Name: CHANDAN CHAKRABORTY

Position & Office Address : Professor **,** Electrical Engineering Department
Indian Institute of Technology Kharagpur
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Phone : +91-3222-283096 (Office) +91-9733677284 (Mobile)
Website : http://www.facweb.iitkgp.ernet.in/~chandan/

Marital Status: Married to **Indrani**, have two children **Chinmoyee** and **Soham**

Education:

Degree	Subject	Class CGPA/ marks	Year	University	Details (if any)
B.E	Electrical Engineering	79.4%	1987	Jadavpur University	Developed CAD for machine design in bachelor project Supervisor: Prof. S. Basu
M.E	Electrical Machines	81.8%	1989	Jadavpur University	Published **one** IEEE Trans. paper from ME Thesis work Supervisor: Prof. S. K. Biswas
Ph D	Induction Generators		1997	IIT Kharagpur	Published **two** IEEE Trans. papers. Supervisors: Prof. A.K. Chattopadhyay & Prof. S. N. Bhadra
Ph.D	Resonant Converters		2000	Mie University, Japan	Published **two** IEEE Trans. papers. Supervisor: Prof. M. Ishida

Post Doctoral Experience:

Post Doctoral Scheme	Topic	Year	University	Supervisor
JSPS Post Doc. Research.	Electric Vehicle	2000-02	University of Tokyo, Japan	Prof. Yoichi Hori

Positions held (in chronological order):

S No	Period	Place of Employment	Designation	Additional Information (if any)
1.	Oct 93-Oct 02	JadavpurUniversity	Lecturer	
2.	Apr 97-Sept 97	Osaka University of Foreign Studies, Japan	Researcher	Indo-Japan (Monbusho) Programme
3.	Oct 97- Aug 00	Mie University, Japan	Researcher	Indo-Japan (Monbusho) Program

4	Oct.00 - Oct 02	University of Tokyo, Japan	JSPS Researcher	JSPS Foundation
5	Oct 02- Sept 10	IIT Kharagpur	Associate Professor	
6	Sept 10-Aug 17	IIT Kharagpur	Professor	
7	Aug 17-till date	IIT Kharagpur	Professor (HAG)	

Subjects taught at IIT Kharagpur

- For 1st year B.Tech-EE11001 (Electrical Technology)
- For 2nd year B.Tech-EE23002 (Electrical Machines)
- For 3rd year B.Tech-EE33006 (Power Electronics & Drives)
- For 4th year B.Tech-EE40002 (Electric Drives)
- For 4th year B.Tech-EE40011 (Advanced Power Electronics & Drives)
- For 4th year B.Tech-EG43001 (Non-conventional Electrical Power Generation)
- For M.Tech-EE60001 (Power Electronic Converters & Machine Drives)
- For M.Tech-EE60003 (Machine Analysis)
- For M.Tech-EE60004 (Advanced Power Electronic Converters)
- For M.Tech-EE60002 (Advanced Machine Drives)
- For M.Tech-EE60082 (Electric Vehicles) proposed this course at IIT Kharagpur
- For M.Tech-EE60016 (Smart Grid) together with other faculty members

Consortium Lead:

UK-India Consortium

Prof. Chakraborty is the Lead of a Consortium project titled *UK India Clean Energy Research Institute*

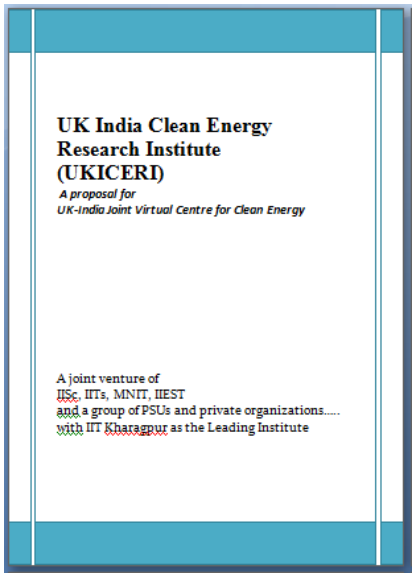
Consortium Details:

Team:

From India: IIT Kharagpur, IISc Bangalore, IIT Delhi, IIT Kanpur, IIT Madras, IIT Bhubaneswar, IIEST Shibpur MNIT Jaipur

