

SPECIAL SESSION (SS12)

Smart Distribution Network for Integrating Distributed Energy Resources

Organizers:

Dr. Pushendra Singh

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Dr. Pushendra Singh is Associate Professor in Department of Electrical Engineering at JK Lakshmipat University, Jaipur. He did his graduation in Electrical Engineering from University of Rajasthan, Jaipur, Master of Technology in Power Systems and Doctorate in Power Systems from Malaviya National Institute of Technology (MNIT) Jaipur. With over Fifteen years of teaching, research, and administrative experience, he has held various administrative positions in the capacity of Principal, Head of Department. Before joining JKLU, Jaipur Dr. Pushendra Singh had been associated as Principal at Sunrise Group of Institutions, Udaipur for one Year and before that he served JECRC Jaipur for Ten years.

Dr. Mohan Lal Kolhe

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Mohan Kolhe received the Bachelor's degree in electrical engineering from MA College of Technology Bhopal, Bhopal University, India, in 1989, and the Master's and Doctorate degrees in energy engineering from the Indian Institute of Technology-Delhi, New Delhi, India, in 1991 and 2000, respectively. He was a member of the Government of South Australia's first renewable energy board (2009-2011) and actively contributed on developing renewable energy policies for South Australia. He was the Research Director (Renewable Energy) at the University of Jyväskylä, Finland, where he developed the facilities for renewable electrolytic hydrogen production, fuel cell powered small cars, and courses for the master's program in renewable energy. In January 2007, he joined the College of Art, Science and Engineering, University of Dundee, Dundee, U.K., as a faculty in renewable energy. Currently he is working as Professor Department of Electrical Power Engineering, University of Agder, Norway. His current research interests include solar energy, fuel cell technologies, integration of renewable energy systems, and energy economics.

The undergoing changes in the power system with increasing shares of Distributed Energy Resources will increase demand for flexibility and at the same time decrease supply of flexibility from traditional sources. Because Distributed Energy Resources are mainly connected to the distribution grids, their expansion puts a focus on local integration challenges. Flexible DER can provide services to fill flexibility gaps on the local and on the transmission level. In addition to other distributed generation (DG), they therefore increase the complexity of

distribution grid management. Existing centralized power plants have lower operational times and cannot balance the changes in residual demand. They cannot cover the flexibility gap on distribution grid level. Technological evolutions are reducing the cost of DER flexibility, and the cost-effectiveness of DER flexibility is on the rise. There is need of a Smart Distribution network to accommodate the higher capacity of distributed energy resources for providing affordable, clean and reliable power to the consumers and also reduce the greenhouse gas emissions.

We invite researchers, scholars, scientists to contribute papers and meet at this special session for exchange of ideas and development of research collaborations.

Topics of interest include (but are not limited to):

Researchers, practitioners and students worldwide invited to submit the outcomes of their research for consideration to be presented at the conference. Contributions are encouraged in all fields of Electrical Power and Distributed Energy Resources particularly those in the following areas:

1. Power and Energy System Applications
2. Smart Grids and Active Distribution Networks
3. Grid Planning, Operation and Management
4. Renewable Generation and Distributed Energy Resources
5. Intelligent monitoring and outage management
6. Smart Grid Interoperability and Standards Critical infrastructure resiliency
7. Computational Intelligence in Smart Grids
8. Emerging Technologies and End-user Systems
9. Microgrids, Standalone Power Systems, and Virtual Power Plants
10. Grid Resiliency, Reliability, Stability and Protection
11. Energy Forecasting, Peer-to-peer Energy Trading and Energy Management
12. Smart Monitoring and Fault Diagnosis Techniques
13. IoT Enabled Energy Systems
14. Electricity Market, Innovative Business Mechanism, Policy/Regulatory Aspects