

Curriculum Vitae

Name: Dr. Suman Maiti

Designation: Associate Professor
Department of Electrical Engineering
Indian Institute of Technology Kharagpur,
721302, India



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Educational Qualification:

Sl No.	Degree	Year	Subject	Institution/University & Location
1	Bachelor of Engineering	2002	Electrical Engineering	Jalpaiguri Govt. Enggineering College, Jalpaiguri
2	Master of Engineering	2004	Electrical Engineering	Bengal Engineering and Science University, Shibpur
3	Ph.D.	2009	Electrical Engineering	IIT Kharagpur, Kharagpur

Professional Experience:

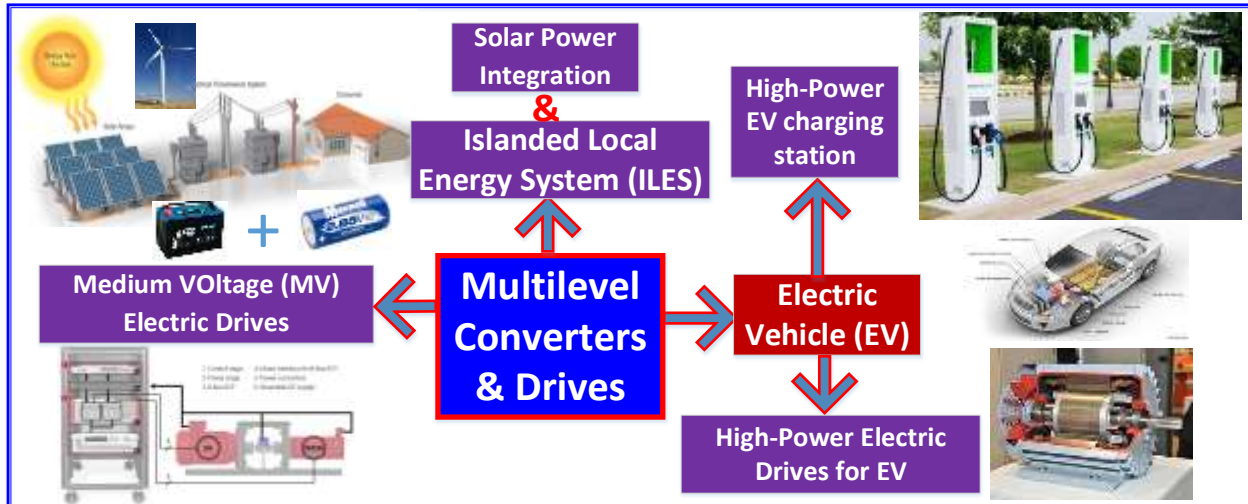
Sl No.	Organization	Position	From (Date)	To (date)	Area of work
1	ABB Ltd. (R&D)	Associate Scientist	2009	2014	Modular Multilevel Converters
2	ABB Ltd. (R&D)	Sr. Scientist	2014	2014	Modular Multilevel Converters
3	IIT Kharagpur, EE	Assistant Professor	2014	Dec 2023	Machine Drives, Multilevel Converters
4	IIT Kharagpur, EE	Associate Professor	Dec 2023	Till date	Machine Drives, Multilevel Converters

Area of Research: Modular Multilevel converters and Electric Drives

Modular Multilevel converters and their applications to the following areas:

- Electric Drives
- On-grid/Off-grid Solar Inverters
- EV Charging Station

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Awards and Achievements:

- **Faculty Excellence Award** 2025 in Associate Professor category
- IEEE-IDC (Industrial Drives Committee) 2nd Best **Transaction Paper Award** for 2022
- **Coordinator** of EU-India RE-EMPOWERED project (2021-2024) sponsored by DST
- Best Paper Presentation award in IEEE conference, SEFET 2025, held in Jaipur, India
- **Third Best Prize Paper** awarded by the IEEE-IES Electrical Machine Technical Committee, USA, 2009.
- **Best paper presentation** award in the 2nd National Power Electronics Conference, NPEC-2005.
- **Associate Editor** (from 2020 – to date), IEEE Access, Power and Energy Section.

