

Curriculum Vitae

Sumit Ghatak Choudhuri

Email: sgceefee@iitr.ac.in, sgceefee@ieee.org, sgceefee@thiet.org

Office Address:

Department of Electrical Engineering,
Indian Institute of Technology Roorkee,
Roorkee-247667, Uttarakhand, India
Tel: +91-1332-285034

Residence Address:

212/2, Saraswati Kunj,
Indian Institute of Technology Roorkee campus,
Roorkee-247667, Uttarakhand, India
Tel: +91-1332-285047

PERSONAL DATA

Date of Birth : October 22, 1973
Nationality : Indian

EDUCATIONAL QUALIFICATIONS

- 2005 Doctor of Philosophy (Ph.D) in “Analysis and Development of Vector Control of Induction Motor Drive”, Department of Electrical Engineering, Indian Institute of Technology Delhi (IITD), Hauz Khas, New Delhi-110016, India.
- 1999 M.E. (Electronics and Control), Electrical and Electronics (EEE) Group, Birla Institute of Technology and Science (BITS), Pilani, Rajasthan, India
- 1996 B.E. (Electrical and Electronics), Department of Electrical and Electronics (E & E), Manipal Institute of Technology (MIT), Manipal, University of Mangalore, (Now Manipal University), D.Karnataka-576104, India.

RESEARCH INTERESTS

Power Electronics, Electric Drives, Analysis, DSP based control, Power Quality, Energy Conservation, Uni-Modular and Multi-Modular, Single-Phase UPS Inverters System.

MEMBERSHIP IN PROFESSIONAL BODIES

Senior Member, IEEE
Member, IET
Fellow, IE (India)
Fellow, IETE
Life Member, ISTE

PROFESSIONAL EXPERIENCE

Designation of Posts Held	Name and Address of the Employer	From (Date)	To (Date)
Assistant Professor, Department of Electrical Engineering, Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, India	Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, India	August 04, 2009 (FN)	Till date
Assistant Professor (On Contract), Department of Electrical Engineering, Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, India	Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, India	May 08, 2008 (AN)	August 03, 2009 (AN)
Lecturer (On Contract), Department of Electrical Engineering, Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, India	Indian Institute of Technology Roorkee, Roorkee, Uttarakhand, India	February 23, 2006	May 08, 2008 (FN)
Assistant Professor, Department of Electronics and Communication Engineering, Bharati Vidyapeeth's College of Engineering, New Delhi, India	Bharati Vidyapeeth's College of Engineering, New Delhi, India	July 25, 2005	January 07, 2006
Lecturer, Department of Electronics and Communication Engineering, Amity School of Engineering and Technology, New Delhi, India	Amity School of Engineering and Technology, New Delhi, India	September 27, 2004	June 30, 2005
Additional teaching experience of two years simultaneously to M.E. as a Teaching Assistant (T.A.) in the Electrical and Electronics Engineering (EEE) Group, BITS, Pilani, Rajasthan	Birla Institute of Technology and Science, Pilani, Rajasthan, India	Jan 1997	Dec 1998

RESEARCH PUBLICATIONS

JOURNAL

1. Bhim Singh and Sumit Ghatak Choudhuri, "Fuzzy Logic Based Speed Controllers for Vector Controlled Induction Motor Drives," *IETE Journal of Research*, vol.48, no.6, pp.441-447, Nov-Dec 2002.
2. Bhim Singh and Sumit Ghatak Choudhuri, "DSP Based Implementation of Vector Controlled Induction Motor Drive using Sliding Mode Speed Control Strategy," *IETE Journal of Research*, vol.50, no.3, pp.229-236, May-June 2004.
3. Sumit G. Choudhuri, Bhim Singh, Ambrish Chandra and Kamal Al-Haddad, "A Comparative Study of Power Quality Improvements in Six-Pulse AC-DC Converter fed Vector Controlled Induction Motor Drive," *IEEMA Journal*, vol. 25, no.5, pp. 54-57, May 2005.
4. S. Ghatak Choudhuri and Bhim Singh, "DSP Based Implementation of Digital Speed Controller for Vector Controlled Induction Motor Drive," *Journal of Institution of Engineers (India)*, vol.85, pp.203-208, March 2005.
5. S. Ghatak Choudhuri and Bhim Singh, "DSP Based Implementation of Vector Controlled Induction Motor Drive using Different Speed Controllers," *IEEMA Journal*, vol.27, no.12, pp.76-84, December 2007.

