

FACULTY PROFILE



Name: Dr. Pankaj Kumar

Designation: Assistant Professor

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Professional Qualification:

- Ph.D., IIT (ISM), Dhanbad, 2021
- M.Tech, IIT (ISM), Dhanbad, 2016
- B. Tech, KIIT University, Bhubaneswar, 2013

Publications (Journals & Conferences):

Publications (25 Nos.)

A.) International Journals Published (15 Nos.)

- Shilpa Sambhi, Himanshu Sharma, Vikas Bhadoria, **Pankaj Kumar**, Ravi Chaurasia, Georgios Fotis, Vasiliki Vita, “Technical and Economic Analysis of Solar PV/ Diesel Generator Smart Hybrid Power Plant Using Different battery Storage Technologies for SRM IST, Delhi NCR Campus”, *Designs*, ISSN:2411-9660, DOI: <https://doi.org/10.3390/designs7020055>, 7(2), 55, Apr 2023. (**SCOPUS Indexed Journal**).
- Shilpa Sambhi, Himanshu Sharma, Vikas Bhadoria, **Pankaj Kumar**, Ravi Chaurasia, Georgios Fotis, Vasiliki Vita, “Technical and Economic Analysis of Solar PV/ Diesel Generator Smart Hybrid Power Plant Using Different battery Storage Technologies for SRM IST, Delhi NCR Campus”, *Sustainability*, ISSN:2071-1050, DOI:<https://doi.org/10.3390/su15043666>, 15(4), 3666, Feb 2023. [**SCIE; I.F. 3.9**]. [**Q2**]
- Shilpa Sambhi, Himanshu Sharma, Vikash Badoria, **Pankaj Kumar**, Ravi Chaurasia, Giraja Shankar Chaurasia, Georgios Fotis, Vasiliki Vita, Lambros Ekonomou, Christos Pavlatos, “Economic Feasibility of a Renewable Integrated Hybrid Power Generation System for a Rural Village of Ladakh”, *Energies*, ISSN:1996-1076, DOI: <https://doi.org/10.3390/en15239126>, 15 (23), 9126, Dec 2022. [**SCIE; I.F. 3.252**]. [**Q3**]
- Shilpa Sambhi, Himanshu Sharma, **Pankaj Kumar**, Georgios Fotis, Vasiliki Vita, Lambros Ekonomou, “Techno-economic Optimization of an Off-grid Hybrid Power Generation for SRM IST, Delhi-NCR Campus”, *Energies*, ISSN:1996-1076, DOI: <https://doi.org/10.3390/en15217880>, 15, 7880, Oct 2022. [**SCIE; I.F. 3.252**]. [**Q3**]