Publications:

Total Citations: 1928

Total Citations - 1975

Book/Book-chapter

- [1] Anil Bharadwaj, Suman Maiti, Nirmalya Dhal, S. Chakraborty, Sreekesh K. Pillai, "Chapter 10 - E-STATCOM (energy storage + STATCOM): a solution to integrate large-scale wind farms into the grid at medium and high power levels" of the book entitled "**Power quality in modern power systems,**" Pages: 283-310, Publication year: 2021, Publisher: Academic Press, DOI: <https://doi.org/10.1016/B978-0-12-823346-7.00007-4>
- [2] Anil Bharadwaj and Suman Maiti, "Chapter-18: Multilevel Converter-based STATCOM with Hybrid Storage System," of the book entitled "Emerging Trends in Energy Storage Systems and Industrial Applications" pages: 521 – 534, 2023, Elsevier, DOI: <https://doi.org/10.1016/B978-0-323-90521-3.00012-0>.

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Patents:

- [1] Voltage source converter and associated method : Filed (Ref : PCT/EP2014/069532)
- [2] Method and device for damping voltage harmonics in multilevel power converter: Filed (Ref : PCT/EP2015/057244)
- [3] Method and device for damping voltage harmonics in multilevel power converter: Filed (Ref : PCT/EP2015/060873)
- [4] A. Bharadwaj and S. Maiti, "Modular Multilevel STATCOM with Hybrid Energy Storage System", Filed, Indian Patent, Appl. No. 201931004757, Year-2018.
- [5] A. Bharadwaj and S. Maiti, "Integration of Hybrid Energy Storage System using Modular Multilevel Converter for High Power Applications," Appl. No. 201931015648, Year 2019.
- [6] Sreekesh K., Suman Maiti, "A Multilevel Converter for Medium Voltage Applications," Patent ID NO – 21740.
- [7] Shuvam Chakraborty, Suman Maiti, "A Wave-shaper based modular multilevel Converter with bi-directional power flow capability for Medium Voltage Open-end Induction Motor Drives" Patent ID -

Journals:

- [1] Sreekesh K, and Suman Maiti, "ANPC-Waveshaper based Medium Voltage STATCOM with Natural Capacitor Voltage Balancing during Negative-Sequence Current Compensation," in *IEEE Transactions on Power Electronics*, doi: 10.1109/TPEL.2024.3455108.
- [2] S. Karpana, S. Maiti and C. Chakraborty, "A Soft-switched Multi-port Converter for Distributed PV Application with Energy Storage," in *IEEE Transactions on Power Electronics*, Accepted for publication.
- [3] Karpana Sivakrishna, Efstratios Batzelis, Georgios Kampitsis, **Suman Maiti**, Chandan Chakraborty, "A Soft-Switched Multi-Port Converter for PV/Supercapacitors Hybrid Systems Enabling Frequency Response Services," in *IEEE Transactions on Industry Applications*, PP 1-15, Jan 2024, 10.1109/TIA.2024.3351628.
- [4] Shuvam Chakraborty, **Suman Maiti**, "Control of a Waveshaper-MMC with Thyristor-based Front-end Converter for Open-end Winding Variable Speed Medium Voltage Induction Motor Drive," in *IEEE Transactions on Industry Applications*, vol. 58, no. 5, pp. 6203-6216, Sept.-Oct. 2022, doi: 10.1109/TIA.2022.3180041 – **Received IEEE-IDC 2nd best Transaction Prize Paper Award.**
- [5] Jeemut Bahan Sangiri, Supratik Bhowmick, **Suman Maiti**, Chandan Chakraborty, "A Coordination Control between Battery and Supercapacitor Energy Storage Systems to Segregate Power for On-grid Application," *Journal of Power Electronics and Drives (PEAD)*, Vol-7, Issue-1, Pages 227 - 245, 2022, <https://doi.org/10.2478/pead-2022-0018>.
- [6] Jeemut Bahan Sangiri, Arghya Sardar, Sudipto Ghosh, **Suman Maiti**, Chandan Chakraborty, "A Composite Electrochemical-Thermal Model for the Determination of Thermal Profiles of Lithium-ion Cell for Electric Vehicle Application" *Journal of Electrical Engineering, Springer*, **104**, 3733–3752 (2022), <https://doi.org/10.1007/s00202-022-01575-8>.
- [7] Jeemut Bahan Sangiri, Tanmai Kulshreshtha, Sudipto Ghosh, **Suman Maiti**, Chandan Chakraborty, "A novel methodology to estimate the state-of-health and remaining-useful-life of a Li-ion battery using discrete Fourier transformation," *Journal of Energy Storage*, Volume 46, 2022, 103849, ISSN 2352-152X, <https://doi.org/10.1016/j.est.2021.103849>.