6. Bhim Singh and Sumit Ghatak Choudhuri, "Speed Sensorless Control of Vector Controlled Induction Motor Drive," *ICFAI University of Electrical and Electronics Engineering*, vol.1, No.2, pp.75-94, April 2008.
7. A. Thilak Raja, P. Agarwal and S. Ghatak Choudhuri, "Vector Controlled Induction Motor Drive and Direct Torque Controlled Induction Motor Drive: A Comparative Study," *ICFAI University of Electrical and Electronics Engineering*, vol.2, No.2, pp.28-46, April 2009.
8. Bhim Singh and S. Ghatak Choudhuri, "Induction Motor Operated In Vector Controlled Mode to Conserve Electric Energy", *IUP Journal of Electrical and Electronics Engineering*, vol.3, No.2, pp.7-23, April 2010.
9. S. K. Singh and S. Ghatak Choudhuri, "Hybrid iterative learning control strategy for single-phase UPS inverter using inductor current active damping," *IET J. Eng.*, vol. 2018, no. 4, pp. 230–238, Apr. 2018.
10. S. K. Singh and S. Ghatak Choudhuri, "Hierarchical Fuzzy Control Applied to Parallel Connected UPS Inverters Using Average Current Sharing Scheme," *J. Inst. Eng. Ser. B*, pp. 1–12, 2018. (Accepted and Online).

CONFERENCE

11. Bhim Singh, B.P.Singh and Sumit Ghatak Choudhuri, "Comparative Study of Different Speed Controllers for Vector Control of an Induction Motor Drive," in *Proc. 24th National Systems Conf. (NSC 2000)*, 7-9 Dec. 2000, pp.446-451.
12. Bhim Singh and Sumit Ghatak Choudhuri, "Improved Power Quality Converter fed Adjustable Speed Induction Motor Drive for Pump Applications," in *Proc. International Conf. on Computer Applications in Electrical Engineering Recent Advances (CERA)*, Roorkee, 21-23 Feb, 2002, pp.398-405.
13. Bhim Singh and Sumit Ghatak Choudhuri, "Power Quality Considerations of 6,12 and 18 Pulse AC-DC Converters feeding Vector Controlled Induction Motor Drive," in *Proc. National Power Electronics Conf. (NPEC)*, Bombay, 16-17 Oct, 2003, pp.771-776.
14. Bhim Singh and Sumit Ghatak Choudhuri, "Power Quality Improvements in Vector Controlled Induction Motor Drives," in *Proc. PCI India Conf. (IEEE PES-IAS Delhi Chapter)*, 9-10 Nov, 2004, pp.195-204.
15. Bhim Singh, G.Bhuvaneswari, Vipin Garg and Sumit Ghatak Choudhuri, "A Study of Passive Filtering Techniques for Power Quality Improvement in Vector Controlled Induction Motor Drives," in *Proc. 13th National Power Systems Conf. (NPSC 2004)*, 27-30 Dec, 2004, pp.984-988.
16. Bhim Singh and Sumit Ghatak Choudhuri, "Simplified Model for Simulation of Vector Controlled Induction Motor Drive (VCIMD) using MATLAB," in *Proc. International Conf. on Computer Applications in Electrical Engineering Recent Advances (CERA)*, Roorkee, 29 Sep-1 Oct, 2005, pp.274-278.
17. Bhim Singh and S.GhatakChoudhuri, "DSP Based Implementation of Vector Controlled Induction Motor Drive using Fuzzy Pre-compensated Proportional Integral Speed Controllers," in *Proc. International Conf. on Power Electronics, Drives and Energy Systems*, 12-15 Dec, 2006, pp.1-6.
18. Subham Singh, Rajeev Ranjan, Ajit Kumar, Vivek Rathi and S. Ghatak Choudhuri, "A Pre-compensated POSICAST Speed Controller for Vector Controlled Induction Motor Drive (VCIMD)," in *Proc. National Conf. on Advances in Energy Conversion Technologies*, 07-09 Feb, 2013, pp. 166-172.
19. R.C.Tatelu and S. Ghatak Choudhuri, "An Intelligent Controller for Vector Controlled Induction Motor Drive (VCIMD)," in *Proc. National Conf. on Advances in Energy Conversion Technologies*, 07-09 Feb, 2013, pp. 101-108.
20. Prerak Bharadwaj, S. Ghatak Choudhuri and S.P.Singh, "Sensorless Vector Controlled Induction Motor Drive," in *Proc. National Conf. on Advances in Energy Conversion Technologies*, 07-09 Feb, 2013, pp. 114-120.
21. Santosh Kumar Singh and S. Ghatak Choudhuri, "Active Damping Control with Feedforward Loop for Single-Phase UPS Inverter System: A Comparative Study," in *Proc. International Conf. on Energy, Economics and Environment*, 27-28 Mar, 2015, pp. 1-5.

