Faculty detail

Name: DR. NIKITA GUPTA

Designation: Assistant Professor

Department: Electrical Engineering Department

Research Interests: Power system engineering, power quality, power electronic converters and its application in renewable energy systems and microgrid.

Academic/ Industrial Experience

Sr. No.	Position	Organization	Period in months/years
1.	**Assistant Professor** (Regular)	University Institute of Technology, Himachal Pradesh University	**8 months**
2.	**Temporary faculty** (Contractual)	National Institute of Technology (NIT) Hamirpur	**11 months**
3.	**Guest faculty** (Contractual)	National Institute of Technology (NIT) Hamirpur	**6 months**
4.	**Lecturer** (Contractual)	National Institute of Technology (NIT) Hamirpur	**11 months**

Awards/Recognitions

Sr. No.	Title	Organization	Year
1.	Outstanding paper Award	IEEE GPECOM-2020, Ephesus Izmir, Turkey.	2020
2.	Commendable Research Award	Delhi Technological University, Delhi, India.	2019
3.	Best paper Award	IEEE INDICON-2015, Jamia Millia Islamia, New Delhi, India	2015
4.	Certificate of Appreciation for holding the post of Hostel Committee Secretary	NIT Hamirpur	2011
5.	First prize in Marconi mantra event	Indian Society for Technical Education, NIT Hamirpur	2008
6.	Certificate of Achievement for securing 90.4% in aggregate in +2 class	DAV College Managing Committee	2007
7.	Third in HATSE, State level talent searches examination of science students	Himachal Pradesh	2006

Publications

1. SCI Journals: 9

1. Mahajan Sagar Bhaskar, Dhafer Almakhles, P. Sanjeevikumar, Umashankar Subramaniam, **Nikita Gupta.** Double-Switch Switched-Inductors Converter with Reduce Switch Voltage Stress for Renewable Integration. ***Computers & Electrical Engineering***. July 2021.
2. **Nikita Gupta**, Rahul Dogra, Rachana Garg, Parmod Kumar. Review of Islanding Detection Schemes for Utility Interactive Solar Photovoltaic Systems. ***International journal of Green Energy***. June 2021.
3. **Nikita Gupta**, Rachana Garg, Parmod Kumar. Grid Synchronization and islanding detection control algorithm for two-stage three-phase SPV system. ***IETE Journal of Research***. February 2021.
4. Mahajan Sagar Bhaskar, **Nikita Gupta,** Sivakumar Selvam, Dhafer Almakhles, P. Sanjeevikumar, Jagabar Sathik, Umashankar Subramaniam. A New Hybrid Zeta-Boost Converter with Active Quad Switched Inductor for High Voltage Gain. ***IEEE Access.*** January 2021.

5. **Nikita Gupta**, Rachana Garg. Algorithm for Islanding Detection in PV Generator Networks Connected to Low-Voltage Grid. ***IET Generation, Transmission & Distribution***. Volume 12, Issue 10, p. 2280 – 2287. May 2018.
6. **Nikita Gupta**, Rachana Garg, Parmod Kumar. Characterization Studies of Dual-Input Single-Output Converters for PV Applications. ***IETE Journal of Research***. July 2019.
7. **Nikita Gupta**, Rachana Garg. Design, Development and Reliability Assessment of Dual Output Converters for SPV based DC Nanogrid. ***Journal of Renewable and Sustainable Energy*****.** Volume 10, Issue 2, March 2018.
8. **Nikita Gupta**, Rachana Garg. Tuning of Asymmetrical Fuzzy Logic Control Algorithm for SPV system connected to Grid. ***International Journal of Hydrogen Energy*****.** Volume 42, Issue 26, June 2017, Pages 16375–16385.
9. **Nikita Gupta**, Rachana Garg, Parmod Kumar. Sensitivity and reliability models of a PV system connected to grid. ***Renewable and Sustainable Energy Reviews***, Volume 69, March 2017, Pages 188-196.

2. Referred journals:1

1. Rahul Dogra, **Nikita Gupta**. Glowworm swarm optimization technique for optimal power flow. ***Advances in Electronic and Electrical Engineering***, ISSN 2231-1297, Volume 4, Number 2, pp.155-160.

