

A GIAN Course on SMART Power Flow Controller for Smart Grid Applications

December 18th-23rd, 2017



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Organized By

**Department of Electrical Engineering
Delhi Technological University**

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Patron

Prof. Yogesh Singh
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Prof. Madhusudan Singh
Dean Academics (UG)
Head Electrical Engineering, DTU

Course Coordinator

Dr. Suman Bhowmick
Professor, EED

Course Co-coordinator

Mr. Kuldeep Singh
Assistant Professor, EED

About Speaker:



Kalyan Sen, a newly selected Fulbright Scholar, is the Chief Technology Officer of Sen Engineering Solutions, Inc. (www.sentransformer.com) that specializes in developing SMART power flow controllers—a functional requirements-based and cost-effective solution. He spent 30 years in academia and industry and became a Westinghouse Fellow Engineer. He was a key member of the Flexible Alternating Current Transmission Systems (FACTS) development team at the Westinghouse Science & Technology Center in Pittsburgh. He contributed in all aspects (conception, simulation, design, and commissioning) of FACTS projects at Westinghouse. He conceived some of the basic concepts in FACTS technology. He

has authored or coauthored more than 25 peer-reviewed publications, 8 issued patents, a book and 4 book chapters in the areas of FACTS and power electronics. He is the coauthor of the book titled, Introduction to FACTS Controllers: Theory, Modeling, and Applications, IEEE Press and John Wiley & Sons, Inc. 2009, which is also published in Chinese and Indian paperback editions. He is the co-inventor of Sen Transformer. He received BEE, MSEE, and PhD degrees, all in Electrical Engineering, from Jadavpur University, India, Tuskegee University, USA, and Worcester Polytechnic Institute, USA, respectively. He also received an MBA from Robert Morris University, USA. He is a licensed Professional Engineer in the Commonwealth of Pennsylvania. He is a Distinguished Toastmaster who led District 13 of Toastmasters International as its Governor to be the 10th-ranking District in the world in 2007-8.

Kalyan Sen, a Senior Member of IEEE, has served the organization in many positions. Under his leadership, IEEE Pittsburgh Section and its three chapters (PES, IAS and PELS) received Best Section and Chapter Awards. His other past positions included Editor of the IEEE Transactions on Power Delivery (2002 - 2007), Technical Program Chair of the 2008 PES General Meeting in Pittsburgh, Chapters and Sections Activities Track Chair of the 2008 IEEE Sections Congress in Quebec City, Canada, PES R2 Representative (2010 and 2011) and Member of the IEEE Center for Leadership Excellence (CLE) Committee (2013, 2014). He has been serving as an IEEE PES Distinguished Lecturer since 2002. In that capacity, he has given presentations on power flow control technology more than 100 times in 15 countries. He is an inaugural class (2013) graduate of the IEEE CLE Volunteer Leadership Training (VOLT) program. Kalyan Sen is the recipient of the IEEE Pittsburgh Section PES Outstanding Engineer Award (2004) and Outstanding Volunteer Service Award for reviving the local Chapters of PES and IAS from inactivity to world-class performance (2004). He has been serving as the Special Events Coordinator of the IEEE Pittsburgh Section for the last decade. He is the Region 1, 2&3 Coordinator of IEEE Power Electronics Society.

Course Contents:

- Introduction to Smart Grid and SMART Power Flow Controllers
- Emerging trends in power flow control
- Demonstration of power system modeling using EMTP
- Power electronics inverter
- Voltage Control – non power electronics and thyristor-based
- Voltage Control – power electronics inverter-based
- Reactance Control – non power electronics and thyristor-based
- Reactance Control – power electronics inverter-based
- Impedance Control – power electronics inverter-based
- Impedance Control – non power electronics and thyristor-based
- Power flow management using Generalized Power Flow Controller

Registration Process and Fee

Overseas Participants : US\$ 200 Participants from Academic Institutions : Rs. 2000 (Rs. 1000 for SC/ST participants)
Industry/ Research Organizations : Rs. 5000 Research Scholars/Students/Alumni : Rs. 1000 (Rs. 500 for SC/ST participants)

After registration on GIAN portal <http://www.gian.iitkgp.ac.in/GREGN/index>, the candidates are advised to submit the prescribed fee in the form of DD in favor of "Registrar, DTU" payable at Delhi along with printout of online submitted application form to Mr. Kuldeep Singh, Course Coordinator (GIAN), Assistant Professor, Department of Electrical Engineering, Delhi Technological University, Bawana Road, Delhi-110042 on or before 10.12.2017. The shortlisted participants will be informed through e-mail. The above fee includes all instructional materials, computer use for tutorials and assignments and laboratory equipment usage charges. The course fee does not include boarding and lodging.

Who can attend ?

Faculty, Research Scholars, M.Tech. Students, B.Tech. Students, Practicing Engineers from Industry, utilities may attend this course.

Course Coordinator

Dr. Suman Bhowmick

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Course Co-coordinator

Mr. Kuldeep Singh

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