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- [8] S. Karpana, E. Batzelis, S. Maiti, C. Chakraborty, "PV-Supercapacitor Cascaded Topology for Primary Frequency Responses and Dynamic Inertia Emulation," *Energies*, vol. 14, pp. 8347, 2021.
- [9] Supratik Bhowmick, Debranjana Mukherjee, **Suman Maiti**, Chandan Chakraborty, "Grid-Tied Neutral Point Clamped based Centralised Photovoltaic Inverter with Improved DC Link Voltage Balancing and Harmonic Minimisation Control," *Power Electronics and Drives*, Volume 6 (41), 2021, DOI: 10.2478/pead-2021-0011.
- [10] U Vuyyuru, **S Maiti**, C Chakraborty, E Batzelis, "Universal Active Power Control Converter for DC Microgrids with Common Energy Storage," in *IEEE Open Journal of Industry Applications*, vol. 2, no. 1, pp. 21-35, Mar. 2021.
- [11] T. S. Basu, **S. Maiti** and C. Chakraborty, "Performance Improvement of PV-Fed Hybrid Modular Multilevel Converter Under Partial Shading Condition," in *IEEE Transactions on Industrial Electronics*, vol. 68, no. 10, pp. 9652-9664, Oct. 2021, doi: 10.1109/TIE.2020.3028819.
- [12] Onyema S. Nduka, Linash P Kunjumammed, Bikash C. Pal, Ankur Majumdar, Yue Yu, **Suman Maiti**, and Ali R. Ahmadi, "Field Trial of Coordinated Control of PV and Energy Storage Units and Analysis of Power Quality Measurements," in *IEEE Access*, vol. 8, pp. 1962-1974, 2020.
- [13] Tuhin S. Basu and **Suman Maiti**, "A Hybrid Modular Multilevel Converter for Solar Power Integration," in *IEEE Transactions on Industry Applications*, vol. 55, no. 5, pp. 5166-5177, Sept.-Oct. 2019.
- [14] Umamaheswar Rao V., **Suman Maiti**, Chandan Chakraborty and Bikash Pal, "Series Voltage Regulator for DC Microgrid" *IEEE Transaction on Sustainable Energy*, vol. 10, no. 1, pp. 127-136, Jan. 2019.
- [15] Umamaheswar Rao V., **Suman Maiti**, Chandan Chakraborty, "Load Flow Control in DC microgrids," *IEEE Transaction on Smart Grids*, vol. 10, no. 5, pp. 5712-5723, Sept. 2019.
- [16] Anil Bharadwaj Chivukula and **Suman Maiti**, "Analysis and control of modular multilevel converter-based E-STATCOM to integrate large wind farms with the grid," in *IET Generation, Transmission & Distribution*, vol. 13, no. 20, pp. 4604-4616, 22 10 2019.
- [17] Anil Bharadwaj, **Suman Maiti**, N. Dhal, S. Chakraborty, "Control and sizing of modular multilevel converter-based STATCOM with hybrid energy storage system for large-scale integration of wind farms with the grid," *Journal of Electrical Engineering*, Springer Link, 101, 743-757 (2019).
- [18] Anil Bharadwaj, **Suman Maiti**, "Control and state of charge balancing algorithm for modular multilevel STATCOM with distributed ultracapacitor-based energy storage system at the DC link," *International Transaction of Electrical Energy Systems*, Wiley Publisher, vol. 30, issue. 4, April 2020.
- [19] **Suman Maiti**, Vimlesh Verma, Chandan Chakraborty and Yoichi Hori, "An Adaptive Speed Sensorless Induction Motor Drive with Artificial Neural Network for Stability Enhancement" *IEEE Transaction on Industrial Informatics*, vol. 8, no. 4, pp 757-766, 2012.
- [20] **Suman Maiti** , Chandan Chakraborty, Yoichi Hori and Minh-C Ta, "Model Reference Adaptive controller based rotor resistance and speed estimation techniques for vector controlled induction motor drives utilizing reactive power," *IEEE Trans on Industrial Electronics*, vol. 55, No. 2, pp. 594-601, Feb. 2008.
- [21] A. V. Ravi Teja, Chandan Chakraborty, **Suman Maiti** and Yoichi Hori, "A New Model Reference Adaptive Controller for Four Quadrant Vector Controlled Induction Motor Drives," *IEEE Trans on Industrial Electronics*, vol. 59, No. 10, pp. 3757-3767, Oct. 2012.
- [22] Vimlesh Verma, Chandan Chakraborty, **Suman Maiti** and Yoichi Hori, "Speed sensorless vector controlled induction motor drive using single current sensor," *IEEE Transaction on Energy Conversion*, vol. 28, No. 4, pp. 938-950, Dec. 2013.
- [23] **Suman Maiti** and Chandan Chakraborty and Sabyasachi Sengupta, "Simulation Studies on MRAC-Based Speed Estimation Technique for the Vector Controlled Permanent Magnet Synchronous Motor Drive" *Elsevier Journal of Simulation Modeling Practice and Theory*, Elsevier, vol. 16, No. 4, pp. 585-596, 2009.

