



UNIVERSITY OF CALCUTTA

FACULTY ACADEMIC PROFILE

Full name of the faculty member: DR. AMITAVA BISWAS

Designation: ASSOCIATE PROFESSOR

Specialization: Electrical Engineering

Date of Joining the University: January 18, 2016

Contact information:

Electrical Engineering Section, Department of Applied Physics, University of Calcutta, 92, APC Road, Kolkata-700009, West Bengal, India;

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Educational Qualifications:

Ph. D. (Tech.), from University of Calcutta in the year 2015

M. Tech. in Electrical Engineering from Department of Applied Physics, University of Calcutta, 2002

B. E. in Electrical Engineering from Electrical Engineering Department Maulana Azad National Institute of Technology, 1999.

Positions held:

Associate Professor, Dept. of Applied Physics, University of Calcutta, Kolkata, 2017 to till date.

Assistant Professor, Department of Applied Physics, University of Calcutta, Kolkata, 2016-2017

Associate Professor, Academy of Technology, Hooghly, 2015-2016

Assistant Professor, Academy of Technology, Hooghly, 2007-2015

Senior Lecturer, Academy of Technology, Hooghly, 2005-2007

Lecturer, JIS College of Engineering, Kalyani, Nadia, 2002-2005

Research interests:

Control system analysis and identification using different orthogonal functions.

Subjects undertaken:**Undergraduate level: B. Tech in Electrical Engineering**

1. Signal and System
2. Electrical Machines
3. Advance Electrical Machines
4. Design of Electrical Machines
5. Control Theory
6. Power System

Post Graduate Level: M.Tech in Electrical Engineering

1. Dynamics of Linear Systems
2. Nonlinear and Optimal Control
3. Advanced Electrical Machines
4. Power System Stability and Protection

Research Guidance:

PhD Registered candidates:

1. Sudeep Samanta, Assistant Professor, Department of Electrical Engineering, MCKV, Howrah, India, Topic of research: Fault Detection of Electrical Machines. Detection of Three Phase Induction Motor Stator Fault Using Sample Shifting Technique.

PhD Enrolled candidates:

1. Ujjal Sur, Assistant Professor, Department of Electrical Engineering, Future Institute of Engineering and Management, Kolkata, India, Topic of research: A Modified Holomorphic Embedding Load Flow Method for Active Power Distribution Networks.
2. Rumrum Benerjee: Assistant Professor, Department of Electrical Engineering, Dr. Sudhir Chandra Sur Degree Engineering College, Kolkata, West Bengal. Topic of research: An orthogonal hybrid function approach to reduced order modelling in Continuous time domain.

Research Publications:**(A) Books / Book Chapter:**

1. Book Chapter: Book name: "Advances in Control, Signal Processing and Energy Systems" Chapter: "Design of a Multilevel Inverter Using SPWM Technique", Editors: Editors: Tapan Kumar Basu, Swapan Kumar Goswami, Nandita Sanyal, Published by: Springer International, Link: <https://www.springer.com/in/book/9789813293458>, ISBN : 978-981-329-346-5, pp 215- 229, 2019.
2. Book Chapter: "Environmental Impact of Thermal Power Plant Hazards and Its Mitigation Measure", Combating Environmental Hazards and Disasters: Issues and Approaches (UGCHRDC, University of Calcutta), ISBN: 978-93-5268-753-4, pp 1-8, 2017.

(B) Journal

1. Ujjal Sura, Amitava Biswas, Jitendra Nath Berab, Gautam Sarkar, "A modified holomorphic embedding method based hybrid AC-DC microgrid load flow" *Electric Power Systems Research*, vol. 182, May 2020. Published by **ELSEVIER**.
2. Amitava Biswas, Rumrum Benerjee, "An orthogonal hybrid function approach to reduced order modeling in Continuous time domain" *International Journal of Technology and Science*, vol. 5, issue 1, pp. 13-14, 2018., ISSN 2350 - 1103.
3. Amitava Biswas, Gargee Chakraborty, "Full Order Observer Controller Design for Two Interacting Tank System Based on State Space Approach" *International Journal of Application or Innovation in Engineering & Management*, vol. 6, issue 7, pp. 134-141, July, 2017, ISSN 2319 – 4847.
4. Deb, Anish, Sarkar, Gautam, Mandal, Priyaranjan, **Biswas, Amitava** and Sengupta, Anindita, A new approach to block pulse function (BPF) based analysis and identification of SISO control system, *Journal of Automatic & System Engineering*, vol. 7, no. 1, pp. 24-58, 2013, SSN 1112-8542.
5. Deb, Anish, Sarkar, Gautam, Mandal, Priyaranjan, **Biswas, Amitava**, Ganguly, Anindita and Biswas, Debasish, Transfer function identification from impulse response via a new set of orthogonal hybrid functions (HF), *Applied Mathematics and Computation*, Vol. **218**, Issue 9, pp. 4760-4787, 2012, Published by **ELSEVIER**.
6. Deb, Anish, Sarkar, Gautam, Ganguly, Anindita and **Biswas, Amitava**, Approximation, integration and differentiation of time functions using a set of orthogonal hybrid functions (HF) and their application to solution of first order differential equations, *Applied Mathematics and Computation*, vol. **218**, Issue 9, pp. 4731-4759, 2012, Published by **ELSEVIER**.
7. Deb, Anish, Sarkar, Gautam, Ganguly, Anindita and **Biswas, Amitava**, Numerical solution of third order linear differential equations using generalized one-shot operational matrices in orthogonal hybrid function domain, *Applied Mathematics and Computation*, vol. **219**, pp.1485-1514, 2012, Published by **ELSEVIER**.
8. Deb, Anish, Sarkar, Gautam, **Biswas, Amitava**, and Mandal, Priyaranjan, Numerical instability of deconvolution operation via block pulse functions, *J. Franklin Instt.*, vol. **345**, pp. 319-327, 2008, Published by **ELSEVIER**.