- **Pankaj Kumar**, Nitai Pal, Himanshu Sharma, “Optimization and Techno-economic Analysis of a Solar Photo-voltaic/Biomass/Diesel/Battery Hybrid Off-grid Power Generation System for Rural Remote Electrification in Eastern India”, *Energy, Elsevier*, ISSN:0360-5442, DOI: 10.1016/j.energy.2022.123560, Vol. 247, May 2022. [SCI; I.F. 9]. [Q1]
- **Pankaj Kumar**, Nitai Pal, Himanshu Sharma, “Techno-economic Analysis of Solar Photo-voltaic/diesel Generator Hybrid System using Different Energy Storage Technologies for Isolated Islands of India”, *Journal of Energy Storage, Elsevier*, ISSN:2352-152X, DOI: 10.1016/j.est.2021.102965, Vol. 41, September 2021. [SCIE; I.F. 9.4]. [Q1]
- **Pankaj Kumar**, Mohit Kumar, Nitai Pal, “An Efficient Control Approach of Voltage and Frequency Regulation in an Autonomous Microgrid”, *REVUE ROUMAINE DES SCIENCES TECHNIQUES, Série ÉLECTROTECHNIQUE et ÉNERGÉTIQUE*, ISSN: 0035-4066, Vol. 66, No. 1, pp. 33-39, 2021, [SCIE; I.F. 0.76]. [Q4]
- **Pankaj Kumar**, Nitai Pal and Himanshu Sharma, “Performance analysis and evaluation of 10 kWp solar photovoltaic array for remote islands of Andaman and Nicobar”, *Sustainable Energy Technologies and Assessments, Elsevier*, ISSN: 2213-1388, DOI: 10.1016/j.seta.2020.100889, Vol. 42, October 2020, (SCIE; I.F: 8). [Q2]
- **Pankaj Kumar**, Himanshu Sharma, Nitai Pal, Pradip Kumar Sadhu, “Comparative Assessment and Obstacles in the Advancement of Renewable Energy in India and China”, *Problemy Ekorozwoju – Problems of Sustainable Development*, ISSN: 1895-6912, Vol. 14, No. 2, pp. 191-200, 2019 (SSCI; I.F: 1.177). [Q4]
- **Pankaj Kumar**, Partha Sarothi Sikder, Nitai Pal, “Biomass fuel cell based distributed generation system for Sagar Island”, *Bulletin of the Polish Academy of Sciences – Technical Sciences*, ISSN: 0239-7528, E-ISSN: 2300-1917, DOI: 10.24425/124282, Vol. 66, No. 5, pp. 665–674, 2018 (SCIE; I.F: 1.385). [Q3]
- Himanshu Sharma, **Pankaj Kumar**, Nitai Pal, Pradip Kumar Sadhu, “Problems in the Accomplishment of Solar And Wind Energy in India”, *Problemy Ekorozwoju–Problems of Sustainable Development*, ISSN: 1895-6912, Vol.13, No. 1, pp. 41-48, 2018 (SSCI; I.F: 1.177). [Q4]
- Prakhar Sharma, **Pankaj Kumar**, Himanshu Sharma, Nitai Pal, "Closed Loop Controlled Boost Converter using a PID Controller for Solar Wind Power System Installation", *International Journal of Engineering & Technology*, ISSN: 2227-524X, DOI: 10.14419/ijet.v7i2.8.10420, 7(2.8), pp. 255-260, 2018 (SCOPUS Indexed Journal).
- Himanshu Sharma, Nitai Pal, **Pankaj Kumar**, Ashiwani Yadav, “A Control Strategy of Hybrid Solar-Wind Energy Generation System” – *Archives of Electrical Engineering (AEE)*, ISSN: 1427-4221, e-ISSN: 2300-2506, DOI 10.1515/aee-2017-0018, Vol. 66, No. 2, pp. 241-251, 2017 (ESCI under Thomson Reuters; I.F: 1.7).
- Himanshu Sharma, **Pankaj Kumar**, Jagannath Patra, Nitai Pal, “Performance Analysis of Different PV Topologies with MPPT”, *International Journal of Trend in Scientific Research and Development*, ISSN: 2456-6470, Vol. 1, No.4, 2017, pp. 656-664. (UGC Approved; I.F: 6.005)
- Himanshu Sharma, **Pankaj Kumar**, Jagannath Patra, Nitai Pal, “Effects of Parameter Variations of PV Module based on MATLAB-Simulink Modeling”, *International Journal of Trend in Scientific Research and Development*, ISSN: 2456-6470, Vol. 1, No.4, 2017, pp. 665-671. (UGC Approved; I.F: 6.005)

B.) International Book Published (01 No.):

- Himanshu Sharma, **Pankaj Kumar**, Nitai Pal, “A Control Strategy of Hybrid Solar-Wind Energy Generation System”, ISBN-13: 978-6202017718, Publisher: Lambert Academic Publishing, 2017.