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- [24] **Suman maiti** and Chandan Chakraborty, “A New Instantaneous Reactive Power Based MRAS for Sensorless Induction Motor Drive”, Elsevier Journal of *Simulation Modelling Practice and Theory, Elsevier*, vol. 18, pp. 1314–1326, 2010.
- [25] **Suman Maiti**, Vimlesh Verma, and Chandan Chakraborty, “Sensorless Control of Grid-connected Doubly-fed Slip-Ring Induction Motor Drive,” Journal of *Simulation Modelling Practice and Theory, Elsevier*, vol. 18 pp. 984–997, 2010.
- [26] **Suman Maiti** and Chandan Chakraborty, “An alternative adaptation mechanism for sensorless induction motor drive,” Journal of *Electric power Components and Systems, Taylor and Francis*, vol. 38, pp. 710–736, 2010.
- [27] Chandan Chakraborty and **Suman Maiti**, “Performance of a Reactive Power Based Adaptive Estimation of Inverse Rotor Time Constant for Vector Controlled Induction Motor Drives” *International Journal of Automation and Control, Inderscience Publisher*, vol. 3, No.1, pp. 41-55, 2009.
- [28] **Suman Maiti** and Chandan Chakraborty, “An adaptive stator resistance estimation technique for sensorless permanent magnet synchronous motor drive,” *International Journal of Automation and Control, Inderscience Publisher*, Vol. 3, Nos. 2/3, pp. 189-201, 2009.

Conferences:

