

December 7-9, 2016, Greater Washington, D.C., USA

## Symposium on Signal and Information Processing for Smart Grid Infrastructures

### CALL FOR PAPERS

#### General Co-Chairs:

Nikolaos Gatsis, University of Texas at San Antonio  
Deepa Kundur, University of Toronto

#### Technical Co-Chairs:

Abdallah Farraj, University of Toronto  
Vassilis Kekatos, Virginia Tech  
Meng Wang, Rensselaer Polytechnic Institute

The marriage of information and communication technologies with traditional energy production, delivery and distribution systems aims to create a more reliable, efficient, environmentally friendly and resilient smart grid. Energy system stakeholders expect greater consumer-centricity and more open and flexible business models. At the heart of many of the technological challenges underlying this vision for a smarter grid is the need for optimization and information processing. New problems are arising that require the use of big data analytics to process continuous streams of data coming from sources such as smart meters, smart building sensors, phasor measurement units, and weather stations at geographically dispersed locations. Classical signal and information processing problems are adapting to support changing system requirements and grid characteristics. By the same token, the increased penetration of renewable energy generation, distributed storage, and controllable loads such as plug-in electric vehicles, calls for novel optimal resource management methods that respect user privacy while yield customer-centric and system-wide benefits. Moreover, computational and physical constraints within this new technical landscape must be assessed. This symposium aims to bring together researchers and practitioners in the field of signal and information processing for the optimization of smart grid infrastructures. Topics of interest include (but are not limited to):

- Optimal power flow problems and extensions
- Unit commitment and generator scheduling
- Grid component placement & transmission system planning
- Information processing for security and resilience
- Stochastic optimal control for energy systems & pricing
- Online optimization for energy management in smart grids
- Energy management for efficient and carbon-neutral data centers
- Demand-response and real-time pricing
- Robust and stochastic optimization methods for renewable energy management
- Load and renewable energy forecasting
- Power system state estimation
- Power system dynamics and transient analysis
- Load modeling and monitoring
- Measurement-based power system analysis
- Phasor Measurement Units and cyber-security
- Smart meters and energy theft detection and mitigation
- Information processing for optimizing coupled smart grid infrastructures, e.g., smart grids and water networks

**Paper Submission.** Prospective authors are invited to submit full-length papers, with up to four pages for technical content including figures and possible references, and with one additional optional 5th page containing only references. Manuscripts should be original (not submitted/published anywhere else) and written in accordance with the standard IEEE double-column paper template.

#### Important Dates

- Paper submission deadline (regular and invited): **June 5, 2016**
- Review results announced: **August 5, 2016**
- Camera-ready regular and invited papers due: **September 5, 2016**

For inquiries please contact: Nikolaos Gatsis ([Nikolaos.Gatsis@utsa.edu](mailto:Nikolaos.Gatsis@utsa.edu)), Abdallah Farraj ([abdallah.farraj@utoronto.ca](mailto:abdallah.farraj@utoronto.ca)), Vassilis Kekatos ([kekatos@vt.edu](mailto:kekatos@vt.edu)), Meng Wang ([wangm7@rpi.edu](mailto:wangm7@rpi.edu)) or Deepa Kundur ([dkundur@ece.utoronto.ca](mailto:dkundur@ece.utoronto.ca)).