Conference/Seminar

1. Ujjal Sur, Amitava Biswas, Jitendra Nath Bera, Gautam Sarkar, "Dynamic Voltage Restorer Modelling for Holomorphic Embedding Distribution Load Flow Michael Faraday IET International Summit MFIS - 2020, 03-04th October 2020, Kolkata, India.
2. Ujjal Sur, Amitava Biswas, Jitendra Nath Bera, Gautam Sarkar, "Holomorphic Embedding Load Flow Modelling of DSTATCOM for Active Distribution Networks" IEEE Conference CALCON 2020, 28-29th February 2020, Kolkata, India.
3. Ujjal Sur, Amitava Biswas, Jitendra Nath Bera, Gautam Sarkar, "A Modified Holomorphic Embedding

Load Flow Method for Active Power Distribution Networks”, The IEEE Region 10 Symposium, TENSYPMP 2019, pp. 758-762, 7-9th June, 2019, Kolkata, India. ISBN: 978-1-7281-0296-2. DOI: 10.1109/TENSYPMP4621.8.2019.8971227

4. Suparna Pal, Amitava Biswas “A Real Time Nobel Approach of Aggregations of Generators and Loads into Virtual Power Plant”, International Conference on Industry Interactive Innovations in science and Technology, (I3SET2K19), 13-14th December, 2019, Kolyani, India. Link: <https://ssrn.com/abstract=3515875> or <http://dx.doi.org/10.2139/ssrn.3515875>
5. Suparna Pal, and Biswas, Amitava, Real Time Short Circuit Fault Analysis of a Sub-Station by Soft Computing (November 25, 2019). 2nd International Conference on Non-Conventional Energy: Nanotechnology & Nanomaterials for Energy & Environment (ICNNEE) 2019, 18-19th October, 2019, Kolyani, India. Link: <https://ssrn.com/abstract=3493196> or <http://dx.doi.org/10.2139/ssrn.3493196>
6. Arka Ray, Shuvadeep Datta, Amitava Biswas, Jitendra Nath Bera, “ Design of a Multilevel Inverter Using SPWM Techniques” IEEE National Conference on Control, Signal, Processing and Energy System (CSPES 2018), 16-18th November, 2018, Kolkata, India. DOI: 10.1109/TENSYPMP46218.2019.8971227
7. Amitava Biswas, Rumrum Benerjee, “Model order reduction using orthogonal hybrid function approximation in continuous time domain”, IEEE Conference on Recent trends in computer science and technology (ICRTCST), on 24-25th April, 2018, Jamshedpur, India.
8. Deb, A., Ganguly, A., Sarkar, G. and Biswas, A., Computation of convolution via a new set of orthogonal hybrid functions (HF) for linear control system analysis and identification, IEEE India Conference, INDICON 2012, pp. 682-688, 7-9 Dec. 2012, Kochi, India.
9. Deb, Anish, Ganguly, Anindita, Sarkar, Gautam and Biswas, Amitava, Numerical algorithm for the solution of third order differential equations in orthogonal hybrid function (HF) domain, IEEE India Conference, INDICON 2011, Hyderabad, 16-18th December, 2011.
10. Deb, Anish, Sarkar, Gautam, Ganguly, Anindita, Mandal, Priyaranjan and Biswas, Amitava, Approximation and integration of time functions using a set of orthogonal hybrid functions (HF), Proceedings of the National Seminar in Electrical Power Engineering, Electronics and Computers (Tech Meet 2010), Kolkata, 12-13 February, 2010.
11. Deb, Anish, Sarkar, Gautam, Mandal, Priyaranjan and Biswas, Amitava, Oscillation in block pulse function based identification of first order systems, Proceedings of International Conference ‘Emerging Trends in Electrical engineering’, pp 180-188, Kolkata, 12-14th Jan, 2007.
12. Deb, Anish, Sarkar, Gautam, Biswas, Amitava and Mandal, Priyaranjan, Optimal block pulse function (OBPF) vs. Non-optimal block pulse function (NOBPF), Proceedings of International Conference of IEE (PEITSICON) 2005, pp195-199, Kolkata, 28-29th Jan., 2005.

Professional Activity:

1. Committee member, Joint IEEE Control Systems Society -Instrumentation & Measurement Society (CSS-IMS) Chapter Kolkata.
2. Member, IET UK Kolkata Network.