



UNIVERSITY OF CALCUTTA FACULTY ACADEMIC PROFILE

Full name of the faculty member: Binoy Kumar Karmakar
Designation: Assistant Professor
Specialization: Power System



Date of Joining the University: 05th December 2019

Contact information:

Electrical Engineering Section, Department of Applied Physics, 92, APC Road, Kolkata-700009, West Bengal, India
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Academic qualifications: B.Tech, M.Tech, Ph.D

Personal Website (If any):

College/ University

Abbreviation of the degree

Jadavpur University	B. Tech. (Electrical Engineering)
Indian Institute of Technology Kharagpur	M. Tech. (Power System)
Indian Institute of Technology Kharagpur	Ph. D. (Solar PV integration)

Awards:

Recipient of **Keshab K Parhi endowment prize** from **IIT-Kharagpur** for best application oriented project by an MTech student for the year 2009 among the Electrical Engineering, Electronics and Communication Engineering, Computer Science and Information Technology departments

Positions held before joining University of Calcutta:

1. Faculty at National Institute of Technology, Jamshedpur (July, 2015 to July 2017)
2. Software Engineer at Powersys Technologies Pvt. Ltd. (June, 2009 to December 2010)

Research interests:

1. Integration of solar PV system with microgrid.
2. Smart energy management.

Subjects undertaken:

Undergraduate level: B.Tech in EE

1. Basic Electrical Engineering
2. Power System-1
3. Electrical Machine
4. Microprocessor and Microcontroller



Post Graduate Level: M.Tech in EE

1. Generalized Theory of Electrical Machine.
2. Power System Analysis

Research Projects (As Scholar):

1. **Development of low cost Wireless Sensor Network for Substation Monitoring:**
Designed, developed and implemented a low cost wireless substation monitoring system at the 232 kV substation of DVC, Burnpur, W.B. . (Funded by **DVC**)
2. **Smart Home Energy Management System:**
Designed and developed "Smart Plug", the tool to convert a home to a smart home. (Funded by **PGCIL** for their smart city project)

Patent/ Copyright:

- i. **B.K.Karmakar**, A.K.Sinha "A system and method for maximizing power generation from solar PV array" Government of India patent Application Number- 1251/KOL/2014, filed on November 27, 2014. Published in Journal No. 35/2016 (Patent filed)
- ii. A.K.Sinha, **B.K.Karmakar**, Puja Kumari, Subir Sen "Smart socket and smart home energy manager" Government of India patent Application Number- 269/KOL/2015, filed on March 11, 2015. Published in Journal No. 45/2017 (Patent filed)

Research Publications:

(A) Journals

1. **B. K. Karmakar** and A. K. Pradhan. "Detection and Classification of Faults in Solar PV Array Using Thevenin Equivalent Resistance." IEEE Journal of Photovoltaics 10, no. 2 (2020): 644-654.
2. **B. K. Karmakar** and G. Karmakar, "A Current Supported PV Array Reconfiguration Technique to Mitigate Partial Shading," in IEEE Transactions on Sustainable Energy, doi: 10.1109/TSTE.2021.3049720.

(B) Conference (Selected):

1. **B.K.Karmakar**, A. K. Pradhan, "Performance analysis of P-V and Q-F droop control strategy in an islanded resistive microgrid during partial shading on photovoltaic plant," in International Conference on Recent Innovations in Electrical, Electronics & Communication Engineering (ICRIEECE), IEEE, 2018.
2. **B.K.Karmakar**, A. K. Pradhan, "Improving PV array output during partial shading using voltage balancing approach," in 5th Uttar Pradesh Section International Conference on Electrical, Electronics and Computer Engineering (UPCON), IEEE, 2018. (**Received best paper award**)
3. **B.K.Karmakar**, A.K.Sinha, "Real-Time Substation Monitoring using Wireless Sensor Module," in 4th International Exhibition & Conference on New Technologies (GRIDTECH), pp.7-11, New Delhi, 3-5 April, 2013.
4. **B.K.Karmakar**, A.K.Sinha, "Improvement in output power during partial shading of solar PV array," in International Conference on Clean Energy, Quebec, Canada, 10-12 Sep. 2012. (ISBN:978-1-77136-042-5)