

Research Centre for Green Energy, Transport and Building (RCGETB)

Research Seminar on Development of Carbon Neutralisation and Smart City

DATE: 21 July 2022 (Thursday)

TIME: 2:00 pm - 4:00 pm

VENUE: Online via ZOOM



Speaker: Professor Wei HAN

Research Associate Professor
Division of Environment and Sustainability
The Hong Kong University of Science and Technology

Topic: Towards Better and Sustainable Environment: Air Purification and Disinfection Technologies

Biography

Prof. HAN is a Research Associate Professor of the Division of Environment and Sustainability at HKUST, and the Associate Director of HKUST-CIL Joint Laboratory of Environmental Health Technologies. His research interests are functional materials and devices for environmental and healthcare applications. He has authored/co-authored more than 50 publications. As an enthusiastic proponent of technology translation, he has developed 11 inventions with 16 granted patents and 20 patent applications. Two of the inventions have been commercialised. He is a recipient of the 2020 Asian Universities Alliance Scholars Award and the 2018 Gold Medal in the 46th International Exhibition of Inventions Geneva.

Abstract

Air quality is closely related to public health and human well-being. Volatile organic compounds (VOCs), inorganic particulate matter and bioaerosols are major indoor air pollutants. Conventional air purification systems based on filtration and adsorption can effectively capture airborne particles and VOCs. However, microorganisms captured by air filters can remain viable, and further grow to colonize air filters, resulting in decreased air filtration efficiency and posing secondary contamination risk. This talk will demonstrate R&D, technology transfer and social impact during the COVID-19 pandemic of new air purification and disinfection technologies developed by the HKUST interdisciplinary team.



Speaker: Ir Mr Wai-kin LEUNG

Head of Customer Business Development
The Hongkong Electric Co., Ltd. (HK Electric)

Topic: HK Electric's Smart Power Services – Decarbonisation through Electrification

Biography

Ir (Engineer) LEUNG has been working in the power industry for over 25 years, with solid experiences in power plant and electric vehicle charging infrastructure projects, formulation and implementation of the local electricity market and regulatory regime. He is now the Head of Customer Business Development of HK Electric, overseeing the funding and service schemes which help customers and the community in decarbonisation. His responsible areas cover distributed renewable energy, renewable energy certificates, energy efficiency, electric mobility, electrification, smart and low-carbon lifestyle, and other decarbonisation and sustainability solutions.

Abstract

To respond to the Paris Agreement, China is committed to achieving peak carbon dioxide emissions before 2030 and carbon neutrality before 2060. As an international city of China, the Hong Kong Special Administrative Region pledged in 2020 to achieve carbon neutrality before 2050. As a key stakeholder in combating climate change, HK Electric has been rendering full support to the HKSAR Government and the community in turning Hong Kong into a smart zero-carbon caring city. This presentation will cover the decarbonisation means suiting Hong Kong's unique compact vertical built environment in particular electrification means under HK Electric's Smart Power Services.



Speaker: Professor Z.Y. DONG

Professor of School of Electrical and Electronic Engineering
Nanyang Technological University, Singapore

Topic: Smart Grid Cyber Security with Blockchain Technologies

Biography

Prof. DONG is a Professor at Nanyang Technological University, Singapore. His previous roles include SHARP professor and Director of UNSW Digital Grid Futures Institute at the University of New South Wales, and Director of Australian Research Council Research Hub for Integrated Energy Storage Solutions. He also worked as Ausgrid Chair Professor and Director of the Ausgrid Centre for Intelligent Electricity Networks providing R&D support for the AUD500m Smart Grid, Smart City national demonstration project of Australia. His research interests include power system planning and stability, smart grid and smart cities, renewable energy systems, electricity market, and computational methods for power engineering applications. He is serving as an editor for several IEEE Transactions and IET journals. He is an international scientific advisory board member of the African Centre of Excellence in Energy for Sustainable Development (ACE-ESD).

Abstract

Cyber security is increasingly a concern for smart grids with rapidly increasing connectivity. These attacks focus on compromising smart grid components, services, and operations. Blockchain technology provides an attractive solution for enabling smart grid security due to its transparency, immutability, and decentralisation characteristics. In this talk, a blockchain-enabled security system will be presented to mitigate smart grid cyber-attacks and further facilitate automated security agreements across the value chain of the smart grids. A prototype of our supply chain system on the Ethereum blockchain will be presented as well.

All are welcome!
Register Now!



Kindly make the reservation at <https://forms.office.com/r/iY2IfTwPfx>.

This Seminar is fully supported by the grants from the Research Grants Council of the Hong Kong Special Administrative Region, China (Project No. UGC/IDS(R)24/20).

For enquiries, please contact Ms Cherry YU at cherry.yu@speed-polyu.edu.hk.