3. Conference Presentations:20

1. **Nikita Gupta**, Nil Patel, Mahajan Sagar Bhaskar, P. Sanjeevikumar, Dhafer Almakhles, Umashankar Subramaniam. 3Nx DC-DC Converter: Non-isolated Interleaved Power Converter for High Voltage Gain Applications. 2020 *IEEE International Conference on Power Electronics, Drives, and Energy Systems (PEDES 2020)*, 16-19 December 2020.
2. **Nikita Gupta**, Sivakumar Selvam, Mahajan Sagar Bhaskar, Dhafer Almakhles, Umashankar Subramaniam. 2L-L Triple Port Converter: Enhancement in Voltage Gain for High Voltage Vehicular Loads. *7th IEEE Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON 2020)*, 27-29 November 2020, Prayagraj, India.
3. **Nikita Gupta**, Sanjay Sharma, Jasmine Kaur. Review of inverter control algorithms in Grid-integrated Solar Photovoltaic system. *2nd International Conference on Sustainability and Resilience*, University of Bahrain. 11th-12th November 2020.
4. **Nikita Gupta**, Dhafer Almakhles, Mahajan Sagar Bhaskar, P. Sanjeevikumar, Jens Bo Holm-Nielsen, Massimo Mitolo. Novel Hybrid High Gain Converter: Combination of Cuk and Buck-Boost Structures with Switched Inductor for DC Microgrid. *2nd Global Power, Energy and Communication Conference (GPECOM2020)* October 20th-23rd, 2020 Ephesus Izmir, Turkey.
5. **Nikita Gupta**, Mahajan Sagar Bhaskar, Dhafer Almakhles, P. Sanjeevikumar, Frede Blaabjerg, Zbigniew Leonowicz. Two-Tier Converter: A New Structure of High Gain DC-DC Converter with Reduced Voltage Stress. *IEEE-EEEIC-2020*, Madrid Spain, 9th-12th June 2020.
6. **Nikita Gupta**, Mahajan Sagar Bhaskar, Dhafer Almakhles, P. Sanjeevikumar, Umashankar Subramaniam, Zbigniew Leonowicz, Massimo Mitolo. Novel Non-Isolated Quad-Switched Inductor Double-Switch Converter for DC Microgrid Application. *IEEE-EEEIC-2020* conference, Madrid Spain, 9th-12th June 2020.
7. Harshal D. Vaidya, Mahajan Sagar Bhaskar, **Nikita Gupta**, P. Sanjeevikumar, Dhafer Almakhles, Umashankar Subramaniam, Zbigniew Leonowicz, Massimo Mitolo. Methodology and Modelling of Single Phase Series Compensator Circuit (SCC) for Mitigating Voltage Sag or Swell in the Power System Networks. *IEEE-EEEIC-2020 conference*. Madrid Spain, 9th-12th June 2020.
8. **Nikita Gupta**, Rachana Garg. IED with advanced islanding detection functionality for PV based Microgrid. *12th INDIACom 5th International Conference on Computing for Sustainable Global Development*, 14th-16th March, 2018, Bharati Vidyapeeth's Institute of Computer Applications and Management (BVICAM), New Delhi (INDIA). ISSN 0973 – 7529 and ISBN 978-93-80544-28-1
9. Urvashi Meena, **Nikita Gupta**, Rachana Garg. Control of Grid-Connected Solar Photovoltaic System using L and LCL filter. *International Conference on Emerging Trends in Engineering Innovations and Technology Management. (ICET: EITM-2017)*. 16-18 December, 2017. NIT Hamirpur, Hamirpur, Himachal Pradesh.
10. Shiena Kundu, **Nikita Gupta**, Parmod Kumar. Review of Solar Photovoltaic Maximum Power Point Tracking Techniques. *IEEE India International Conference on Power Electronics (IICPE-2016)*. November 17-19, 2016. Thapar University, Patiala (Punjab), INDIA.