22. Suneel Kumar Agrawal and Sumit Ghatak Choudhuri, "Simulation of Vector Controlled Induction Motor Drive in MATLAB for Various Applications: A Comparative Study," in *Proc. Michael Faraday IET International Summit-2015*, 12-13 Sept, 2015, pp.533-540.
23. Santosh Singh and Sumit Ghatakchoudhuri, "Average Current Feed-Forward Control for Multi-Modular Single-Phase UPS Inverters System," in *Proc. 7th International Conf. on Intelligent Systems, Modelling and Simulation (ISMS)*, Jan 25-27, 2016, pp.244-249.
24. Mintu Munshi and Sumit Ghatak Choudhuri, "Model Reference Adaptive System using Rotor Flux and Back Emf Techniques for Speed Estimation of an Induction Motor operated in Vector Control Mode: A Comparative Study," in *Proc. 3rd IEEE UP Section International Conf. on Electrical, Computer and Electronics Engineering*, Dec 09-11, 2016, pp. 44-49.
25. Vanshika Jindal, Laxman Singh, Prem Prakash Dudi and Sumit Ghatak Choudhuri, "Operation of Induction Motor in Vector Controlled Mode with Variation in Speed Controller Logic: A Comparative Study," in *Proc. 3rd IEEE UP Section International Conf. on Electrical, Computer and Electronics Engineering*, Dec 09-11, 2016, pp. 519-524.
26. Santosh Kumar Singh and Sumit Ghatak Choudhuri, "A Conflict in Control Strategy of Voltage and Current Controllers in Multi-Modular Single-Phase UPS Inverters System," in *Proc.10th International Symposium on Advanced Topics in Electrical Engineering (ATEE)*, March 23-25, 2017, pp. 631-636.
27. Yugal Gupta and Sumit Ghatak Choudhuri, "A Comparative Study of Induction Motor when Operated in Vector Control and Direct Torque Control Modes" in *Proc. 9th International Conf. on Electrical Rotating Machines and Drives (ELROMA - 2017)*, September 14-15, 2017, pp. II-26 - II-33.
28. Santosh Kumar Singh and Sumit Ghatak Choudhuri, "A Comparative Study of Control Topologies for Single-Phase UPS Inverter System," in *Proc. 2nd Asian Conference on Energy, Power and Transportation Electrification (ACEPT 2017)*, October 24-26, 2017, pp.1-6.

WORKSHOP

29. Ajit Kumar, Subham Kumar Singh, Rajeev Ranjan, Rohankant Tatelu, Vivek Rathi and S. Ghatak Choudhuri, "Induction Motors Operated in Vector Control (VC) Mode using Different Speed Controllers : A Comparative Study", in *Proc. IEEE Workshop on Computational Intelligence: Theories, Applications and Future Directions*, July 14, 2013, pp. 126-132.

AWARDS

1. Awarded certificate of Merit from Institution of Engineers (India) for the research publication: "DSP Based Implementation of Digital Speed Controller for Vector Controlled Induction Motor Drive," *Journal of Institution of Engineers (India)*, vol.85, pp.203-208, March 2005.
2. Best Presentation Award in IEEE workshop on Computational Intelligence: Theories, Applications and Future Directions, July 14, 2013 at Indian Institute of Technology Kanpur
3. Best Paper Award, Session Three, Track Seven, Paper ID-140, "Simulation of Vector Control Induction Motor Drive in MATLAB for various applications: A Comparative Study," Michael Faraday IET International Summit-2015, Sept 12-13, 2015, IET (UK), Kolkata Local Network.

