**Synopsis: Improved Power System Protection and Control in a Robust Smart Grid**

A smart grid is a modern electric system. It has its own architecture, communications, sensors, automation, computing hardware and software to improve the efficiency, reliability, flexibility and security of the electric power supply system. In particular, the smart grid, when fully deployed, will facilitate the (i) increased use of digital information and control technologies, (ii) dynamic optimization of grid operations and resources, with full cybersecurity, (iii) deployment and grid-integration of distributed energy resources, (iv) operation of demand response and energy efficiency programs, (v) deployment of “smart technologies” for metering, communications concerning grid operations and status including distribution automation, (vi) integration of consumer-owned smart devices and technologies and (vii) deployment and control of electric vehicles and storage – thermal, mechanical and electrical. As speedy communication facilities, such as fibreoptics, microwave, GSM/GPRS, 3G/4G are becoming the integral parts of the functioning smart grid, the control and protection functions in the electric power system are becoming more effective and efficient.

**Brief Speaker Details**

Prof. SAIFUR RAHMAN, DIRECTOR, Virginia Tech Advanced Research Institute, USA

President, IEEE Power & Energy Society, 2018 and 2019



Professor Saifur Rahman is the founding director of the Advanced Research Institute at Virginia Tech, USA where he is the Joseph R. Loring professor of electrical and computer engineering. He also directs the Center for Energy and the Global Environment. He is a Life Fellow of the IEEE and an IEEE Millennium Medal winner. He was the president of the IEEE Power and Energy Society (PES) for 2018 and 2019. He was the founding editor-in-chief of the IEEE Electrification Magazine and the IEEE Transactions on Sustainable Energy. He has published over 150 journal papers and has made over five hundred conference and invited presentations. In 2006 he served on the IEEE Board of Directors as the vice president for publications. He is a distinguished lecturer for the IEEE Power & Energy Society and has lectured on renewable energy, energy efficiency, smart grid, energy internet, blockchain, IoT sensor integration, etc. in over 30 countries. He is the founder of BEM Controls, LLC, a Virginia (USA)-based software company providing building energy management solutions. He served as the chair of the US National Science Foundation Advisory Committee for International Science and Engineering from 2010 to 2013. He has conducted several energy efficiency, blockchain and sensor integration projects for Duke Energy, Tokyo Electric Power Company, the US National Science Foundation, the US Department of Defense, the US Department of Energy and the State of Virginia. He has a PhD in electrical engineering from Virginia Tech.