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Special Session on

"Electric Vehicle Charging Systems and their Impact on Smart Grid Operations"

Organized by

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Call for Papers

Electric Vehicles (EV) utilization for both commercial and residential purposes have encouraged the research community to work towards a sustainable environment. In the last decade, EVs have become a significant part of smart grid concept due to its bidirectional capability of active / reactive power flow thereby acting as an energy source / sink to increase grid stability. However, range anxiety, charging time, cost and mediocre operating efficiency are still the main hinderances in the path of global acceptance of EV. Research community around the world are proposing methods / solutions to address these challenges in this field of work. This special session will cover in general the topics related to EV charging systems and specific topics are listed below:

o Design of EV charging systems
o Energy management in EV Charging Systems
o Optimization of EV Charging Systems
o Power quality issues in smart grid due to EV charging systems
o Control of EV in V2G, G2V and V2H modes of operation
o Modelling of EV charging systems as a distributed load on utility grid
o Employment of Wide – Band Gap Devices for improved EV charging system performance
o Novel converter topologies for EV chargers

o Efficiency optimization of slow / fast / ultrafast chargers for EVs
o Integration of renewable energy sources in EV charging systems
o Impact of slow/fast/ultrafast charging infrastructure structure on distribution/transmission systems of smart grid and
o Advanced control algorithms for improving grid performance by employing EVs as smart load.