4. First Outstanding Oral Presentation for the paper titled “Model Reference Adaptive System using Rotor Flux and Back Emf Techniques for Speed Estimation of an Induction Motor operated in Vector Control Mode: A Comparative Study,” 3rd IEEE UP Section International Conference on Electrical, Computer and Electronics Engineering held at Indian Institute of Technology (BHU) Varanasi, U.P., India during 09th -11th December, 2016.
5. Third Outstanding Oral Presentation for the paper titled “Operation of the Induction Motor in Vector Controlled Mode with Variation in Speed Controller Logic: A Comparative Study,” 3rd IEEE UP Section International Conference on Electrical, Computer and Electronics Engineering held at Indian Institute of Technology (BHU) Varanasi, U.P., India during 09th -11th December, 2016.

LECTURES DELIVERED

SNo.	Title of Lecture / Lecture Series	Date / Place and Program where lectures delivered
1.	Intelligent control of Electric Drives (A.I.C.T.E. short term course)	One slot during 31.7.2006 to 4.8.2006, Continuing Education Centre, IIT Roorkee
2.	Industrial Electronics and Control of Drives (Short Term Teacher’s Training Program for Uttarakhand Polytechniques)	One slot during 31.5.2008 and 1.6.2008, Continuing Education Centre, IIT Roorkee
3.	Tutorial Talk at the 6 th National Conference on Advances in Energy Conversion Technologies, 2013 (AECT-2013) on the Theme of the Conference: "Energy Efficient Systems"	2.00 PM-3.00PM, Feb 09, 2013, MIT, Manipal, Manipal University (MU), Karnataka-576104
4.	Tutorial Talk in One Week Short Term Course On Recent Advances in Smart-Grid And Power-Quality Issues (RASPI 2016) On the theme: 1. Multi-Modular Single-Phase UPS Inverters System for Critical Load Applications 2. Induction Motor operated Direct On Line (DOL) and in Vector Control Mode: A Comparative Analysis in MATLAB Environment	2.30 PM -5.00 PM, July 14, 2016, Department of Electrical Engineering, College of Engineering and Management, Kolaghat, Purba Medinipur, West Bengal -721171, India

MEMBERSHIPS IN CONFERENCE COMMITTEE

Member, Advisory Committee, 6th National Conference on Advances in Energy Conversion Technologies (AECT-2013) at MIT, Manipal, Manipal University (MU), Karnataka-576104, India

GUIDANCE TO STUDENTS

Ph.D

Degree	Area	Status	Name of the Student	Supervisor
Ph.D	Performance Analysis of UPS Inverters System	On going	Santosh Kumar Singh	Dr. Sumit Ghatak Choudhuri
Ph.D	{Power Electronics and Electric Drives}	On going	Shamik Sen	Dr. Sumit Ghatak Choudhuri

M.Tech

Degree	Title of Thesis	Year Awarded	Name of the Student	Supervisors
M.Tech	Performance Investigations of Vector Controlled Induction Motor Drive	2007	Kothana Venkata Naresh	Prof. Pramod Agarwal Dr. S. Ghatak Choudhuri
M.Tech	Performance Investigations on DSP Based Permanent Magnet Synchronous Motor Drive	2007	Nagarjun Bommineni	Sri. Y.P. Singh Dr. S. Ghatak Choudhuri
M.Tech	Direct Power Control of Grid Connected Wound Rotor Induction Generator	2008	Vavilapalli Sridhar	Sri. Y.P.Singh Dr.S.Ghatak Choudhuri
M.Tech	Comparative Evaluation of Vector Control and Direct Torque Control Induction Motor Drives	2008	Anabothula Thilak Raja	Prof. Pramod Agarwal Dr.S.Ghatak Choudhuri
M.Tech	Simulation of PWM Rectifier with DC Current Link	2009	A.Shravan Kumar	Prof. Pramod Agarwal Dr. S. Ghatak Choudhuri
M.Tech	Simulation of Vector Controlled Induction Motor Drive	2009	Subrat Behera	Prof. S. P. Singh Dr. S. Ghatak Choudhuri
M.Tech	Analysis and Control of Induction Generator	2010	Tirakala Upendra	Prof. S. P. Singh Dr. S. Ghatak Choudhuri
M.Tech	Sensorless Vector Controlled	2010	Prerak Bharadwaj	Prof. S. P. Singh

