

# A GIAN Course on Challenges and Opportunities in Renewable Energy: Role of the Smart Grid

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Sponsored by : **MHRD, Govt. of India**

Organized By:

**DEPARTMENT OF ELECTRICAL ENGINEERING  
Delhi Technological University**

Shahbad Daultapur, Bawana Road, Delhi-110042, Website: [www.dtu.ac.in](http://www.dtu.ac.in)

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Local Coordinator GIAN-DTU

**Prof. Madhusudan Singh**  
Dean Academics (UG)



## About Speaker:

**Professor Saifur Rahman** is the founding director of the Advanced Research Institute ([www.ari.vt.edu](http://www.ari.vt.edu)) at Virginia Tech where he is the Joseph R. Loring Professor of Electrical and Computer Engineering. He also directs the Center for Energy and the Global Environment ([www.ceage.vt.edu](http://www.ceage.vt.edu)). He is a Fellow of the IEEE and an IEEE Millennium Medal winner. He is the President-elect of the IEEE Power and Energy Society (PES) for 2016 and 2017. He will serve as the President of PES in 2018 and 2019. He was the vice president for publications of IEEE and a member of the governing board in 2006. He is a member of the governing board of the IEEE Society on the Social Implications of Technology (SSIT). He was the founding editor-in-chief of the IEEE Electrifications Magazine and the IEEE Transactions

on Sustainable Energy. He served as the chair of the US National Science Foundation Advisory Committee for International Science and Engineering from 2010 to 2013. He is a member-at-large of the IEEE-USA Energy Policy Committee. He is a Distinguished Lecturer for the IEEE PES, and has lectured on smart grid, energy efficient buildings, renewable energy, demand response, distributed generation and critical infrastructure protection topics in over 30 countries on all six continents.

## Course Contents:

- Renewable Energy Sources: An Introduction
- Design and Modelling of Solar Photovoltaic Systems
- Simulations on Solar Photovoltaic Systems
- Wind Turbines, Wind Power Plants
- Energy Storage for Renewable Energy Systems
- Challenges and Opportunities in solar photovoltaic systems and wind energy systems
- Simulation studies on wind energy systems
- Smart grid components, energy storage modelling
- Role of Smart Grid
- Design and development of smartgrid
- Demand Response Potential
- Home Energy Management System
- Best Practices in Grid Integration of Solar Photovoltaic and Wind Power Plants
- Smart Buildings and Infrastructure
- Smart Cities
- Simulation Studies on Home Energy Management Systems

## Registration Process and fee:

To attend this course, participants have to first register on GIAN portal (<http://www.gian.iitkgp.ac.in/GREGN/index>) and then he/ she has to select this course from the available list of courses. After the registration at GIAN portal, the candidate has to submit his/ her details with registration fee in the form of Demand Draft in favour of Registrar, DTU, payable at Delhi latest by 20<sup>th</sup> May 2016 in the office of Head, Department of Electrical Engineering, Delhi Technological University, Shahbad Daultapur, Bawana Road, Delhi-110042.

Only 50 participants will be shortlisted for this course on the basis of first come first.

## Who can attend?

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

Course Coordinator:

**Dr. M. Rizwan**

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