C.) Book Chapter Published (03 Nos.):

- **Pankaj Kumar**, Nitai Pal, Mohit Kumar “Hybrid Operational Deployment of Renewable Energy - A Distribution Generation Approach”, in Book: *Analysis and Applications of Renewable Energy Systems*, Elsevier, 10.1016/B978-0-12-824555-2.00020-4, ISBN: 978-0-12-824555-2, September 2021, pp. 627-643.
- **Pankaj Kumar**, Kumar Avinash Chandra, Sanjay Patel, Nitai Pal, Mohit Kumar, and Himanshu Sharma, “Operational Challenges towards Deployment of Renewable Energy”, in Book: *Renewable Energy- Resource, Challenges and Applications*, Intechopen, DOI: 10.5772/intechopen.81765, ISBN: 978-1-78984-284-5, September 2020, pp. 1-16.
- Himanshu Sharma, **Pankaj Kumar**, “Solar Photovoltaic Powered Automatic Irrigation System for the Agriculture Sector”, in Book: *The internet of Energy A Pragmatic Approach Towards Sustainable Development*, Apple Academic Press, Hard ISBN: 9781774914182, September 2022.

D.) International Conferences Published (03 Nos.)

- Prakhar Sharma, **Pankaj Kumar**, Nitai Pal, “Design and Implementation of Closed Loop Controlled Boost Converter for Solar Power Installation System using Fuzzy Logic Controller”, *IEEE International Conference on Recent Advances on Information Technology (RAIT)*, pp. 1-6, 2018. DOI: 10.1109/RAIT.2018.8389012. [Organized by IIT(ISM) Dhanbad, India].
- Nimish Kumar, Nitai Pal, **Pankaj Kumar**, Aprajita Kumari, “Impact of Different Weight Functions on Particle Swarm Optimization Algorithm to Resolve Economic Load Dispatch Problems”, *IEEE International Conference on Recent Advances on Information Technology (RAIT)*, pp. 423- 427, 2018. DOI: 10.1109/RAIT.2018.8389065. [Organized by IIT(ISM) Dhanbad, India].
- Mohit Kumar, **Pankaj Kumar**, Ashwani Yadav, Nitai Pal, "Fuzzy Gain Scheduling Intelligent Frequency Controller in an AC Microgrid", *IEEE International Conference on Recent Advances on Information Technology (RAIT)*, pp. 237- 242, 2016. DOI: 10.1109/RAIT.2016.7507908. [Organized by IIT(ISM) Dhanbad, India].

E.) National Conference Published (03 Nos.)

- **Pankaj Kumar**, Prakhar Sharma, Nitai Pal, "Performance Analysis of Underground Mine Ventilation System using MATLAB/Simulink", published in the National Conference on *Mining Equipment: New Technologies, Challenges and Applications (MENTCA 2018)* ,2018, pp. 110-112. [Organized by IIT(ISM) Dhanbad, India].
- Himanshu Sharma, **Pankaj Kumar**, Yaduvir Singh, Nitai Pal, “PV Cell Characteristic Variations due to Change in Parameters”, presented in the *National Conference on Renewable Energy Sources for Sustainable Climate (Solaris-2017)*, 2017, pp. 134-141. [Jointly organized by IIT-BHU, Varanasi, India and IIT Delhi, India].
- Nitai Pal, Himanshu Sharma, Shivam Yadav, **Pankaj Kumar**, “A Modeling and Simulation of Photovoltaic Power Generation System for Surface Mine”, published in the National Conference on *Mining Equipment: New Technologies, Challenges and Applications (MENTCA 2015)*, 2015, pp. 358-362. [Organized by IIT(ISM) Dhanbad, India].

Awards and Achievements

- Recipient of the MHRD, Govt of India funded JRF/SRF scholarship during the Ph.D. course at IIT(ISM) Dhanbad, India from August 2016 to Jan 2021, Registration No. – 16DR000159.
- Recipient of the Department of Education, Govt of India funded scholarship during the M.Tech course at IIT(ISM) Dhanbad, India from July 2014 to May 2016, Registration No. – 14MT000475.