	Induction Motor Drive			Dr. S. Ghatak Choudhuri
M.Tech	Performance Evaluation of an Energy Efficient Drive for Electric Vehicles	2011	Siva Prasada Rao Dasari	Prof. S. P. Gupta Dr. S. Ghatak Choudhuri
M.Tech	A Comparative Study of Vector Controlled Induction Motor Drive using Different Speed Controllers	2012	Rathi Vivek VijayKumar	Dr. S. Ghatak Choudhuri
M.Tech	Sensorless Speed Estimation Technique for Vector Controlled Induction Motor Drive	2012	Sumit Mundra	Dr. S. Ghatak Choudhuri
M.Tech	A Comparative Study of Direct Online Started Induction Motor and Vector Controlled Induction Motor	2012	Udit Jain	Dr. S. Ghatak Choudhuri
M.Tech	A Simplified Model For Simulation Of Vector Controlled Induction Motor Drive Under Various Operating Conditions	2012	Tatelu Rohankant Chandrakant	Dr. S. Ghatak Choudhuri
M.Tech	Analysis of Shunt Active Power Filter	2013	Anil Gambhir	Dr. Sharmili Das Dr. S. Ghatak Choudhuri
M.Tech	Modeling and Simulation of Multiple Output DC-DC Converters	2013	Harikrishnan A	Dr. M.K.Pathak Dr.S.Ghatak Choudhuri
M.Tech	Modeling and Simulation of Vector Controlled Induction Motor Drive	2013	Shanti Bhai Patel	Dr.S.P.Srivastava Dr.S.Ghatak Choudhuri
M.Tech	Implementation of PV Grid Connected Inverter	2013	Lavanya Kovvuru	Dr. Sharmili Das Dr. S. Ghatak Choudhuri
M.Tech	Performance Investigation of Three-Phase NPC High Power Factor Converter	2013	Nagendra Babu A.	Dr. Pramod Agarwal Dr. S. Ghatak Choudhuri
M.Tech	Design, Analysis and Control of Boost Converter for	2014	Siddharth Bathla	Dr. S. P. Singh

	Solar Energy Systems			Dr. S. Ghatak Choudhuri
M.Tech	Performance Analysis of Vector Controlled Induction Motor Drive	2014	Shivateja Manala	Dr. S. Ghatak Choudhuri
M.Tech	Speed Control of Induction Motor Drive with Front end Active (HPFC) Converter	2014	Appalaraju N	Dr. S. P.Gupta Dr. S. Ghatak Choudhuri
M.Tech	Performance Investigations of Vector Controlled Induction Motor Drive	2015	Suneel Kumar Agrawal	Dr. Sumit Ghatak Choudhuri
M.Tech	Performance and Analysis of Different Control Techniques for Buck Converter	2015	Amit Jeph	Dr. Sumit Ghatak Choudhuri
M.Tech	A Comparative Analysis of Boost and Buck-Boost Derived Topologies used as Power Factor Correctors	2015	Vipin Kumar Singh	Dr. Sumit Ghatak Choudhuri
M.Tech	Performance Investigation of Vector Controlled Induction Motor Drive using Sensorless Speed Estimation Techniques	2016	Mintu Munshi	Dr. Sumit Ghatak Choudhuri
M.Tech	Performance Analysis of Vector Controlled Induction Motor Drive with different Converters	2016	Suranya Koner	Dr. Sumit Ghatak Choudhuri
M. Tech	Induction Motor Operated in Vector Control Mode and Direct Torque Control Mode: A Comparative Study	2016	Alok Niranjana	Dr. Sumit Ghatak Choudhuri Dr. S.P.Gupta
M.Tech	Performance Analysis of Z Source DC-DC Converter	2016	Shrikrishna Pati Tripathy	Dr. Sumit Ghatak Choudhuri
M.Tech	Performance Analysis of Three-Phase Z-Source Inverter for Induction Motor Drive	2016	Markari Navateja	Dr. Sumit Ghatak Choudhuri