From UK: Imperial College London, Loughborough University, University of Manchester, University of Birmingham, University of Southampton, University of Warwick, Cardiff University, University of Exeter, Swansea University

& Industry Partners



Sponsored Research (Funded project):

Sl. No.	Title of the Project	Funding Agency	Responsibility	Status
1.	UK India Clean Energy Research Institute (UKICERI)	DST	**Principal Investigator** and Consortium Lead, India Side	On-going
2	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)	**Principal Investigator** and Lead from India Side	Completed
3.	Energy Storage Integration with the grid at High Power Level	DST	Co-PI	On-going
4.	Opened & Intelligent Plug-in Hybrid Electric Vehicle (PHEV) Technologies for Smart Indian Cities (HEV)	Tata Motors, Pune, MHRD, New Delhi, Ministry of Heavy Industries & Public Enterprises, New Delhi.	Co-PI	On-going
5.	Hybrid Sodium-ion Cell/Super Capacitor Packs for Light Electric Vehicles	MHRD, Ministry of Road Transport and Highways, New Delhi	Co-PI	On-going
6.	Safety Thermal Management & Design of Lithiam Ion battery Module Operating at High & Fluctuating Discharge Rate for Underwater Vehicle Application	Naval Research Board, Ministry of Defence, DRDO, New Delhi	Co-PI	On-going
7.	Stability and Performance on Photovoltaics (STAPP) (a collaborative project involving IIT Kharagpur, IIT Bombay, IIT Kanpur and Solar Energy Centre and four UK side institutions)	DST (in collaboration with RC UK)	**Principal Investigator**	Completed
8.	Renewable Hybrid Energy Power Plant for Telecom station in Isolated Sites	Vodaphone	Co-Principal Investigator	Completed
9.	Development of an Economical Variable Speed Constant Frequency Generation System Suitable for Wind Power Generation	CPRI	Co-Principal Investigator	Completed
10.	Departmental FIST Project	DST	**Co-ordinator**	Completed

11.	Model Reference Adaptive System(MRAS) Based Speed Estimation of Doubly-Fed Induction Motor (DFIM) Drives Using Reactive Power	DIT	**Principal Investigator**	Completed
12.	Application of Chaos in DC/DC Converters for Reduction of EMI	ISRO	**Principal Investigator**	Completed
13.	Development of an Automotive Electronics Laboratory	MHRD	**Principal Investigator**	Completed

Editorial Experience

2019-2022 **Founder EIC** for *IEEE Journal on Emerging & Selected Topics in Industrial Electronics* (JESTIE), http://www.ieee-ies.org/pubs/jestie

2019 **Co-EIC** of *IEEE Trans. on Industrial Electronics*.

2013-15: **Founder EIC**, IEEE IE Tech News

Jan. 2016-2019: **Associate Editor**, *IEEE Journal of Emerging and Selected Topics in Power Electronics* (JESTPE)

2015: **Guest Editor** for a Special Issue in *IEEE Transactions on Industrial Electronics* published in July 2015 (jointly with Prof. Herbert Iu and Prof. Dylan Lu of Australia)

2011-2019: **Editor**, *IEEE Power Engineering Letters*

2010-2019: **Editor**, *IEEE Transactions on Sustainable Energy*

2009: **Guest Editor** for a Special Issue in *IEEE Transactions on Industrial Electronics* published in October 2009 (jointly with Prof. Greg Asher of University of Nottingham, UK)

2008-2019: **Associate Editor**, *IEEE Industrial Electronics Magazine*

2006-2017: **Associate Editor**, *IEEE Transactions on Industrial Electronics*

Conferences Activities

2020

- General Co-Chair, IESES2020, Sardinia, Cagliari, Italy.
- Technical Program Co-Chair:IECON2020, Singapore.

2019

- Track Chair: Power Electronics Track, ISIE-2019, Vancouver, Canada.
- Track Chair: Power Electronics Track, IECON 2019, Lisbon, Portugal.

2018

- General Co-Chair: IEEE International Conference on Industrial Electronics for Sustainable Energy Systems, IESES-2018, Waikato, Hamilton, New Zealand.

- Track Chair: Power Electronics Track, ISIE-2018, Cairns, Australia.

