

**Dr. Om Hari Gupta**

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National Institute of Technology Jamshedpur, India-831014

[http://www.nitjsr.ac.in/academics/departments/profile.php?user\\_id=EE25](http://www.nitjsr.ac.in/academics/departments/profile.php?user_id=EE25)

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**AREA OF RESEARCH AND INTERESTS**

Modeling and simulation of Distributed Energy Resources (DERs) or Distributed Generations (DGs); Microgrid protection; Power systems compensation and protection; Harmonics analysis

*Simulation & Hardware Platforms:* MATLAB/SIMULINK; PSCAD; PSPICE; dSPACE; Real-time digital simulator (RTDS)

**ACADEMIC QUALIFICATIONS**

- ✓ **Ph.D. (Electrical Engineering)**, Thesis Title: "Protection aspects of transmission line and microgrid in the presence of switching devices", **Date of viva:** 8<sup>th</sup> March, 2017  
Indian Institute of Technology (IIT) Roorkee, Roorkee, India (2013–2017)
- ✓ **M. Tech.(Power Electronics & ASIC Design)**, Topic: Control of DC/AC drives using PID, Fuzzy-PID, and MRAC techniques  
Motilal Nehru National Institute of Technology (MN NIT), Allahabad, India (2009-2011)
- ✓ **B. Tech.(Electrical & Electronics Engineering)**  
Uttar Pradesh Technical University (UPTU), Lucknow, India (2004-2007)

**AWARDS/RECOGNITION/ADDITIONAL RESPONSINILITIES**

- **Queen Elizabeth II Diamond Jubilee Scholarship** awarded by Rideau Hall Foundation, Community Foundations of Canada, and Universities Canada for research visit to UOIT, Canada from March 2017 to June 2017
- **Co-chair**, Plenary Session, National Systems Conference-2018 (NSC-2018), DEI, Agra, 1<sup>st</sup> Dec – 3<sup>rd</sup> Dec, 2017
- **Invited Expert**, Summer Internship Program in Electrical Engineering, EED, MN NIT, Allahabad, 1<sup>st</sup> July 2018
- **Lab-in-charge**, Control Systems Lab, EED, NIT JSR, 13<sup>th</sup> July, 2018 – till date
- **Professor-in-Charge**, Electrical Engineering Society, NIT JSR, 10<sup>th</sup> Jan, 2019 – till date
- **Purchase coordinator**, EED, NIT JSR, 1<sup>st</sup> May, 2019 – till date
- **Coordinator**, Short Term Course on "Recent Trends in Microgrid and Its Real-Time Implementation Using Opal-RT (RTM-2019)", EED, NIT JSR, India, 27<sup>th</sup> May – 1<sup>st</sup> June, 2019
- **Warden**, Hostel-D (Dr. Rajendra Prasad Hall of Residence), NIT JSR, 30<sup>th</sup> July, 2019 – till date
- **Member, Publication Cell, NIT Jamshedpur**, 6<sup>th</sup> March, 2020 – till date
- **Organizing Secretary**, TEQIP-III sponsored "Electric Power and Renewable Energy Conference (EPREC-2020)", Organized at EED, NIT JSR, 29<sup>th</sup> – 30<sup>th</sup> May, 2020

**MEMBERSHIP OF PROFESSIONAL GROUPS**

- IEEE Student Member (2015, 2016)
- IEEE member (2019, 2020)

**REVIEW WORK**

Journal Name	Publisher
IEEE Transactions on Power Delivery	IEEE
Electric Power Components and Systems	Taylor & Francis
International Journal of Electronics	Taylor & Francis
IET Generation Transmission & Distribution	IET
Canadian Journal of Electrical & Computer Engineering	IEEE
Journal of Institution of Engineering (Series B)	Springer
International Journal of Electronics Letters	Taylor & Francis

### POST-DOCTORAL EXPERIENCE (3 MONTHS)

March – June 2017 Department of Electrical, Computer and Software Engineering,  
 University of Ontario Institute of Technology, ON L1H 7K4, Canada

