CURRICULUM VITAE

Name: Dr. Dipankar Debnath
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Tel: +91-03222283094
Nationality: Indian
Updated on 25th Nov 2020

OBJECTIVE:

To work in a challenging atmosphere facilitating ample opportunities for learning and growth

Present Position and Work Experience:

- Assistant Professor (Electrical Engineering, IIT Kharagpur, Oct 2016 to present)
- Assistant Professor (Electrical Engineering, IIT Indore, Jan 2016 to Oct 2016)
- Research Associate (Electrical Engineering, IIT Bombay, July 2015 to Dec 2015)

Current/Completed Projects:

As principal Investigator(PI)

1. Solar Photovoltaic Based Uninterruptible Power Supply Scheme for Semi-urban Areas, **ISIRD, SRIC, IIT Kharagpur**
   - **Status:** Ongoing

As Co-PI

1. Development of Indigenous Electrical Sub-Systems for 3-Wheeler E-Rickshaw along with a Smart Vehicle Control Unit, **Ministry of Electronics and Information Technology [Industry Partners: Brushless motor India, EcoEV, e-addict]**
   - **Status:** Ongoing
2. Opened & Intelligent Plug-in Hybrid Electric Vehicle (PHEV) Technologies for Smart Indian Cities (UAY_I_IITKGP_019) **Ministry of Heavy Industries and Public Enterprises, GoI [Industry Partner: Tata Motors Ltd. Pune, India]**
   - **Status:** Ongoing
3. Development of a Laboratory on Novel Electronics Control and Software for Transport by EV (NECST-EV) **SRIC, IIT KHARAGPUR**
   - **Status:** Completed
4. Testing of Concepts for Detecting Insulation Faults in Vehicle, **Eaton India Innovation Center LLP** (Consultancy Project, Status: partially completed due to COVID pandemic)

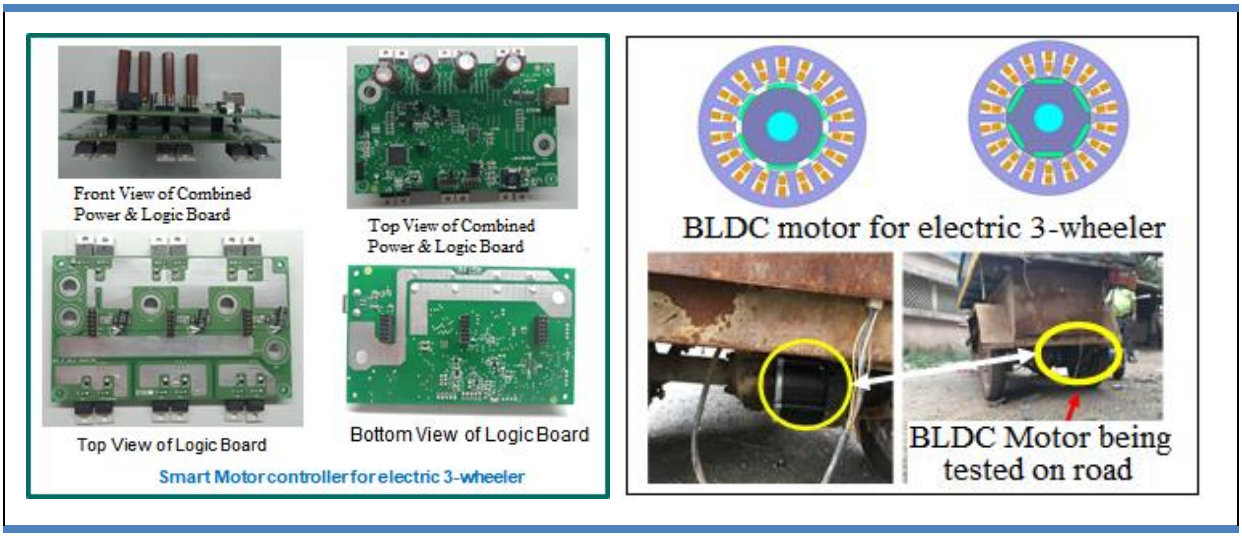
EDUCATIONAL QUALIFICATION:

Degree/Exam	Institute / University	Branch /Specialization	Year of Passing
Ph.D.	IIT Bombay, Mumbai, Maharashtra	Power Electronics & Power system	2015
M. E.	BESU, Shibpur, West Bengal (Now IIEST, Shibpur)	Power Electronics & Drives	2011
B. E.	NIT Agartala, Tripura	Electrical & Electronics Engg.	2009
Higher Secondary	Radha Kishore Institution, Tripura		2005
Matriculation	Dalugaon Class XII School, Tripura		2003

TECHNICAL PROFICIENCY:

Summary of key works:

1. Involved in developement of high power density Motor and Motor Controller for HEV in partnership with Tata Motors Ltd (Details can't be shared due to IP issues)
2. Involved in design and development of Motor, motor controller along with smart supervisory controller for Electric 3-wheeler suitable for Indian conditions (details can't be shared due to IP issues) : Some pictures are provided below :