- Certification of National Social Scheme (NSS), India.
- Certificate of appreciation for working sincerely on the core committee for the workshop on "Utilization of Solar Energy" jointly organized by Solar Energy Society of India (SESI) and KIIT university Bhubaneswar, India on 13th November 2011.
- Certificate of appreciation for actively participating in World Human Rights Day on 10th December 2011.
- Certification of introductory course in computer application comprising of - LOGO, BASIC, WINDOWS, MS-OFFICE, HTML, C++ and FOXPRO.

Workshops/Seminars/FDPs

- **Seminar in 3rd National conference** on Mining Equipment : New Technologies, Challenges & Applications (MENTCA-2018) based on the paper titled "Performance Analysis of Underground Mine Ventilation System using MATLAB/Simulink" conducted by Department of Mining Machinery, IIT (ISM) Dhanbad, India held on 09-10 February, 2018.
- **Seminar in 4th International conference** on Recent Advances in Information Technology (RAIT-2018) based on the paper titled "Design and Implementation of Closed Loop Controlled Boost Converter for Solar Power Installation System using Fuzzy Logic Controller" conducted by the Department of Computer Science Department, IIT (ISM) Dhanbad, India held on 15-17 March, 2018.
- **Seminar in International conference** on Recent Trends in Computing (ICRTC-2017) based on the paper titled "Closed Loop Controlled Boost Converter using PID Controller for Solar-Wind Power System Installation" conducted by the Department of Computer Science, SRM Institute of Science and Technology, Delhi-NCR Campus, Ghaziabad, Uttar Pradesh, India held on 4th-5th December, 2017.
- **Seminar in National conference** on National Conference on Renewable Energy Sources for Sustainable Climate (Solaris-2017) based on the paper titled " PV Cell Characteristic Variations due to Change in Parameters " conducted by IIT (BHU), IIT Delhi and BERS Delhi, India held on 07th-09th February, 2017.
- **Seminar in 2nd National conference** on Mining Equipment: New Technologies, Challenges & Applications (MENTCA-2015) based on the paper titled "A Modeling and Simulation of Photovoltaic Power Generation System for Surface Mine" conducted by Department of Mining Machinery, IIT (ISM) Dhanbad, India held on 09-10 October, 2015.
- **Seminar-Cum-Workshop** on Energy Conservation- The Alternative to Demand Side Management conducted at the Institution of Engineers, Bhubaneswar, India in 2012.
- **Workshop (GIAN Course)** on “Resilient Power Grid Operation Using Synchrophosor Technology: A Smart Grid Operation Perspective”, conducted by Department of Electrical Engineering, **Delhi Technological University (DTU), Delhi** from 17/12/2019 to 21/12/2019.
- **Short Term Course** on “Recent Trend in Microgrid and its Real Time Implementation using Opal RT (RTM-2019)”, conducted by Department of Electrical Engineering, **National Institute of Technology (NIT), Jamshedpur** from 27/05/2019 to 01/06/2019.
- **Faculty Development Programme (FDP)** on “Advanced Security Analytics and Machine Learning”, conducted by Department of Computer Science and Engineering, **SRM IST, Delhi NCR Campus, Ghaziabad** from 18/04/2022 to 23/04/2022.

Work Experience:

S. N.	Organization/ Institute	Designation	Duration
1.	IIT (ISM) Dhanbad, Jharkhand, India	Junior Research Fellow (JRF)	August 1, 2016 - July 31, 2018
2.	IIT (ISM) Dhanbad, Jharkhand, India	Senior Research Fellow (SRF)	August 1, 2018 - June 14, 2021
3.	SRM IST Delhi-NCR Campus, Ghaziabad, Uttar Pradesh, India	Assistant Professor	October 21, 2021 - Till date

Professional Memberships:

- Life Time Member of Solar Energy Society of India (SESI); Membership No: SM/1175/2011.