2017

- General Co-Chair: IEEE International Conference on Industrial Technology, ICIT-2017, Toronto, Canada.
- Track Chair: Power Electronics Track, ISIE-2017, Edinburg, UK.

2016

- Track Chair: Power Electronics Track, ISIE-2016, Santa Clara, USA.
- Tutorial Chair: IECON 2016, Florence, Italy.

2015

- Technical Program Chair: IEEE Electric Machines and Drives Conference, IEMDC-2015, Idaho, USA.
- Technical Program Chair: ISIE-2015, Rio-de-Janeiro, Brazil.
- Technical Program Chair: ICIT-2015, Seville, Spain.

2014

- Technical Program Chair: IECON-2014, Dallas, USA.
- Track Chair: ISIE-2014, Istanbul, Turkey.

2013

- Track Chair: IEEE IECON-2013, Vienna. Austria.
- Track Chair: ISIE-2013, Taipei, Taiwan.

2012

- Technical Program Chair: IEEE Industrial Electronics Society Annual Conference, IECON-2012, Montreal, Canada.
- Track Chair: ISIE-2012, Hangzhou, China.

2011

- Track Chair: IECON-2011, Melbourne, Australia
- Track Chair: ISIE-2010, Gdansk, Poland

2010

- Technical Program Chair: IEEE International Conference on Industrial Technology, ICIT-2010, Chile
- Track Chair: IECON-2010, Glendale, Arizona, USA
- Track Chair: IEEE ISIE-2010, Bari, Italy

2009

- Technical Program Chair: 2009 IEEE International Conference on Industrial Technology, Australia
- Track Chair, Power Electronics Track: 2009 IEEE Industrial Electronics Society Annual Conference (IECON), Portugal
- Track Chair, Power Electronics Track: 2009 IEEE International Symposium on Industrial Electronics (ISIE), Korea

2008

- Track Chair, Electric Machines & Drives Track: 2008 IEEE Industrial Electronics Society Annual Conference, Orlando, USA
- Convenor, 2008 ICIIS, Kharagpur

2006

- Technical Program Chair: 2006 IEEE International Conference on Industrial Technology, Mumbai, India

Other IEEE Activities

2020-21: **Member**, IEEE Power & Energy Society Fellow Committee
2017-19: **Member**, IEEE Industrial Electronics Society Fellow Committee
Member, IEEE IES Publications Committee
2013-14: **Chair**, Power Electronics Technical Committee, IEEE IES

Elected ADCOM Member IEEE IES (2007, 2009-10, 2012-13, 2017-19))

Invited/Keynote lectures

- February 28, 2020 on Renewable Energy Integration: Challenges and Opportunities at **CALCON 2020**, Kolkata
- December 14, 2018 on Brushless and Permanent Magnet Less Generators: An alternative to Traditional Generators at **IICPE18**, Jaipur
- December 3, 2017, on High Performance Induction Motor Drives: Vector Control and Beyond, at **CALCON 17**, Lalit Great Eastern Hotel, Kolkata
- November 27, 2016, on State of the Art of Fault Tolerant Induction Motor Drives, at **PIICON16**, Bikaner, Rajasthan.
- April 4, 2014, "Speed, Parameter Estimation and Fault Tolerant Control of Induction Motor Drives: A Model Reference Adaptive Controller Based Approach,**"** at **IIT Delhi.**
- November 13, 2008, "Speed sensorless control of induction motor drives: A model reference adaptive controller based approach," at **Massachusetts Institute of Technology (MIT), USA**.
- November 7, 2008, "Issues of Induction Motor Drives," at **North Carolina State University, USA**.
- November 11, 2005, on "Some investigations on the Controlled Capacitor Charging (CCC)-type Inverter," at **GE Global Research, NY, USA**.
- November 10, 2005, on "Some aspects of control and topological developments of resonant DC/DC converters and Inverters," at **Syracuse University, NY, USA**,
- December 17, 2004, on "Dynamic Pulse Modulation to Control Resonant DC/DC Converters," at the **University of Nottingham, UK**
- December 15, 2004, on "Control of Resonant Converters," at **ImperialCollege, London, UK**
- July 4, 2003, on "Some aspects of Induction Motor Drives for Electric Vehicles Applications," at the **University of Tokyo, Japan**.

