

## Invited Speaker, November 20: Dr. James Momoh



### Resilient Power Grids

Smart grid system deployment has been a major point of concern and interest in the development of the future electric grid both here in the US and abroad. Variety of definitions, semantics, interpretations of its functionality have been given by designers, implementers, end users, standard and security organizations and university communities. Several functions and applications have been proposed in the electric power industry and other related fields have yet to be properly measured by the designers.

To ensure that the capability of smart grid and its functionality are understood generally stakeholders need performance metric such as resilience, sustainability and reliability and efficiency to measure its deployment.

In this presentation we plan to provide a working definition, architecture and test beds in common use as well as define some of the functionality of smart grid for its deployment in the 21st century for the development of future electric grid.

Further, we will address the grand challenge problems and options for assessing the overall performance of the future grid, which will include identification of unified knowledge from different disciplines to address some of the challenge problems, will be highlighted in the presentation.

On going research activities and open research questions to further improve the high performance smart grid, which will be of value to university researchers, developers and policy makers will be discussed.

### Biography: Dr. James Momoh

Dr. James Momoh, Professor and Director, Center for Energy Systems and Control (CESaC) Howard University, received a BS in Electrical Engineering from Howard University in 1975, a MS in Electrical Engineering from Carnegie Mellon University in 1976, a MS in Systems Engineering from the University of Pennsylvania in 1980 and a PhD in Electrical Engineering from Howard University in 1983. He was Chair of the Electrical Engineering Department at Howard University and Director of the Center for Energy Systems and Control. In 1987, Momoh received a National Science Foundation (NSF) Presidential Young Investigator Award. He was Program Director of the Power program in the Electrical and Communications Systems (ECS) Division at NSF from 2001-2004. Momoh is a Fellow at the Institute of Electronics and Electrical Engineering (IEEE) and a Distinguished Fellow at the Nigerian Society of Engineers (NSE). He was inducted as a Fellow Member of Nigerian Academy of Engineering (NAE) in 2004.

Momoh's current research activities for utility firms and government agencies span several areas in systems engineering, optimization and energy systems control of terrestrial, space and naval complex and dynamic networks. These include but are not limited to the development of multi-agent, intelligent optimization technologies; next-generation optimization for the design of future intelligent power grids; computational tools and algorithms for deregulated/restructured power economies; and advanced power management strategies for stressed power systems with uncertainty, dynamics and stochasticity of parameters. He has also led research and education outreach and collaborations in information technology, environment, energy and human capacity building to involve the United States and other countries worldwide. This has led to a number of international conferences, workshops and seminar series, and research and education in engineering programs that are sponsored by NSF, Howard University and several universities and public-private agencies.