

**Department of Electrical Engineering
Presents a Faculty Candidate Seminar on**

**Digital Twinned and Future-proof Electrical Energy
Infrastructure for Net-Zero Economy**

by

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Abstract

The UK's 2050 Net-Zero target requires electrification of heat and transport which will exceed the current grid capacity. Energy storage, either short-term battery storage or long-term hydrogen in conjunction with the intermittent renewables like wind and solar farms, will greatly change how power flow through the electrical grid hence the grid infrastructure. Cost effective grid solutions need to integrate electricity demand with flexible energy sources and should be technically and financially replicable across the UK to ensure timely Net-Zero rollout. It is important to understand how our current electrical power infrastructure should evolve with future energy scenarios, as any electrical energy infrastructure will require a long planning cycle and massive capital investment. The presentation examines the challenges in planning of the electrical power networks and looks into the possible solutions such as digital twinned network infrastructure in order to achieve a cost effective Net-Zero for the future.

Biography



Prof Zhongdong Wang FIEEE FIET PhD (UMIST, 1999) MSc & BSc (Tsinghua, 1993, 1991)

She is a Professor of Electrical Power Engineering, Head of Exeter Energy and Director of the Centre for Smart Grid at the University of Exeter. Her research interests lie in Smart Grids and Low Carbon Electrical Energy Networks, in particular condition monitoring techniques, thermal, electrical transient and magnetic modelling techniques for power system networks, dielectric insulation ageing mechanisms, alternative environmentally friendly liquid insulating materials, and transformer asset management. She is also the UK Regular Member for CIGRE Study Committee A2 Power Transformers and Reactors, an expert member of IEC and BSI.

Date	: 22 May 2023 (Monday)
Time	: 2:00pm - 3:00pm
Language	: English
Venue	: Room B6605, YEUNG

**** ALL ARE WELCOME ****

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