Activities in IEEE Kharagpur Section

- 2010 **Chair**, IEEE Kharagpur Section
- 2009 **Vice Chair**, IEEE Kharagpur Section
- 2008 **Secretary & Treasurer**, IEEE Kharagpur Section

Awards/Recognition

2019 **IEEE Bimal Bose Energy Systems Award**,
http://www.ieee-ies.org/about/awards/awards-info/191-dr-bimal-bose-energy-systems-award

2019-22: **Founder EIC**, IEEE Journal on Emerging & Selected Topics in Industrial Electronics, http://www.ieee-ies.org/pubs/jestie
2019: **Co-EIC**, IEEE Trans. on Industrial Electronics
2015: **Fellow IEEE**
2010: **Fellow INAE**
2008: **Best Paper Third Prize** by the IEEE IES Electrical Machine Technical Committee.
2000-02: **JSPS Post Doctoral Fellowship** to work at the University of Tokyo

Research Supervision

PDF/Ph.D Students graduated

POST DOCTORAL FELLOW

2016-18
Dr. Sumit K. Chattopadhyay (presently a faculty in IIT Delhi)
Worked on Topology and Control of Multi Level Converters

PHD STUDENTS (Thesis Submitted)

12. **Yalla Tirumala Rao** (Presently at Ola Electric Bangalore)
Thesis Title: Analysis, Design and Control of Brushless Induction Excited Synchronous Generator

PHD STUDENTS GRADUATED

- **2020**
  11. Noel Richard Merritt
  Thesis Title: Performance and Control of Renewable Energy Fed Microgrids Under Unbalanced and Nonlinear Conditions

  Jointly with Prof. Prabodh Bajpai

  2019
  10. Dr. Saptarshi Basak (presently at Shakti Pumps, Indore)
  Thesis Title: New Brushless Generation Systems for DC Microgrid

- **2018**
  9. Dr. Santu Giri (presently at CMRI Durgapur)
  Thesis Title: Some Studies on Control and Modulation Strategies for Neutral-Point-Clamped Converters Addressing Capacitor Voltage Balancing

  Jointly with Prof. Subrata Banerjee of NIT Durgapur

- **2017**
  8. Dr. Saroj K. Sahoo (presently working in DELTA Electronics, Bengaluru)
  Thesis Title: Synchronous PMM Strategies for Low Switching Frequency Operation of Vector Controlled Induction Motor Drives

  Jointly with Dr. Tanmoy Bhattacharya

- **2016**
  7. Dr. A. V. Ravi Teja (presently a faculty at IIT Ropar)
  Thesis Title: *Adaptive Sensorless Induction Motor Drive with Sliding Mode Controllers: Analysis, Simulation, and FPGA based Implementation*

  6. Dr. Sumit K. Chattopadhyay (presently a faculty at IIT Delhi)
  Thesis Title: *Investigations on Topological Variations and Applications of Multi Level Inverters*

- **2014**
  5. Dr. Vimlesh Verma (presently a faculty at NIT Patna)
  Thesis Title: *Fault Detection and System Reconfiguration for Vector Controlled Induction Motor Drives*

- **2013**
  4. Dr. Kuntal Mandal (presently a faculty at NIT Sikkim)
  Thesis Title: *Dynamical Analysis of Resonant DC-DC Converters*

- Jointly with Prof. Soumito Banerjee

- **2011**
  3. Dr. Avik Bhattacharya (presently a faculty at IIT Roorkee)
  Thesis Title: *Investigations on Shunt Active Power Filters*

- **2009**
  2. Dr. Suman Maiti (presently a faculty at IIT Kharagpur)
  Thesis Title: *Reactive Power Based Model Reference Adaptive System for Sensorless Induction Motor Drive*

  2008
  1. Dr. Suvarun Dalapati (presently a faculty at IIEST Shibpur)
  Thesis Title: *Power Converters Based On Controlled Capacitor Charging Technique*

Selected Publications:

Electric Machines (10 selected publications):

1. C. Chakraborty and Y. T. Rao, "Performance of Brushless Induction Excited Synchronous Generator***, IEEE Journal of Emerging and Selected Topics in Power Electronics,*** Vol.7, No.4, pp. 2571-2582, 2019.

