



## Selected Areas in Communications Symposium Smart Grid Communications Track

### TRACK CHAIR:

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### SCOPE AND MOTIVATION:

To address the global concerns on the surging power demand and carbon emissions, the future smart power grid will integrate numerous distributed elements, such as renewable generators, micro power grids, energy storage units, advanced metering devices, and electric vehicle users. Effective and reliable information and communication technology (ICT) solutions play a vital role to ensure efficient two-way flows of information and power between these distributed entities. Nowadays, wireless networks with wide-area to local coverages have been widely used to monitor and communicate the real-time operating conditions of the power system. Meanwhile, some recently emerged machine type communications and vehicle-to-grid/grid-to-vehicle communications are promising to significantly improve the power grid automation. However, the heterogeneous components in the smart grid and the distinct characteristics of power system makes ICT solutions hard to accommodate the different communication requirements on bandwidth, latency, reliability and security. There are still many challenging problems concerning the proper ICT architecture and signal processing techniques applied to smart grid. In many cases, a good design for smart grid system requires interdisciplinary considerations of control, power electronics, communication, and computing techniques.

### MAIN TOPICS OF INTEREST:

The aim of the Smart Grid Communications track is to bring together researchers from both academia and industry for disseminating cutting-edge research results in theory, application and implementation in the broad areas of smart grid communications. Topics of interest include, but are not limited to:

- Networking architecture and device placement for supporting smart grid communications
- Physical layer techniques and resource allocation in smart grid communications
- Medium access control and routing protocols for smart grid systems
- Data acquisition, big data management and analytics for smart grid
- Cross-layer design and optimization techniques applied to smart grid systems
- Security and privacy issues in smart grid communications
- Cyber-physical modeling and analysis of smart grid systems
- Cyber-physical security in smart grid systems
- Integration of renewables, storage units and electric vehicles into smart grid systems
- Vehicle-to-grid and grid-to-vehicle communications
- Demand side management and demand response



- Distributed and autonomous control of micro-grids
- Edge/fog/cloud computing for smart grid systems
- Wireless power transfer and energy harvesting techniques for smart grid communications
- Economic approaches for improving smart grid efficiency
- Smart metering technologies for smart grid
- Machine to machine communications for smart grid
- Artificial intelligence and machine learning techniques for smart grid systems
- Measurement data, experimental testbeds and field trials
- Regulation and standardization efforts for smart grid

#### **SUBMISSION GUIDELINES**

**Paper Submission: 15 April 2019**

Acceptance Notification: 15 July 2019

Camera-Ready: 16 Aug 2019

The IEEE GLOBECOM 2019 website provides full instructions on paper submission format.

All submissions must be through EDAS via <https://edas.info/N25074>