- [1] Sivakrishna K., Stratis Batzelis, Suman Maiti, and Chandan Chakraborty, “A complete frequency response service scheme using PV-supercapacitor cascade topology,” *IEEE Industrial Electronics Society Annual On-Line Conference (ONCON-2022)*. – **Received best paper award**
- [2] Sivakrishna Karpana, Efstratios Batzelis, Suman Maiti, and Chandan Chakraborty, "PV-Supercapacitor Tri-port Converter for Frequency Response Services," *2022 IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES)*, Jaipur, India. 14 - 17 Dec 2022.
- [3] A. Mani, K. Sivakrishna, and S. Maiti, “A novel hybrid global MPPT technique for grid-connected PV systems,” in *2021 National Power Electronics Conference (NPEC)*, IEEE, 2021, pp. 1–6.
- [4] S. Karpana, S. Maiti and C. Chakraborty, "Differential Power-processing with Built-in Energy Storage for Multi-String Grid Interactive PV System," *2020 IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES)*, 16-19 Dec. 2020, Jaipur, India, pp. 1-6, doi: 10.1109/PEDES49360.2020.9379496.
- [5] S. Chakraborty and S. Maiti, "Control of a Waveshaper-MMC with Thyristor-based Front-end Converter for Open-end Winding Variable Speed Medium Voltage Induction Motor Drive," *2020 IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES)*, 2020, pp. 1-6, doi: 10.1109/PEDES49360.2020.9379436.
- [6] S. Karpana, E. Batzelis and S. Maiti, "Modeling and Analysis of Zig-Zag Boost Converter for Battery Charging Applications," *2020 IEEE 9th Power India International Conference (PIICON)*, 28 Feb-1st Mar. 2020, Sonapat, India, pp. 1-6, doi: 10.1109/PIICON49524.2020.9112897.
- [7] A. Bharadwaj.Ch, S. Maiti, K. S. Krishna, N. Dhal, S. Chakraborty and S. K. Pillai, "Modular Multilevel Converter based STATCOM with Hybrid Energy Storage System Considering Unbalanced Loading Condition," *2020 IEEE 9th Power India International Conference (PIICON)*, 2020, pp. 1-6, doi: 10.1109/PIICON49524.2020.9113023.
- [8] Shuvam Chakraborty, Suman Maiti, Anil Bharadwaj.Ch, “A Novel AC/AC Modular Multilevel Converter for Medium Voltage Variable Frequency Vector Controlled Induction Motor Drives,” *IEEE International Conference on PESGRE 2020*, Kochi, Kerala, 2020.
- [9] C. Suthar, J. B. Sangiri, S. Maiti and C. Chakraborty, "A Pulse density modulated LLC resonant converter based battery charger for HEV/PHEV application," *2019 IEEE International Conference on Electrical, Computer and Communication Technologies (ICECCT)*, Coimbatore, India, 2019, pp. 1-7.

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- [10] S Chakraborty, Suman Maiti , “A Novel Modular Multilevel Converter for Medium Voltage Variable Speed Induction Motor Drives,” IEEE International Conference on IECON 2019, Lisbon, Portugal, 10.1109/IECON.2019.8927530, pp-6049, 2019.
- [11] S. K Pillai and S. Maiti, "A New Multilevel Converter Configuration with Reduced Component Count for Medium Voltage STATCOM Application," 2019 National Power Electronics Conference (NPEC), Tiruchirappalli, India, 2019, pp. 1-6.
- [12] Uma Maheswar Rao V., Suman Maiti and Chandan Chakraborty, “Universal Active Power Flow Controller with Common Energy Storage Support for DC Microgrids,” IEEE International Conference on IECON 2019, Lisbon, Portugal.
- [13] A. Bharadwaj, S. Maiti, N. Dhal and S. Chakraborty, "Control of Two Level Converter based STATCOM with Battery and Ultracapacitor," IEEE Proc. of 2019 National Power Electronics Conference (NPEC), Tiruchirappalli, India, 2019, pp. 1-6.
- [14] S. K. Pillai and S. Maiti, "A Single Phase Hybrid Modular Multilevel Converter Based STATCOM with Reduced Lower Order Harmonics for Railway Application," *2019 3rd International Conference on Recent Developments in Control, Automation & Power Engineering (RDCAPE)*, 2019, pp. 494-499, doi: 10.1109/RDCAPE47089.2019.8979034.
- [15] S. Chakraborty and S. Maiti, "A Novel Modular Multilevel Converter for Medium Voltage Variable Speed Induction Motor Drives," IECON 2019 - 45th Annual Conference of the IEEE Industrial Electronics Society, Lisbon, Portugal, 2019, pp. 6049-6054.
- [16] A. Bharadwaj.Ch, S. Maiti and N. Dhal, "Control and State of Charge Balancing Technique of a Modular Multilevel STATCOM Integrated with Battery Energy Storage System," 2019 IEEE Students Conference on Engineering and Systems (SCES), Allahabad, India, 2019, pp. 1-6.
- [17] A. Bharadwaj.Ch, S. Maiti and N. Dhal, "Modular Multilevel Converter Based STATCOM with Battery and Ultracapacitor for AC Grid Applications," 2019 IEEE 5th International Conference for Convergence in Technology (I2CT), Bombay, India, 2019, pp. 1-7.
- [18] C. Anil Bharadwaj, S. Maiti and N. Dhal, "Modular Multilevel E-STATCOM Using Supercapacitor Based Energy Storage System," 2018 2nd International Conference on Power, Energy and Environment: Towards Smart Technology (ICEPE), Shillong, India, 2018, pp. 1-6.
- [19] C. A. Bharadwaj and S. Maiti, "Modular multilevel converter based hybrid energy storage system," 2017 IEEE PES Asia-Pacific Power and Energy Engineering Conference (APPEEC), Bangalore, 2017, pp. 1-6.
- [20] A. Bharadwaj Ch. and S. Maiti, "Modular multilevel STATCOM with energy storage," 2016 11th International Conference on Industrial and Information Systems (ICIIS), Roorkee, 2016, pp. 730-735.
- [21] A. B. Ch. and S. Maiti, "Modular multilevel E-STATCOM considering distributed energy storage at the dc link," 2016 IEEE 7th Power India International Conference (PIICON), Bikaner, 2016, pp. 1-6.
- [22] P. Jana, S. Chattopadhyay, S. Maiti, P. Bajpai and C. Chakraborty, "Hybrid modulation technique for binary asymmetrical cascaded multilevel inverter for PV application," 2016 IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES), Trivandrum, 2016, pp. 1-6.
- [23] T. S. Basu, S. Maiti and C. Chakraborty, "A hybrid modular multilevel converter for solar power integration," 2016 IEEE 7th Power India International Conference (PIICON), Bikaner, 2016, pp. 1-6.
- [24] Akhil C and S. Maiti, "Power tapping from a current-source HVDC link using Modular Multilevel Converter," 2016 IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES), Trivandrum, 2016, pp. 1-5.
- [25] Akhil C and S. Maiti, "Power tapping from a current-source HVDC link using Modular Multilevel Converter," 2016 IEEE International Conference on Power Electronics, Drives and Energy Systems (PEDES), Trivandrum, 2016, pp. 1-5.
- [26] Umamaheswararao V, J. George, S. Maiti and C. Chakraborty, "Dynamic voltage compensation using Series Voltage Regulator for DC-microgrid," IECON 2016 - 42nd Annual Conference of the IEEE Industrial Electronics Society, Florence, 2016, pp. 2271-2276.

