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 *Anusandhan National Research Foundation (ANRF)* under *Prime Minister Early Career Research Grant (PM-ECRG)* scheme
2024-2026	Design and Development of Onboard Charger for Electric Vehicle by *Indian Institute of Technology (Indian School of Mines) Dhanbad*, India under *Faculty Research Scheme (FRS)*

PUBLICATION SUMMARY

- **5** Journal publications, **7** publications in Conferences
- Google Scholar: **213** Citations, **6** h-index, **5** i10-index

JOURNAL PUBLICATIONS

1. 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.
2. 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.
3. 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.
4. 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.

5. 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.

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.
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.
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.
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.
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.
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.
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.

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	

No	Name	Title of Thesis	Program	Year of completion	Placement
1	Jai Dhall	EV Motor Drive (tentative)	MTech	Ongoing	
2	Rishabh Kumar	Design and Hardware Implementation of Dual Active Bridge DC-DC Converter for On-Board EV Battery Charger	MTech	2026	PhD – IIT (ISM) Dhanbad
3	Mohit Sharma	Designing an AFE Converter for On Board EV Battery Charger	MTech	2026	Carborundum Universal Limited
4	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
5	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

OTHER PROFESSIONAL ACTIVITIES

1. Departmental Undergraduate Committee (DUGC) member, EE, IIT (ISM) Dhanbad — Oct 2024 - Jun 2026
2. Department Faculty Coordinator for Alumni Affairs, EE, IIT (ISM) Dhanbad — Jun 2024 - Present

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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