11. Manoj Kumar, **Nikita Gupta**, Rachana Garg. Unity Power Factor Control of Grid Connected SPV system using Instantaneous Symmetrical Component Theory. *IEEE International Conference on Power Electronics, Intelligent Control and Energy Systems (ICPEICES-2016).* 4-6 July 2016, DTU, India.
12. **Nikita Gupta**, Rachana Garg, Parmod Kumar. Characterization Study of PV module Connected to Microgrid. *IEEE India International Conference (INDICON-2015)* Dec 17-20, 2015, JMI, India.
13. **Nikita Gupta**, Rachana Garg, Parmod Kumar. Asymmetrical Fuzzy logic control to PV Module Connected micro-grid. *IEEE India International Conference (INDICON-2015)* Dec 17-20, 2015, JMI, India.
14. **Nikita Gupta**, Rachana Garg, Parmod Kumar. Smart Grid – A Conceptual Design. *National conference on Emerging trends in Electrical and Electronics Engineering (ETEEE 2015)* Feb 02-03, 2015, JMI, Delhi
15. Priya Mahajan, Rachana Garg, **Nikita Gupta**, Parmod Kumar. Design and Simulation of H-Bridge Fed Direct Torque Controlled Electric Traction Drive. *IEEE India International Conference on Power Electronics (IICPE 2014)* Dec 08-10, 2014, NIT Kurukshetra, India.
16. Rachana Garg, Priya Mahajan, **Nikita Gupta**, Harsha Saroa. Comparative Study between Field Oriented Control and Direct Torque Control of AC Traction Motor. *IEEE International Conference on recent advances and innovation in engineering (ICRAIE 2014)* May 09-11, 2014, Jaipur India.
17. Rahul Dogra, **Nikita Gupta**, Harsha Saroa Economic Load Dispatch Problem and MATLAB Programming Of Different Methods. *International Conference of Advance Research and Innovation.* ISBN 978-93-5156-328-0. pp 202-207, 2014.
18. Harsha Saroa, **Nikita Gupta**. Hardware Implementation of Prototype Model of Two Port Network. *International Conference of Advance Research and Innovation,* ISBN 978-93-5156-328-0, pp 208-211, 2014.
19. Rachana Garg, **Nikita Gupta**, Harsha Saroa. Symmetrical and Non-Symmetrical Fault Simulation by DIgSILENT Power Factory Software. *Proceedings of the 11th National Conference on Industrial Problem on Machine and Mechanisms (IPRoMM 2014),* I.T.S Engineering College, Greater Noida, February 26-27, 2014.
20. Rachana Garg, Harsha Saroa, **Nikita Gupta**. Design and Development of Prototype Distribution System. *Proceedings of the 11th National Conference on Industrial Problem on Machine and Mechanisms (IPRoMM 2014),* I.T.S Engineering College, Greater Noida, February 26-27, 2014.

4. Book/Books chapter published:

1. **Nikita Gupta**, Rachana Garg. Study of Conventional Control Algorithms for PV-Based Grid-Connected Microgrid. Book chapter published in *Proceeding of International Conference on Intelligent communication, Control and Devices. Series: Advances in Intelligent systems and computing.* Volume no 479. 2016. ISBN: 978-981-10-1707-0.
2. Sanjay Kumar, **Nikita Gupta**, Vineet Kumar, Tarlochan Kaur. A systematic approach for solar and Hydro resource assessment for DC Microgrid applications. Book chapter accepted in a book titled DC Microgrids Advances Challenges and Applications, *Wiley Scrivener Publishing* to be released in August 2021.
3. Mahajan Sagar Bhaskar, **Nikita Gupta**, P. Sanjeevikumar, Jens Bo Holm-Nielsen, S. Umashankar. Power Electronics for Green Energy Conversion. Book accepted under *Wiley Scrivener Publishing* to be released in August 2021.
4. **Nikita Gupta**, Mahajan Sagar Bhaskar, Sanjeevikumar Padmanaban, Dhafer Almakhles. DC Microgrids Advances Challenges and Applications. Book accepted under *Wiley Scrivener Publishing* to be released in August 2021.
5. Sanjay Sharma, **Nikita Gupta**, Sandeep Kumar and Subho Upadhyay. Renewable Energy Systems: Modeling, Optimization, and Applications. Book accepted under *Wiley Scrivener Publishing* to be released in September 2021.

Achievements

1. Received **Ministry of Human Resource Development (MHRD) assistantship** from Govt. of India, during the Ph.D.
2. Received **Ministry of Human Resource Development (MHRD) Gate scholarship** from Govt. of India during M.Tech
3. Qualified GATE 2012, with **98.64 percentile**.
4. Received **State Government merit scholarship** during B.Tech.

