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Special Session on

"Control of Power Converters for Renewable Energy Systems and Smart/Micro Grids"

Organized by

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Call for Papers

Electrical Engineering, Associate Professor at Electrical Engineering, Qatar University and Former Full Professor at Electrical Engineering, Aligarh Muslim University (AMU), Aligarh, India. Recipient of Outstanding Faculty Merit Award AY 2014-2015 and Research excellence award at Qatar University, Doha, Qatar. He has been employed as a Lecturer in the Department of Electrical Engineering, AMU, Aligarh since 1991 where he served as Full Professor until Aug. 2016. He is the recipient of Maulana Tufail Ahmad Gold Medal for standing first at B.Sc. Engg. Exams in 1991 from AMU. He has received the best research papers awards at IEEE ICIT-2013, IET-SESICON-2013, and SIGMA 2018. He has published widely in International Journals and Conferences his research findings related to Power Electronics and Renewable Energy Sources. Dr. Iqbal has authored/co-authored more than 300 research papers and one book and three chapters in two other books. He has supervised several large R&D projects. His principal area of research interest is Modelling and Simulation of Power Electronic Converters, Control of multi-phase motor drives andRenewable Energy sources.

Technical Outline of the Session and Topics:

Non-conventional energy sources, such as wind generators, photovoltaic panels, fuel-cell, biomass and offshore renewable energy technology used to feed an isolated load in standalone systems and directly connected to grid for co-generation. This connection is made through power electronics interfaces that should ensure power flow control, voltage regulation, high stability and low electromagnetic emission, along with high power density, low cost and high reliability. In some applications where high power level is required, the switching

frequency of the power semiconductors is limited and the use of multilevel or interleaved converters becomes mandatory. This session addresses the issues of advanced control techniques applied to such converters to improve their performance, efficiency, reliability and cost-effectiveness.

Topics of interest include, but are not limited to:

- New Power Converters for Smart/Micro Grids.
- Model based control of power converters.
- Predictive control of power converters.
- Direct power control of power converters.
- Novel PWM Techniques for power electronics control
- Grid connectivity control requirements.
- Control techniques of power electronics converters for biomass, offshore and wind energy.
- Control techniques of power electronics converters for fuel cell and PV system.
- Advanced control of power electronics in smart grid.
- Optimal control in cogeneration systems.
- Real-time control and simulations of high power converters