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- [27] Tuhin S. Basu, Suman Maiti and Chandan Chakraborty, "A New Dual Converter Based Solar PV System with Maximum Power Point Tracking Capability," [24th IEEE International Symposium on Industrial Electronics \(ISIE\)](#), 3-5 June 2015, pp. 172-177, Buzios, Brazil.
- [28] T. U. Jonsson, P. Lundberg, S. Maiti and Y. J. Hafner, "Converter Technologies and Functional Requirements for Reliable and Economical HVDC Grid Design," 2013 CIGRÉ Canada Conference, Calgary, Alberta, September 9 - 11, 2013.
- [29] C. Chakraborty, A. V. R. Teja, S. Maiti and Y. Hori, "A New $V \times I$ based adaptive speed sensorless four quadrant vector controlled induction motor drive," The 2010 International Power Electronics Conference - ECCE ASIA -, Sapporo, 2010, pp. 3041-3048.
- [30] S. Maiti and C. Chakraborty, "Experimental validation of very-low and zero speed operation of a flux-eliminated adaptive estimator for vector controlled IM drive," 2009 IEEE International Conference on Industrial Technology, Gippsland, VIC, 2009, pp. 1-6.
- [31] Suman Maiti and Chandan Chakraborty, "MRAS-based Speed estimation Techniques for Vector Controlled Double-Inverter-fed Slip-ring Induction Motor Drive" Conf. Proc. of IEEE-IECON 2008. Nov. 10-13, 2008, pp. 1275 - 1280 , Orlando, USA.
- [32] Suman Maiti, Chandan Chakraborty and Sabyasachi Sengupta, "Adaptive Estimation of Speed and Rotor Time Constant for the Vector Controlled Induction Motor Drive Using Reactive Power," Conf. Proc. of IECON 2007, Taipei, Taiwan, Nov. 5-8, 2007, pp. 286-291.
- [33] Suman Maiti, and Chandan Chakraborty, "Reactive Power Based Speed Sensorless Controller for Permanent Magnet Synchronous Motor Drive," Conf. Proc. of IEEE-ICIT-2006, Mumbai, India, pp. 247-252.
- [34] Suman Maiti and Chandan Chakraborty, "A New Rotor Resistance Estimation Technique for Vector Controlled Induction Motor Drive," Conf. Proc. NPEC'05, December 22-24, 2005, Kharagpur, India, pp. 293-298.
- [35] Suman Maiti, Chandan Chakraborty and Sabyasachi Sengupta, "A Reactive Power Based Model Reference Adaptive Controller for Speed Estimation of Induction Motor Drives,," Conf. Proc. of NPEC'05, December 22-24, 2005, Kharagpur, India, pp. 53-58.
- [36] Mainak Sengupta, Suman Maiti, and Sabyasachi Sengupta., "Design Fabrication and Testing of Power Converter and its Associated Circuits for a 4KW SRM Drive" Conf. Proc. of IEEE - INDICON 2004, Kharagpur, India, pp. 581-585.
- [37] Mainak Sengupta and Suman Maiti, "Design fabrication and Running of a Switched Reluctance Motor Drive without Shaft Mounted Position Encoder" Conf. Proc. of India International Conference on Power Electronics (IICPE) 2004, Mumbai, India, pp. 79-83.

