

Dr. Rajat Sachan

Assistant Professor (on Contract), Electrical Engineering Department
Harcourt Butler Technical University, Kanpur, Uttar Pradesh, India



Contact Information

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Employment

Assistant Professor (on Contract), Electrical Engineering Department, Harcourt Butler Technical University, Kanpur, India — Present

Guest Faculty, Electrical Engineering Department, Harcourt Butler Technical University, Kanpur, India — 2024-25 & 2025-26.

Education

Doctor of Philosophy (Ph.D.), from Harcourt Butler Technical University, Kanpur , in 2026

Thesis Title: Performance Enhancement of Multilevel Inverter for High Voltage Photovoltaic Power Generation.

M.Tech., Electrical Engineering with specialization in Power Electronics and Drives, from Kamla Nehru Institute of Technology (KNIT), Sultanpur, in 2017

Percentage: 75.90%; Dissertation Title: Improved Transformerless Inverter with Common Mode Leakage Current Elimination for a Photovoltaic Grid Connected Power System

B.Tech., Electrical Engineering, from JSS Academy of Technical Education, Noida, in 2013
Percentage: 70.74%

Training, Faculty Development Programmes and Workshops

- Summer Training, "Electric Loco Shed N.C. Rly, Kanpur-3", 15 June 2012 to 14 July 2012.
- Attended a faculty Development Program on "Recent Advances in Renewable Energy Technologies and Smart Micro-grids", Department of Electrical Engineering, KNIT Sultanpur, 13–17 September 2016.
- Attended a one-week Short Term Training Programme on "DATA ANALYSIS AND SPSS SOFTWARE", Department of Mathematics, School of Basic and Applied Sciences, HBTU Kanpur, 21–25 October 2019.

- Attended an expert Talks on "Industrial Applications of Power Electronics", jointly organized by IEEE PELS SBC HBTU Kanpur and Department of Electrical Engineering, HBTU Kanpur, 20 June 2023.
- Conducted a Robotics Workshop, organized by IEEE PELS SBC, HBTU Kanpur, 15–17 November 2024, as Technical Expert.
- Participated in Two-Days Hands-on Workshop on "MATLAB and Simulink for Electrical Engineers" organized by IEEE Power Electronics Society Student Branch Chapter (IEEE PELS SBCI, Harcourt Butler Technical University (HBTU), Kanpur, held from 19th June, 2026 to 20th June, 2026.

Research Publications

Sachan, R. and Kumar, S.(2026) 'A novel 19-level inverter with reduced number of switches for grid connected photovoltaic power generation', Int. J. Power Electronics, Vol. 22, No. 6, pp.666–689.

R. Sachan and S. Kumar, "Three Phase Reduced Switch Count 19 level Inverter using a Three Phase Two level Inverter and four Single Phase H Bridges," *2024 2nd International Conference on Advancements and Key Challenges in Green Energy and Computing (AKGEC)*, Ghaziabad, India, 2024, pp. 1-6, doi: 10.1109/AKGEC62572.2024.10868522.

R. Sachan, N. Kumar, A. Arvind, A. K. Arya and S. Kumar, "Reduced Switch Count 36 level Inverter for Open End Winding Induction Motor Drive," *2019 2nd International Conference on Power Energy, Environment and Intelligent Control (PEEIC)*, Greater Noida, India, 2019, pp. 180-185, doi: 10.1109/PEEIC47157.2019.8976554.

R.Sachan, D. Singh, "Improved Transformerless Inverter With Common-Mode Leakage Current Elimination for a Photovoltaic Energy Conversion System", *International Journal of Engineering Research & Technology (IJERT)*, Vol. 6, pp. 391–399; ISSN: 2278-0181; 2017.

Research Interests

- Multilevel Inverters and Reduced-Switch-Count Converter Topologies
- Grid-Connected Photovoltaic Power Generation Systems
- Open-End Winding Multilevel Inverters
- Power Electronics and Electric Drives
- Real-Time Simulation and Hardware-in-the-Loop (HIL) Implementation

Academic Achievements

- Qualified GATE Exam in: GATE 2013, GATE 2015 and GATE 2018.

Declaration

I hereby declare that the information provided in this resume is true and correct to the best of my knowledge and belief.

Place : Kanpur
Date : 03-10-2026

Dr. Rajat Sachan