

Smart Grid: Is it the Right Choice for the Future?

Speaker:

Dr. Khalid Ahmed

Senior Lecturer

University of Strathclyde, UK.

Time: 1:30 to 2:30 pm.

Day / Date: Monday: Nov. 18th.

Location: Room : 59-2016

Abstract:

Smart grid is not a single concept but rather a combination of technologies and methods intended to renew the existing conventional grid in order to improve flexibility, availability, energy efficiency, and costs. Smart grid includes three main pillars: information technology, communications technology and power production/delivery technology in the whole value chain from production to consumption. The main objective of the talk is to discuss the smart grids with clarifying different definitions, approaches, challenges, future smart home, key technologies, development, advantages and disadvantages. Key technologies include power system equipment development, communications, security, measurement sensors, demand response, advanced power electronics components, PHEV/PEV integration, Vehicle-to-Grid, and electricity market. An overview of such technologies will be presented with more focus on distributed generation technologies and energy storage including structure, control, and interactions with the grid. The presentation is supported with some simulations of MATLAB/SIMULINK software.

About the speaker

Dr Khaled Ahmed received his PhD degree from University of Strathclyde in 2008. In 2011, he was appointed as a Lecturer in Power Electronics at the University of Aberdeen, and was promoted to Senior Lecturer in 2015. He was appointed as a Professor at Alexandria University, Egypt since 2019. Currently, He is a Senior Lecturer in power electronics at the University of Strathclyde (PEDEC Group). He has over 15 years of research experience in power electronics, renewable energy integration, solar energy systems, off-shore wind energy, smart grids, and HVDC. He built a research portfolio of £2.5 million as Primary and Co-Investigator on projects funded by EPSRC, the EU, the British Council, the Royal Society, Encompass, the Carnegie Trust, the Scottish Funding Council, the Oil and Gas Technology Centre, and industry. He has extensive experience of working with industry, having collaborated with Rolls-Royce, Alstom, Aker Solutions, Proven, Technip Umbilicals Ltd, and Scottish and Southern Energy (SSE). Dr Ahmed has published over 96 technical papers in refereed journals and conferences, 1 book, 1 book chapter, and a patent (PCT/GB2017/051364). Total citations of 3474 and h-index of 25. Two of his journal papers are rated in the top 1% of those cited in the academic field of Engineering (Web of Science, April 2019). I have supervised/co-supervised 18 PhD students: 9 have graduated, and 9 are ongoing. He is a senior member of IEEE, Cigre WB B4.79 member, IET member, Fellow at Higher Education Academy and Chartered Engineer.