Sponsored R&D projects completed/Ongoing :

Sl. No.	Title of the Project	Funding Agency	Responsibility	Project Amount	Start date	End date
1.	Energy Storage Integration at High Power Level	DST	PI	Rs 65 Lacs	27/06/2017	Completion: 15-01-2021
2.	Modular Multilevel Converter-fed Medium Voltage Variable Frequency Induction Motor Drives	DST	PI	Rs. 47 Lacs	27/03/2017	Completion: 15-09-2020
3.	Transformerless Solar power integration with the grid at high power level	SRIC, IIT Kharagpur	PI	28 Lacs	28/12/2015	Completion: 27-12-2018





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4.	RENEWABLE ENERGY EMPOWERING EUROPEAN AND INDIAN COMMUNITIES (RE-EMPOWERED) – An EU-India consortium	DST	Lead-PI	1033 Lakhs (For IITKGP: 444 Lakhs)	01-07-2021	Completion: 31-12-2025
5.	CAPACITY BUILDING FOR SUSTAINABLE RENEWABLE ENERGY MANAGEMENT IN SC COMMUNITIES OF WEST BENGALS GHORAMARA IN SUDERBAN AREA AND ST COMMUNITY OF ODISHAS RANIPADA VILLAGE IN KEONJHAR DISTRICT	DST	PI	11 Lakhs	18-10-2024	17-03-2026
6.	DEVELOPMENT OF HIGH-POWER GRID-FRIENDLY CONDUCTIVE AND STATIC WIRELESS CHARGERS FOR ELECTRIC VEHICLES	DST	PI	18.36 Crores	30-05-2025	29-05-2028
7.	UK-India Clean Energy Research Institute (UKICERI)	DST	Co-PI (Lead of WP2.2 on string inverte)	1247 Lacs for IIT Kharagpur	05-04-2017	Completion: 04-09-2022
8.	Development of a cost effective left ventricular assist device (LVAD) with centrifugal mechanical circulator, drive system and associated control	MHRD	Co-PI, (Responsible for Pump drive system)	304 Lacs	08-02-2017	Completion: 31-03-2022
9.	Reliable and Efficient System for Community Energy Solution (RESCUES) (a collaborative project involving IIT Kharagpur, IIT Delhi, IIT Madras, VNIT Nagpur and DTU and three UK side institutions)	DST (in collaboration with RC UK)	Co-PI (Responsible for the development of solar converter)	539 Lacs (for IIT Kharagpur)	Commencement: 17-11-2014	Completion: 29-06-2019
10.	DESIGN AND DEVELOPMENT OF OSCILLATORY AQUIFER PUMPING TESTS SYSTEM AT LABORATORY SCALE WITH IMPLICATION TO FIELD SCALE	SERB, DST	Co-PI (Responsible for the development of pump drive system)	32.5 Lakhs	Commencement: 06-03-2020	Completion: 05-03-2023
11.	Opened and Integrated Plug-in hybrid electric vehicle technologies for smart Indian cities	MHRD	Co-PI (Responsible for on-board charger development)	1989 Lacs	13-10-2016	Completion: 30-11-2022