2. **C. Chakraborty**, S. Basak and Yalla Tirumala Rao "Synchronous Generator with Embedded Brushless Synchronous Exciter," ***IEEE Transactions on Energy Conversion***, Vol.34, No.3, pp.1242-1254, 2019.

3. S. Basak, A. K. Mondal and **C. Chakraborty**, "Performance and Analysis of a New Brushless Synchronous Generator for DC Microgrid Application," ***IEEE Transactions on Industry Applications***, vol. 56, no. 3, pp. 3137-3148, 2020.

4. Y. T. Rao, **C. Chakraborty** and S. Basak, "Brushless Induction Excited Synchronous Generator With Induction Machine Operating in Plugging Mode," ***IEEE Transactions on Industry Applications***, Vol.54, No.6, pp. 5748-5759, 2018

5. S. Basak, **C. Chakraborty**, and B. C. Pal, "A New Configuration of Dual Stator Induction Generator Employing Series and Shunt Capacitors," ***IEEE Transactions on Energy Conversion***, Vol.33, No.2, pp. 762-772, 2018.

6. S. Basak and **C. Chakraborty**, "A New Optimal Current Control Technique for Dual Stator Winding Induction Generator," ***IEEE Journal of Emerging and Selected Topics in Power Electronics***, Vol.5, No.2, pp. 820-832, 2017.

7. **C.Chakraborty**, S.N.Bhadra and A.K.Chattopadhyay, "Analysis of Parallel-Operated Self-Excited Induction Generators," ***IEEE Trans. on Energy Conversion***, Vol.14, No.2 pp.209-216, 1999.

8. **C.Chakraborty**, S.N.Bhadra and A.K.Chattopadhyay, "Excitation Requirements of Three Phase Induction Generators," ***IEEE Trans. on Energy Conversion***, Vol.13, No.4 pp.358-365, 1998.

9. A. V. Ravi Teja, **C. Chakraborty**, and B. C. Pal, " Disturbance Rejection Analysis and FPGA-Based Implementation of a Second-Order Sliding Mode Controller Fed Induction Motor Drive," ***IEEE Transactions on Energy Conversion***, Vol.33, No.3, pp. 1453-1462, 2018.

10. S. Basak and **C. Chakraborty**, "Dual Stator Winding Induction Machines: Problems, Progress and Future Scope," ***IEEE Trans. on Industrial Electronics***, Vol.62, No.7, pp.4641-4652, 2015.

Industrial Drives (10 selected publications):

1. **C. Chakraborty** and V. Verma, "Speed and Current Sensor Fault Detection and Isolation Technique for Induction Motor Drive Using Axes Transformation," ***IEEE Trans. on Industrial Electronics***, Vol.62, No.3, pp.1943-1954, 2015.

2. S.Maiti, **C. Chakraborty**, Y. Hori and M. C. Ta, "Model Reference Adaptive Controller-Based Rotor Resistance and Speed Estimation Techniques for Vector Controlled Induction Motor Drive utilizing Reactive Power," ***IEEE Trans. on Industrial Electronics*** , Vol.55, No.2, pp.594-601, 2008.

3. **C.Chakraborty** and Y.Hori, "Fast Efficiency Optimization Techniques for the Indirect Vector-Controlled Induction Motor Drives," ***IEEE Trans. on Industry Applications***, Vol.39, No.4, pp.1070-1076, 2003.

4. A.V.RaviTeja, V. Verma and **C. Chakraborty**, "A New Formulation of Reactive Power Based Model Reference Adaptive System for Sensorless Induction Motor Drive," ***IEEE Trans. on Industrial Electronics***, Vol.62, No.11, pp.6797-6808, 2015.

5. S.Maiti, V.Verma, **C. Chakraborty**, and Y.Hori, "An adaptive speed sensorless induction motor drive with artificial neural network for stability enhancement," ***IEEE Trans. on Industrial Informatics***, vol. 8, no. 4, pp.757–766, Nov. 2012.

6. V.Verma, **C. Chakraborty**, S.Maiti, and Y.Hori, "Speed sensorless vector controlled induction motor drive using single current sensor," ***IEEE Trans. on Energy Conversion***, Vol.28, No.4, pp.938-950, 2013.