### TEACHING EXPERIENCE (6 YEARS)

**June 2018 – till date** Assistant Professor, Department of Electrical Engineering,  
 1 Year, 8 Months National Institute of Technology, Jamshedpur, India  
**Jan 2017 – June 2018** Assistant Professor, Department of Electrical Engineering, FOE,  
 1 Year, 5 Months Dayalbagh Educational Institute, Agra, India  
**July 2012 – Dec 2012** Assistant Professor, Department of Electrical and Electronics  
 0 Year, 5 Months Engineering, Vidya College of Engineering, Meerut, India  
**June 2011 – May 2012** Assistant Professor, Department of Electrical and Electronics  
 1 Year, 0 Month Engineering, GLA University Mathura, India  
**Nov 2007 – July 2009** Lecturer, Department of Electrical Engineering, BSA College of  
 1 Year, 8 Months Engineering & Technology, Mathura, India

### SUBJECTS TAUGHT (UG LEVEL)

- Switch Gear and Protection
- Analog Electronics
- Basic Electrical Engineering
- Instrumentation
- Electric Machines
- Digital Electronics
- Electrical Networks
- Utilization of Electric Power

### SUBJECTS TAUGHT (PG LEVEL)

- Electric Power Quality
- HVDC Transmission System
- Micro and Smart Grids
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### M.TECH SUPERVISED

S.N.	Student Name	Topic	Status
1.	<b>Amar Baboo</b> (164502) Engg. Sys, EED, DEI, Agra	High-performance Buck-Boost converter for MPPT	Awarded (2018)
2.	<b>Kaja Sivaramprasad</b> (2017PGEEPS01)	DFX - scan feature validation for early detection of silicon bugs in SoC's	Awarded (2019)
3.	<b>Neethish Ravindran</b> (2017PGEEPE12)	Signal integrity impact on dual referenced signal traces and mitigation techniques	Awarded (2019)
4.	<b>JAYSHREE</b> (2018PGEEPS11)	Operation and control of renewable-based distributed generation	Ongoing
5.	<b>PALURU VENKATESH</b> (2018PGEEPS12)	Protection aspects of advanced distribution system	Ongoing

### PHD SUPERVISED

S.N.	Scholar Name	Topic	Reg. Year	Status
1.	<b>Jai Praksh Sharma</b> (2018RSEE010)	Protection of compensated/uncompensated transmission systems	Autumn 2018-19	Ongoing
2.	<b>Jeetendra Kumar</b> (2018RSEE011)	Microgrid protection	Autumn 2018-19	Ongoing
3.	<b>Ravi Shankar Tiwari</b> (2018RSEE017)	Protection of hybrid AC/DC grids	Spring 2018-19	Ongoing
4.	<b>Salauddin Ansari</b> (2019RSEE006)	Control, operation and protection of microgrid	Autumn 2019-20	Ongoing

## **RESEARCH PROJECT**

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### **Applied:**

1. Collaborative project with **IIT Roorkee** on “*Stability, Protection and Control of Hybrid Micro-Grid: Hardware-in-Loop Simulation and Testing*” applied under **National Perspective Plan (NPP) to CPRI, Bangalore** amounting **1.92 Crore – as Co-PI**

## **PUBLICATIONS**

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### **International/National Journals:**