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12.	CENTRE OF EXCELLENCE ON ENERGY AWARE URBAN INFRASTRUCTURE	SERB, DST, India	Co-PI (Responsible for power electronic converter for BESS integration)	1750 Lakhs	Commencement: 11-03-2022	Completion: 10-03-2027
13.	HYBRID SODIUM - ION CELL/SUPER CAPACITOR PACKS FOR LIGHT ELECTRIC VEHICLES	MHRD, India	Co-PI (Responsible for SoH estimation of Li-Ion battery)	318 Lakhs	Commencement: 08-02-2017	Completion: 31-03-2022

PhD Supervision:

	<p>Name: CHIVUKULA ANIL BHARADWAJ</p> <p>Research Area: Modular Multilevel Converter (MMC) based E-STATCOM for active and reactive power support</p> <p>Present status: Completed in 2022</p>
	<p>Name: Umamaheswar rao Vurru</p> <p>Research Area: Load flow controller for DC Microgrid</p> <p>Present status: Completed in 2021</p>
	<p>Name: Tuhin S. Basu</p> <p>Research Area: Multilevel Converters for Solar Power Integration</p> <p>Present status: Awarded the degree in September 2024</p>
	<p>Name: Jeemut Bahan Sangiri</p> <p>Research Area: Charging of EV assessing health of the Batteries</p> <p>Present status: Awarded the degree in May 2025</p>

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	<p>Name: Sivakrishna K Research Area: Renewable energy integration and microgrid Date of joining: January, 2018 Present status: Awarded the degree in July 2025</p>
	<p>Name: K. Sreekesh. Research Area: Medium Voltage STATCOM using Multilevel Converters Supervisor: Dr. Suman Maiti Present status: Awarded the degree in September 2025</p>
	<p>Name: Shuvam Chakraborty Research Area: Medium Voltage Induction Motor Drive Date of joining: January, 2018 Present status: Synopsis was delivered.</p>
	<p>Name: Sagar Kumar Das Research Area: Multi-phase Brushless and Magnetless Synchronous Machine Date of joining: January, 2019 Present status: On-going</p>
	<p>Name: Subhojit das Research Area: Multilevel Multi-functional Converter for Renewable Energy Integration Date of joining: January, 2019 Present status: On-going</p>
	<p>Name: Bikram Kumar Samanta Research Area: Grid-following/Grid-forming control Date of joining: January, 2023 Present status: On-going</p>
<p>To be added soon.</p>	<p>Name: Saswat Ranjan Panda Research Area: Medium Voltage Induction Motor Drive Date of joining: 2023 Present status: On-going</p>

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M. Tech. Project Supervision:

To be added soon...

Sl. No.	Name of the student	Research area	Supervisor(s)	Present Status

B. Tech. Project Supervision:

To be added soon...

Sl. No.	Name of the student	Research area	Supervisor(s)	Present Status

Institute responsibilities:

- Time table in-charge (from 2017-2023)
- In-charge of Power Electronics Laboratory
- Warden of ABV-1 Hall

Subjects taught in IIT Kharagpur at UG/PG level:

Electrical Technology, (UG)
Power Electronics, (UG)
Electric Drives (UG)
Basic Electric Drives (PG)
Advanced Electric Drives (PG)
Power Quality (PG)
HVDC & FACTS (PG)
Special Electrical Machines (PG)
Electrical Machines (UG)

Guest lectures given:

Curriculum Vitae

- 45th batch MT/DT's of HAL trainees on Electrical and Electronics Training for Avionics, 4th January – 15th March, 2023
- Few more to be added...

Short-term course conducted:

- 171001D12 : SiC Devices Enabled Power Converters Applications – Opportunities and challenges, Foreign expert – Subhashish Bhattacharya, North Carolina State University, USA, Coordinator – Suman Maiti, IIT Kharagpur, India, duration – 25/06/2018 to 29/06/2018.
- NPTEL, Electrical Machine-I (repurpose with assignments and MATLAB programs), Course Duration : 2017-05-17 to 2017-07-24, Exam Date : 2017-10-22, Certificates given – 283, <https://nptel.ac.in/courses/108105017>.

Collaboration:

- Collaboration with NTUA Greece for EU-India joint project on Islanded Local Energy System (from 2021-2024)
- Collaboration with University of Southampton as part of the RE-EMPOWERED project (from 2021-2024)