Major Administrative Responsibilities

1. **SPOC** of 'SWAYAM NPTEL Local Chapter' of University Institute of Technology, HPU, Shimla, since January 2021.
2. **Convener** of 'National Innovation and Startup Policy (NISP)' in University Institute of Technology, HPU, Shimla, an initiative of Ministry of Education (MoE), Govt. of India to enable academic institutions to promote and support innovations and entrepreneurs, since July 2021.
3. **Vice President** of 'Institute Innovation Council (IIC)' in University Institute of Technology, HPU, Shimla, an initiative of Ministry of Education (MoE), Govt. of India, to systematically foster the culture of Innovation amongst all Higher Education Institutions (HEIs) since July 2021.

Teaching

UG courses:

1. Basic Electrical Engineering
2. Network Analysis and Synthesis
3. Power Electronics
4. Microelectronics & Integrated Circuits
5. Power System Operation and Control

PG courses:

1. Energy Efficiency, Audit and Management

Reviewer of Journals

1. IEEE Transactions on Industrial Electronics-IEEE
2. IET Generation Transmission & Distribution-IET
3. Electric Power Components and Systems-Taylor and Francis
4. International Transactions on Electrical Energy Systems- Wiley
5. Journal of Computational Electronics-Springer
6. Electric Power Components and Systems- Elsevier
7. Computers and Electrical Engineering Journal-Elsevier
8. Journal of Ocean Engineering and Science- Elsevier

Miscellaneous Honorary Work

1. Delivered lecture, "Grid Integration of Solar Photovoltaic Systems," in TEQIP-III sponsored **Webinar** organized by Motihari College of Engineering, Bihar, August 25th, 2020.
2. Delivered lecture, "Faculty Awareness Workshop on NPTEL-SWAYAM," in **Workshop** organized by University Institute of Technology, HPU, Shimla, March 19th, 2021.
3. Delivered lecture, "Student Awareness Workshop on AICTE B.Tech Honours Scheme and NPTEL-SWAYAM," in **Workshop** organized by University Institute of Technology, HPU, Shimla, May 7th, 2021.
4. Delivered lecture, "Machine learning in Electrically Engineering," in **Online Faculty Development Program** on Machine learning based applications, organized by Department of Electronics and Communication Engineering, Sreyas Institute of Engineering and Technology, Hyderabad, 31st May to 6th June, 2021.
5. Delivered lecture, "Grid Integration of Solar Photovoltaic Systems," in **Online Faculty Development Program** on Renewable Power Generation Control and Applications (RPGCA-2021) organized by University Institute of Technology, Himachal Pradesh University, India, June 16th, 2021.

Other Details

- **Technical committee member** for RDCAPE-2017, ICACCI-2017 conference.
- **Organizing committee member** for ICPEICES 2016 held in the Electrical Engineering Department at Delhi Technological University during 4-6 July, 2016.

- **Volunteer** for IICPE'12 held at Delhi Technological University during 6-8 December, 2012.
- **Coordinator** for Inaugural ceremony of SESI (Solar Energy Society of India), August 26, 2013 and Workshop on Smart Grid Applications DTU, Delhi, Feb 18-19, 2013.
- **Co-Convener** of Organization Club in Hill'ffair, an Annual Cultural Fest of NIT Hamirpur, 30th Oct. - 1st Nov., 2009.
- **Executive Member** of ISACH, a National level Technical and Cultural event, organized by ISTE, Student Chapter, NIT Hamirpur, 12th October , 2008.
- **Executive Member** of Organization Club in Hill'ffair, an Annual Cultural Fest of NIT Hamirpur, 7th Nov. – 9th Nov., 2008.
- **Volunteer** of Organization Club, Decoration Club, INS & Control Club, and Dance Club in Hill'ffair, an Annual Cultural Fest of NIT Hamirpur, 2nd Nov. – 4th Nov., 2007.
- **Member** of "Literacy Mission-Prayas" at NIT Hamirpur and Technical Club "Institution of Engineers" at Undergraduate Level.

Contact Details

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Link to Google Scholar profile: https://scholar.google.co.in/citations?user=rijMG0oAAAAJ&hl=en