1. S. Sheel and **O.H. Gupta**, “New Techniques of PID Controller Tuning of a DC Motor—Development of a Toolbox”, **International Journal of Electrical and Instrumentation Engineering**, vol.2, no.2, pp. 65-69, **2012**, (*Publisher: Science & Engineering Research Support soCiety, ISSN: 2005-4297*)
2. S. Sheel and **O.H. Gupta**, “High Performance Fuzzy Adaptive PID Speed Control of a Converter Driven DC Motor”, **International Journal of Control and Automation**, vol.5, no.1, pp. 71-88, **2012**, (*ISSN: 2230-7656*)
3. **O.H. Gupta** and M. Tripathy, “An Innovative Pilot Relaying Scheme for Shunt-Compensated Line”, **IEEE Transactions on Power Delivery**, vol. 30, no. 3, pp. 1439-1448, June **2015**, (*DOI:10.1109/TPWRD.2015.2394353, Publisher: IEEE, ISSN: 0885-8977*)
4. **O.H. Gupta** and M. Tripathy, “Superimposed Energy-Based Fault Detection and Classification Scheme for Series-Compensated Line”, **Electric Power Components and Systems**, vol. 44, no. 10, pp. 1095-1110, June **2016**, (*DOI:10.1080/15325008.2016.1148082, Publisher: Taylor & Francis Group, ISSN: 1532-5008*)
5. **O.H. Gupta** and M. Tripathy, “ERF-Based Fault Detection Scheme for STATCOM-Compensated Line”, **International Transactions on Electrical Energy Systems**, vol.27, no.6, pp. 1-22, June **2017**, (*DOI:10.1002/etep.2314, Publisher: John Wiley & Sons Ltd, ISSN: 2050-7038*)
6. **O.H. Gupta** and M. Tripathy, “Universal Pilot Relaying Scheme for Series and Shunt-Compensated Lines”, **IET Generation, Transmission & Distribution**, vol.12, no.4, pp. 799-806, Feb **2018**, (*DOI:10.1049/iet-gtd.2017.0814, Publisher: IET, ISSN: 1751-8687*)
7. **O.H. Gupta** and M. Tripathy, “An Improved Pilot Relaying Scheme for Shunt-Compensated Transmission Line Protection Based on Superimposed Reactive Power Coefficients”, **Electric Power Components and Systems**, vol.45, no.20, pp. 2228-2245, Mar **2018**, (*DOI:10.1080/15325008.2017.1376361, Publisher: Taylor & Francis Group, ISSN: 1532-5008*)
8. **O.H. Gupta** and M. Tripathy, “EPE-Based Pilot Relaying Scheme Immune to SIR Variations”, **IETE Journal of Research**, in press, pp. 1-11, July **2018**, (*DOI:10.1080/03772063.2018.1488629, Publisher: Taylor & Francis Group, ISSN: 0377-2063*)
9. **O.H. Gupta**, M. Tripathy, and V.K. Sood, “Islanding Detection Scheme for Converter-Based DGs with Nearly Zero Non-Detectable Zone”, **IET Generation, Transmission & Distribution**, vol.13, no.23, pp. 5365-5374, Dec **2019**, (*DOI:-10.1049/iet-gtd.2018.5168, Publisher: IET, ISSN: 1751-8687*)

### **Book Chapter:**

1. **O.H. Gupta**, M. Tripathy, and V.K. Sood, “Hybrid Event Classification Scheme for Converter-Based DG with Improved Power Quality,” in **Microgrid: Operation, Control, Monitoring and Protection**, Springer, ISBN: 978-981-15-1780-8, pp. 207-238, Jan **2020**  
DOI:10.1007/978-981-15-1781-5\_7