7. A.V.RaviTeja, **C. Chakraborty**,S.Maiti, and Y.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.

8. S.Mukhopadhyay, **C.Chakraborty**et. al., "Fabrication of a Repulsive-Type Magnetic BearingUsing a Novel Arrangement of Permanent Magnetsfor Vertical-Rotor Suspension," ***IEEE Trans. on Magnetics***, Vol.39, No.5, pp.3220-3222, 2003.

9. S.K.Biswas, **C. Chakraborty**, B.Basak and D.P.SenGupta "Performance Analysis of An Asymmetrical Phase-Converter-Fed Induction Motor," ***IEEE Trans. on Industry Applications***, Vol.34, No.5, pp.1049-1058, 1998.

10. A. V. Ravi Teja, **C. Chakraborty**, and B. C. Pal, " Disturbance Rejection Analysis and FPGA-Based Implementation of a Second-Order Sliding Mode Controller Fed Induction Motor Drive," ***IEEE Transactions on Energy Conversion***, Vol.33, No.3, pp. 1453-1462, 2018.

Microgrid & Power Quality (10 selected publications):

1. U. Vuyyuru, S. Maiti, and **C. Chakraborty**, "Active Power Flow Control Between DC Microgrids," ***IEEE Transactions on Smart Grid***, Vol.10, No.5, pp.5712-5723, 2019.

2. U. Bose, S. Chattopadhyay, **C. Chakraborty**, and B. Pal, "A Novel Method of Frequency Regulation in Microgrid," ***IEEE Transactions on Industry Applications***, Vol.55, No.1, pp. 111-121, 2019.

3. U. Vuyyuru, S. Maiti, C. Chakraborty, B. C. Pal, "Series Voltage Regulator for Radial DC-microgrid," ***IEEE Transactions on Sustainable Energy***, Vol.10, No.1, pp. 127-136, 2019.

4. S. K. Chattopadhyay and **C. Chakraborty**, "A New Asymmetric Multilevel Inverter Topology Suitable for Solar PV Applications with Varying Irradiance," ***IEEE Transactions on Sustainable Energy***, Vol. 8, No.4, pp. 1496-1506, 2017.

5. **C. Chakraborty**, Herbert Iu and Dylan Lu, "Power Converters, Control and Energy Management: Guest Editorial," ***IEEE Transactions on Industrial Electronics***, Vol.62, No.7, pp.4466-4470, 2015.

6. N. R. Merritt, **C. Chakraborty**, P. Bajpai and B. C. Pal, "A Unified Control Structure for Grid Connected and Islanded Mode of Operation of Voltage Source Converter Based Distributed Generation Units Under Unbalanced and Non-Linear Conditions," ***IEEE Transactions on Power Delivery***, vol. 35, no. 4, pp. 1758-1768, Aug. 2020.

7. N. R. Merritt, **C. Chakraborty**, P. Bajpai, "New Voltage Control Strategies for VSC based DG Units in an Unbalanced Microgrid," ***IEEE Transactions on Sustainable Energy***, Vol.8, No.3, pp. 1127-1136, 2017.

8. A. Bhattacharya, **C. Chakraborty** and S. Bhattacharya, "Shunt Compensation: reviewing traditional methods of reference current generation," ***IEEE Industrial Electronics Magazine***, Vol.3, No.3, pp.38-49, 2009.

9. A. Bhattacharya, **C. Chakraborty** and S. Bhattacharya, "Parallel Connected Shunt Hybrid Active Power Filters Operating at Different Switching Frequencies for Improved Performance," ***IEEE Trans. on Industrial Electronics***, Vol. 59, pp. 4007-4019, 2012.

10. A. Bhattacharya and **C. Chakraborty**, "A Shunt Active Power Filter with Enhanced Performance Using ANN based Predictive and Adaptive Controllers," ***IEEE Trans. on Industrial Electronics,*** vol. 58, No. 2, pp. 421-428, 2011.

Power Converters-I: Inverters (10 selected publications):

1 S.K.Chattopadhyay and **C.Chakraborty**, "A New Multi Level Inverter Topology with Self Balancing Level Doubling Network," ***IEEE Trans. on Industrial Electronics***, Vol.61, No.9, pp.4622-4631, 2014.

