid for Different Reduced Communication Topologies," *2019 8th International Conference on Power Systems (ICPS)*, Jaipur, India, 2019, pp. 1-6, doi: [10.1109/ICPS48983.2019.9067705](https://doi.org/10.1109/ICPS48983.2019.9067705)
5. V. P. Abhiram, **A. B. Shyam**, S. R. Sahoo and S. Anand, "Communication Topology Selection for Secondary Controllers in DC Microgrid," *2019 National Power Electronics Conference (NPEC)*, Tiruchirappalli, India, 2019, pp. 1-6, doi: [10.1109/NPEC47332.2019.9034875](https://doi.org/10.1109/NPEC47332.2019.9034875)
6. D. Dhua, **A. B. Shyam**, S. Anand and S. R. Sahoo, "Dynamic Overcurrent Saturation of Distributed Sources in a DC Microgrid System," *2018 20th National Power Systems Conference (NPSC)*, Tiruchirappalli, India, 2018, pp. 1-6, doi: [10.1109/NPSC.2018.8771443](https://doi.org/10.1109/NPSC.2018.8771443)
7. **A. B. Shyam**, A. Ingle, S. R. Sahoo and S. Anand, "Performance Analysis of Reduced Communication Network in DC Microgrid," *2018 IEEE Innovative Smart Grid Technologies - Asia (ISGT Asia)*, Singapore, 2018, pp. 976-981, doi: [10.1109/ISGT-Asia.2018.8467839](https://doi.org/10.1109/ISGT-Asia.2018.8467839)

LIST OF STUDENTS

No	Name	Title of Thesis	Program	Year of completion	Placement
1	Phularenu Das (Supervisor: Prof. P K Sadhu)	EV Charging and BMS Algorithms (tentative)	PhD	Ongoing	
2	Naveen Prakash Xalxo	-	PhD	Ongoing	

No	Name	Title of Thesis	Program	Year of completion	Placement
1	Bipin Chandra Pant	Design And Development of a Dual Active Full Bridge Phase Shifted DC-DC Converter for On Board EV Battery Charger	MTech	2025	Intel Private Limited
2	Niraj Sahu	Design And Development of a PFC Based AC-DC Active Front End Converter for On Board EV Battery Charger	MTech	2025	Kalinga Commercial Corporation Limited
3	Mohit Sharma	Designing an AFE Converter for On Board EV Battery Charger	MTech	2026	Carborundum Universal Limited
4	Rishabh Kumar	Design and Hardware Implementation of Dual Active Bridge DC-DC Converter for On-Board EV Battery Charger	MTech	2026	
5	Jai Dhall	EV Motor Drive (tentative)	MTech	Ongoing	

OTHER PROFESSIONAL ACTIVITIES

1. Departmental Undergraduate Committee (DUGC) member, EE, IIT (ISM) Dhanbad since Oct 2024
2. Department Faculty Coordinator for Alumni Affairs, EE, IIT (ISM) Dhanbad since Jun 2024
3. Organized Two days Centenary Webinar on Embracing Control Theory in Modern Real World in the Department of Electrical Engineering, Indian Institute of Technology (ISM) Dhanbad, India, 28 – 29 May 2025 (Co-Convener)

4. Session Chair for 2025 IEEE 1st International Conference on Smart and Sustainable Developments in Electrical Engineering (SSDEE) at Indian Institute of Technology (ISM), Dhanbad, India, 28 Feb – 02 Mar 2025
5. Speaker in Session 7: “Academia – Building relevant foundation for a sustainable future” at International Standards Summit 2024, Bengaluru on “Energy Sector – Ensuring Excellence, Adaptation and Transformation through Standards”, 04 – 05 Jul 2024

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