### **International/National Conferences:**

1. S. Sheel, R. Chandkishor and **O.H. Gupta**, "Speed control of DC drives using MRAC technique", *2010 2nd International Conference on Mechanical and Electrical Technology (ICMET 2010)*, **Singapore**, pp.135-139, Sept. 10-12, **2010**
2. **O.H. Gupta** and S. Sheel, "Control of induction motor drive with PSpice-MATLAB interfacing," *2012 IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES 2012)*, **Bengaluru, India**, pp.1-6, Dec. 16-19, **2012**
3. **O.H. Gupta** and R.K. Swami, "Comparative results for a continuously stirred tank reactor (CSTR) blending process control using PID toolbox", *National Conference on Technology Advances in Electrical & Renewable Energy Engineering (ERECON-2013)*, **Udaipur, India**, pp. 07-11, 23-24 Feb. **2013**
4. R.C. Gupta, **O.H. Gupta** and R. K. Swami, "Backing of the truck by a self-organizing Fuzzy Approach", *National Conference on Technology Advances in Electrical & Renewable Energy Engineering (ERECON-2013)*, **Udaipur, India**, pp. 33-40, 23-24 Feb. **2013**
5. **O.H. Gupta** and M. Tripathy, "Impact of Degraded Power Quality on Distance Relaying for EHV Transmission Lines: A Case Study", *8th International Conference on Capacitors (CAPACIT-2014)*, **New Delhi, India**, pp. 1-8, 20-21 Nov. **2014**
6. **O.H. Gupta** and M. Tripathy, "An Integrated Impedance-Based Pilot Protection Scheme for SVC-Compensated Transmission Line", *2014 3<sup>rd</sup> International Conference on Power, Control and Embedded Systems (ICPCES 2014)*, **Allahabad, India**, pp. 1-6, 26-28 Dec. **2014**
7. **O.H. Gupta** and M. Tripathy, "Directional Relaying Scheme for TCSC-Compensated Line", *2015 Electrical Power and Energy Conference (EPEC 2015)*, **Ontario, Canada**, pp. 303-307, 26-28 Oct. **2015**
8. **O.H. Gupta** and M. Tripathy, "Energy-Based Relaying Scheme for Series Compensated Line", *39th National Systems Conference (NSC-2015)*, **Noida, India**, pp. 1-6, 14-16 Dec. **2015**
9. **O.H. Gupta** and M. Tripathy, "Relaying Scheme for STATCOM-Compensated Transmission Line", *2016 6th IEEE International Conference on Power Systems (ICPS 2016)*, **New Delhi, India**, pp. 1-6, 04-06 Mar. **2016**
10. **O.H. Gupta** and M. Tripathy, "Positive Sequence Phasor Estimation Based Pilot Relaying Scheme for Shunt Compensated Line", *19th National Power Systems Conference (NPSC-2016)*, **Bhubaneswar, India**, pp. 1-6, 19-21 Dec. **2016**
11. **O.H. Gupta** and M. Tripathy, "EC-Based Relaying Scheme for the Protection of Shunt-Compensated Transmission Line", *4th International Conference on Power, Control and Embedded Systems (ICPCES-2017)*, **Allahabad, India**, pp. 1-6, 09-11 Mar. **2017**
12. **O.H. Gupta** and M. Tripathy, "Real-Time Validation of ERF-Based Scheme for Shunt-Compensated/Uncompensated Line", *2017 3<sup>rd</sup> International Conference on Power Generation Systems and Renewable Energy Technologies (PGSRET 2017)*, **Johor Bahru, Malaysia**, pp. 1-6, 04-06 Apr. **2017**
13. **O.H. Gupta**, M. Tripathy, and V.K. Sood, "Digital Relaying Scheme for Protection of Shunt-Compensated Transmission Lines", *IEEE Electrical Power and Energy Conference (EPEC-2017)*, **Saskatoon, Canada**, pp. 1-6, 22-25 Oct. **2017**
14. Jayshree, J.P. Sharma and **O.H. Gupta**, "Study of different passive islanding detection techniques and verification by MATLAB simulation", *International Conference on Emerging Trends for Smart Grid Automation and Industry 4.0 (ICETSGAI4.0-2019)*, **Ranchi, India**, pp. 1-7, 05-07 Dec. **2019**
15. R. S. Tiwari and **O.H. Gupta**, "Study of Combined Time and Current Grading Protection Scheme for Distribution System", *International Conference on Power Electronics & IoT Applications in Renewable Energy and its Control (PARC-2020)*, **Mathura, India**, pp. 1-5, 28-29 Feb. **2020**

16. S. Ansari and **O.H. Gupta**, "Voltage Ripple Based Islanding Technique on Modified IEEE-13 Bus Test Feeder for Photovoltaic Inverter", *Electric Power and Renewable Energy Conference (EPREC-2020)*, **Jamshedpur, India**, pp. NA, 29-30 May **2020**
  17. S. Das and **O.H. Gupta**, "Study and Simulation of PMSG-based Wind Turbine", *Electric Power and Renewable Energy Conference (EPREC-2020)*, **Jamshedpur, India**, pp. NA, 29-30 May **2020**
  18. Ch. S. Balasubrahmanyam and **O.H. Gupta**, "Study and Implementation of 1-phase DVR for Power Quality Enhancement", *Electric Power and Renewable Energy Conference (EPREC-2020)*, **Jamshedpur, India**, pp. NA, 29-30 May **2020**
  19. J. P. Sharma, S. Shaw, and **O.H. Gupta**, "Application of Admittance-based Relaying Scheme under Dynamic Shunt Compensation", *Electric Power and Renewable Energy Conference (EPREC-2020)*, **Jamshedpur, India**, pp. NA, 29-30 May **2020**
  20. R. S. Tiwari, **O.H. Gupta**, and V.K. Sood, "Ground Fault Detection Using Pole Differential Current Measurement for 2-Terminal Bipolar HVDC Lines", *Electric Power and Renewable Energy Conference (EPREC-2020)*, **Jamshedpur, India**, pp. NA, 29-30 May **2020**
  21. S. Ansari, **O.H. Gupta**, and M. Tripathy, "An Islanding Detection Methodology for SOFC-based Static DG using DWT", *Electric Power and Renewable Energy Conference (EPREC-2020)*, **Jamshedpur, India**, pp. NA, 29-30 May **2020**
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