2 R. Vasu, S. K. Chattopadhyay and **C. Chakraborty**, "Asymmetric Cascaded H-Bridge Multilevel Inverter With Single DC Source per Phase," ***IEEE Transactions on Industrial Electronics***, vol. 67, no. 7, pp. 5398-5409, July 2020.

3 S. K Chattopadhyay and **C. Chakraborty**, "Three-Phase Hybrid Cascaded Multilevel Inverter Using Topological Modules with 1:7 Ratio of Asymmetry," ***IEEE Journal of Emerging and Selected Topics in Power Electronics,*** Vol.6, No.4, pp. 2302-2314, 2018

4 S. K Chattopadhyay and **C. Chakraborty,** "Full-Bridge Converter With Naturally Balanced Modular Cascaded H-Bridge Waveshapers for Offshore HVDC Transmission," ***IEEE Transactions on Sustainable Energy***, Vol.11, No.1, pp.271-281, 2020.

5 S. K. Chattopadhyay and **C. Chakraborty**, "Performance of Three-Phase Asymmetric Cascaded Bridge (16:4:1) Multilevel Inverter," ***IEEE Trans. on Industrial Electronics***, Vol.62, No.10, pp.5983-5992, 2015.

6 Rajesh V., S. K. Chattopadhyay, and **C. Chakraborty**, "Capacitor Size Reduction of Multilevel Inverters by Utilizing Neutral Shifting," ***IEEE Journal of Emerging and Selected Topics in Power Electronics,*** Vol.7, No.4, pp.2243-2254, 2019.

7 S. Giri, S. Banerjee and **C. Chakraborty**, "An Improved Modulation Strategy for Fast Capacitor Voltage Balancing of Three-Level NPC Inverters," ***IEEE Trans. on Industrial Electronics***, Vol. 66, No.10, pp. 7498 – 7509, 2019.

8 S. Giri, S. Banerjee, **C. Chakraborty** et al, "An Improved PWM Scheme for Three-Level Inverter Extending Operation into Overmodulation Region with Neutral Point Voltage Balancing for Full Power Factor Range," ***IEEE Journal of Emerging and Selected Topics in Power Electronics,*** Vol.6, No.3, pp. 1527-1539, 2018.

9 **C.Chakraborty**, S. Dalapati and S.Bhattacharya "Performance Evaluation of Controlled Capacitor Charging Type Inverters," ***IEEE Trans. on Industrial Electronics,*** Vol.56, No.1, pp.12-19, 2009.

10 S. Dalapati and **C.Chakraborty**, “A Direct PWM Technique for a Single-Phase Full-Bridge Inverter through Controlled Capacitor Charging,” ***IEEE Trans. on Industrial Electronics***, Vol.55, No.8, pp.2912-2922, 2008.

Power Converters-II: DC/DC Converters (5 selected publications):

1. K.Mandal, S.Banerjee, and **C.Chakraborty**, “Symmetry-Breaking Bifurcation in Series-Parallel Load Resonant DC-DC Converters,” ***IEEE Transactions on Circuits and Systems-I***, Vol. 60, no. 3, pp. 778-787, March 2013.

2. K. Mandal, S. Banerjee and **C. Chakraborty**, "A New Algorithm for Small-Signal Analysis of DC–DC Converters," *IEEE Transactions on Industrial Informatics*, vol. 10, no. 1, pp. 628-636, Feb. 2014.

3. S. Sathyan, H. M. Suryawanshi, **C. Chakraborty** et al, “ZVS-ZCS High Voltage Gain Integrated Boost Converter For DC Microgrid,” ***IEEE Trans. on Industrial Electronics***, Vol.63, No.11, pp. 6898 - 6908, 2016.

4. **C.Chakraborty**, M.Ishida and Y.Hori, “Novel Half-Bridge Resonant Converter Topology Realized by Adjusting Transformer Parameters,” ***IEEE Trans. on Industrial Electronics*** Vol.49, No.1, pp.197-205, 2002.

5. **C.Chakraborty** and M.Ishida, “Performance of A Series-Parallel Resonant DC/DC Converter Configured Around An Inductor-Transformer Utilizing Transformer Magnetics,” ***IEEE Trans. on Magnetics***, Vol.36, No.5, pp.3527-3529, 2000.