

LIVE WEBINAR

3RD June 2020 | 7:00PM – 8:00PM (SGT)

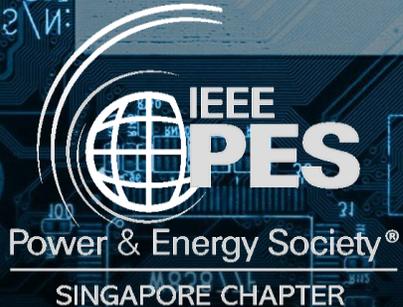
IEEE POWER & ENERGY SOCIETY SINGAPORE CHAPTER & IEEE SINGAPORE SECTION

An Energy Internet Platform for Sensor-driven Transactive
Energy Applications



Presented by Saifur Rahman
Joseph Loring Professor & Director -
Advanced Research Institute,
Virginia Tech, USA

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Live Webinar on “An Energy Internet Platform for Sensor-driven Transactive Energy Applications”

Presented by Saifur Rahman, PhD (*Candidate for IEEE President*)
Joseph Loring Professor & Director
Advanced Research Institute, Virginia Tech, USA

Date: 3rd June, 7-8 pm (SGT)/ (GMT+8)

Organized by: IEEE PES Singapore Chapter & IEEE Singapore Section

Abstract

For over a century, the structure of the electric utility business has been a supplier-driven model with consumers receiving and paying for electricity without any participation in how the electricity is produced, transmitted, or delivered. However, advances in renewable energy technologies (e.g., PV panels), battery storage, smart devices, as well as financing models have given rise to prosumers - electricity consumers - who can produce energy from rooftop PV while also consuming from the grid. However, there are no widely available and effective tools to facilitate consumer participation in the energy market. A software platform, called the “Energy Internet” (EI) platform, is being developed at Virginia Tech, which uses the blockchain technology to securely manage data, communications, and control of devices among different participants on a large scale. Specifically, the focus is on these issues: (i) integration with power management systems; (ii) scalability of the technology; and (iii) cybersecurity capabilities. This structure allows the development and testing of a functioning energy internet platform for transactive energy and demand response applications. This cyber physical platform can help to design and develop a local smart electricity market where even small prosumers can contribute to a market-oriented power system.

Biography



Professor Saifur Rahman is the founding director of the Advanced Research Institute (www.ari.vt.edu) 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 (www.ceage.vt.edu). 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 140 journal papers and has made over four 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.