3. Working on Vehicle-2-Grid (V2G), G2V, V2H schemes facilitating seam-less transitions for Indian EVs.
4. Working on Solar assisted battery charger for e-rickshaw and EVs
5. Developed reduced stage off-grid/stand-alone systems based on solar photovotaic for rural area deployment having battery as energy storage element
6. Developed Grid-connected inverter for solar photovotaic systems
7. Developed Distributed Maximum Power point tracking schemes for extracting maximum power from Solar plants subjected to mismatched operating contions like shading

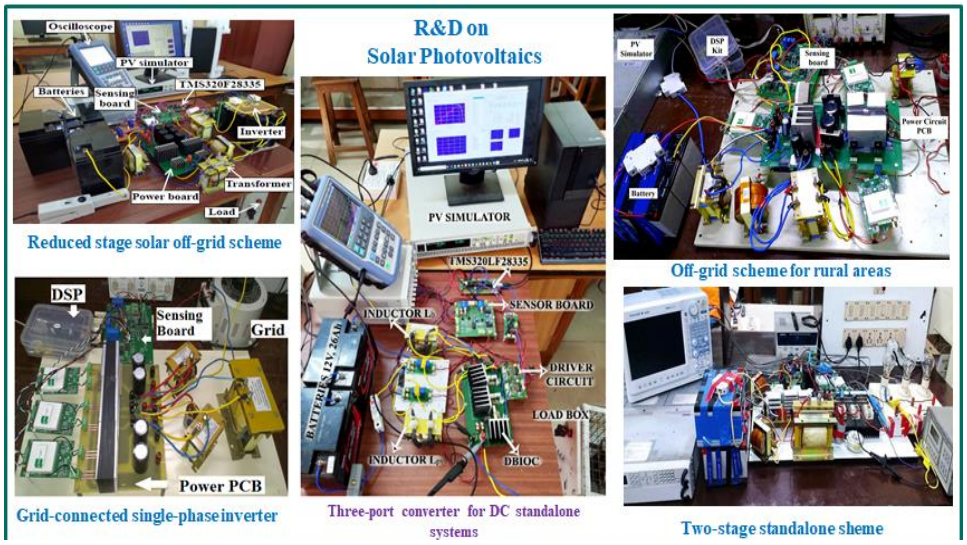


Fig. Hardware set-ups for various works done on solar photovoltaics

PERSONAL INFORMATION:

Name	: Dipankar Debnath	Nationality	: Indian
Father's Name	: Sri Khagendra Kumar Debnath;	Mother's Name	: Smt. Malina Debnath
Sex	: Male	Marital Status	: Married
Hobbies : Playing guitar & drums, reading story books, listening music & singing, playing TT, Football, carom			
Language known: Bengali, English, Hindi			

LIST OF PUBLICATIONS:

Journal Publications:

1. A. Sunny, and D. Debnath, “Two Stage solar Off-Grid System for Catering Household AC Appliances with Reduced Switches” IET Power Electronics, Vol. 13, Issue 16, pp. 3807 – 3817, December 2020
2. S. Dutta, D. Debnath and K. Chatterjee, "A Grid-Connected Single-Phase Transformerless Inverter Controlling Two Solar PV Arrays Operating Under Different Atmospheric Conditions," in *IEEE Transactions on Industrial Electronics*, vol. 65, no. 1, pp. 374-385, Jan. 2018.
3. D. Debnath and K. Chatterjee, "A Two Stage Solar Photovoltaic based Stand Alone Scheme having Battery as Energy Storage Element for Rural Deployment, "*IEEE transactions on Industrial Electronics*, vol. 62, no. 7, pp. 4148- 4157, July 2015
4. D. Debnath and K. Chatterjee, "Neutral Point Clamped Transformer-less Grid Connected Inverter having Voltage Buck-boost Capability for Solar Photovoltaic Systems," *IET Power Electronics*, vol. 9, no. 2, pp. 385-392, Feb 2016
5. D. Debnath, P. De, and K. Chatterjee, "Simple Scheme to Extract Maximum Power from Series Connected PV Modules Experiencing Mismatched Operating Conditions," IET Power Electronics, vol. 9, no. 3, pp. 408-416, March 2016
6. D. Debnath and K. Chatterjee, "Solar Photovoltaic Based Stand Alone Scheme Incorporating a New Boost Inverter," IET Power Electronics, vol. 9, no. 4, pp. 621-630, March 2016
7. D. Debnath and K. Chatterjee, "Maximizing Power Yield in a Transformerless Single Phase Grid Connected Inverter Servicing Two Separate PV Panels," IET Renewable Power Generation, vol. 10, no. 8, pp. 1087-1095, Sep 2016.