M. Tech	Performance Analysis of Multi-Phase Converters	2017	Shaik Azhar Madar	Dr. Sumit Ghatak Choudhuri
M.Tech	Performance Analysis of Vector Controlled Induction Motor Drives	2017	Silpashree Sahu	Dr. Sumit Ghatak Choudhuri
M.Tech	Performance Analysis of Bidirectional DC-DC Converter for Battery Charging	2017	Ravi Kumar	Dr. Sumit Ghatak Choudhuri
M.Tech	Comparative Study of Induction Motor operated in Vector Controlled Mode and Direct Torque Controlled Mode	2017	Kommuru Sudarshan	Dr. Sumit Ghatak Choudhuri
M.Tech	Performance Analysis of Induction Motor operated in Vector Control Mode by using Various Converters	2018	Rohan Saini	Dr. Sumit Ghatak Choudhuri
M.Tech	Performance Analysis of Induction Motor operated in Vector Control Mode by using Various Controllers	2018	Tejas Yadav	Dr. Sumit Ghatak Choudhuri

B.Tech

Degree	Title of Thesis	Year Awarded	Name of the Student	Supervisors
B.Tech	A Method for Effective Braking of Induction Motor by Self Excitation	2007	Animesh Singh Anshul Saxena Hanish Kukreja	Prof. S. P. Gupta Dr. S. Ghatak Choudhuri
B.Tech	Induction Motor Speed Control	2007	Manoj Gupta Naved Ahmad Pawan Kaura	Prof. S. P. Gupta Dr. S. Ghatak Choudhuri
B.Tech	Performance Investigation of Microcontroller based Induction Motor Drive	2008	Shailesh Kumar Sumit Kumar	Prof. S.P.Srivastava Dr.S. Ghatak Choudhuri
B.Tech	Design and Fabrication of an Electronic Starter for DC Motor	2009	Saurav Kumar Vijay Kumar	Prof. S. P. Gupta Dr. S. Ghatak Choudhuri
B.Tech	Performance Analysis of Vector Controlled	2017	Prem Prakash Dudi Laxman Singh Meena	Dr. Sumit Ghatak Choudhuri

	Induction Motor Drive			
B.Tech	Design and Implementation of Speed Control of Induction Motor using SPWM Inverter	2017	Abhishek Saini Bhavesh Jhabarmal Sanjay Sagar	Dr. Sumit Ghatak Choudhuri

Summer Internship

B.Tech (III rd Year)	Operation of Induction Motor in Vector Control Mode with Variation in Speed Controller Logic: A Comparative Study	2016	Vanshika Jindal, Bansthali Vidyapeeth, Rajasthan (May 15, 2016 – July 15, 2016)	Dr. Sumit Ghatak Choudhuri
B. Tech (III rd year)	Performance Analysis of Multi Pulse Converters	2017	Jagmet Singh, Department of Electrical Engineering, IIT Ropar, Punjab, India (May 16, 2017- July 15, 2017)	Dr. Sumit Ghatak Choudhuri

COURSES TAUGHT

1. EE-206: Applied Electronics , B.Tech (Electrical), Second Year
2. EE-202: Electric Machines-I, B.Tech (Electrical), Second Year
3. EC-101A: Computer Systems and programming, B.Tech, First Year
4. EE-101: Electrical Science, B.Tech, First Year
5. EE-303: Electrical Machines-II, B.Tech (Electrical), Third Year
6. EE-206: Power Electronics, B.Tech (Electrical), Second Year
7. EE-540: Advanced Power Electronics, M.Tech, First Year, Integrated Dual Degree & B.Tech (Electrical) Elective
8. EEN-202: Electric Machines-II, B.Tech (Electrical), Second Year
9. EEN-650: Switch Mode Power Supply, M.Tech, First Year & B.Tech (Electrical) Elective
10. EEN-302: Electric Drives, B.Tech (Electrical), Third Year
11. EEN-650: Switch Mode Power Supply, M.Tech, First Year
12. EEN-302: Electric Drives, B.Tech (Electrical), Third Year