Patent Filed:

1. D. Debnath and K. Chatterjee, "Transformer-less grid connected inverter with two separate PV arrays while minimizing leakage current," Indian patent, Appl. No. 1873/MUM/2015 (filed on 12-5-2015)(Yet to be approved)

Conference Publications:

1. I. Haldar, and D. Debnath, “Design and Development of Two Solar PV panel based Battery Charger for Solar Assisted E-rickshaw” accepted for publication in IEEE International Conference on Power Electronics and Energy(ICPEE) to be held during 2-3 January 2021 at KIIT Bhubaneswar, India
2. S. Nagarjun, D. Debnath and C. Chakraborty, "Synthesis of Three-Port Converter from existing dc-dc converters for PV based dc stand-alone system," IEEE International Conference on Power Electronics, Smart Grid and Renewable Energy (PESGRE2020), pp. 1-6, Cochin, India, 2020,
3. D. Debnath and K. Chatterjee, "A buck-boost integrated full bridge inverter for solar photovoltaic based stand alone system," in Proc. IEEE Photovoltaic Specialists conf. (PVSC), pp: 2867- 2872, June 2013.
4. D. Debnath and K. Chatterjee, "Transformer coupled multi-input two stage stand alone solar photovoltaic scheme for rural areas," in Proc. IEEE Indus. Electron. Society Conf. (IECON), pp. 7028- 7033, Nov. 2013.
5. D. Debnath and K. Chatterjee, "A Transformerless Grid Connected Inverter for Solar Photovoltaic Systems Having Capability to Negotiate DC Loads," in Proc. IEEE Int. Conf. on Indus. Tech. (ICIT), pp. 2835- 2840, March, 2015.
6. S. Nagarjun and D. Debnath, “Buck-boost buck ccm-dcm converter for pv based dc standalone system”, IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES), Chennai, India, pp. 1-6, 2018.
7. A. Mitra, and D. Debnath, “A Transformerless Doubly Boost DC-DC Converter for grid connetced solar photovoltaic systems”, 8th IEEE India International Conference on Power Electronics (IICPE), JAIPUR, India, pp. 1-6, 2018.

8. S. N. Gosh and D. Debnath, "An Approach to Reduce the Number of Sensors for MPPT of Series Connected Solar PV Modules Facing Mismatched Operating Conditions", 8th IEEE India International Conference on Power Electronics (IICPE), JAIPUR, India, pp. 1-6, 2018.

Courses offered at IIT Kharagpur and IIT Indore [As an Assistant Professor]

Electric Vehicle (4 times), Power Electronics (2 times), Electric Drives (4 times), Networks and systems (1 time), Electrical Machines Lab (3 times), Electrical Technology lab (6 times), Power Electronics Lab (3 times)

ADDITIONAL INFORMATIONS

Award and achievements:

- Excellence in PhD thesis work, IIT Bombay, August, 2016
- Five consecutive inclusions in 'Top Teaching Feedback' list of IIT Kharagpur.
- Cleared GATE in two branches (EC in 2009 and EE in 2011)
- Selected as Best TA (teaching Assistant) during PhD (awarded by EE dept, IIT Bombay)

Other Professional Contributions:

- Chair for the Student Branch Activities for IEEE Kharagpur Section
- Faculty adviser for the Electrical Engineering Society, IIT Kharagpur
- Organizing special session at IEEE ICPEE conference to be held during 2-3 January 2021 at KIIT, Bhubaneswar, India
- **Technical Program Committee Member** for: (a) TENSYMP-The IEEE Region 10 Symposium, 7-9 June 2019, Kolkata, India, (b) 14th IEEE International Conference on Industrial and Information Systems (ICIIS), 18-20 Dec 2019, Peradeniya, Sri Lanka
- **Served as Meta-Reviewer in** IEEE ICPEE conference to be held during 2-3 January 2021 at KIIT, Bhubaneswar, India
- Served/serving as **reviewer** in following journals and conferences:
  - **Journals:** IEEE transaction on Industrial Electronics, IEEE Transactions on Circuits and Systems IET Power Electronics, IEEE Trans. on Sustainable Energy, Electric Power Components and Systems
  - **IEEE Conferences**: ICIT , APEC, PEDES, IECON, INDICON, ISIE, IICPE
  - **National Conferences**: National Power System Conference, National Power Electronics Conference

Membership of Professional Bodies:

- Member, IEEE
- Member in following societies of IEEE: IES, IAS, PES, PELS

Invited talks (on various topics relevant to EVs and solar photovoltaics/renewables)

- Assam Engineering college (Nov 2018), Mizoram University (Jan 2019), KIIT, Bhubaneswar (Feb 19), BIT Mesra (May 2019), NIT Silchar (July 19 and Sep 2020), VRSEC, AP, India (June 2020), LNJPIT Chapra (Aug 2020), Manipal University, Jaipur (Sep, 2020), NIT Meghalaya (Sep 2020), NIT Karnataka, Surathkal (Sep 2020), IIITDM Kancheepuram (Oct 2020), Scheduled: BVRIT Telangana (Nov and Dec 2020), IFET College of Engineering (Dec 2020), RVCE,Bangalore (Dec 2020).

DECLARATION:

I hereby declare that all information furnished above are true, complete and correct to the best of my knowledge and belief.

Date: 25/11/2020
Place: IIT Kharagpur

Dr. DIPANKAR DEBNATH