SEMINAR ANNOUNCEMENT

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING
COLLEGE OF DESIGN AND ENGINEERING
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Area: Power and Energy Systems (PES)

Host: Prof Dipti Srinivasan

This seminar is co-organized by GEMS, ECE, NUS and IEEE PES Singapore Chapter Student branch.

TOPIC	:	**Photovoltaic Power Forecasting: Methods, Challenges, and Recent Advances**
SPEAKER	:	**Mr Kai Wang** **PhD candidate, Southeast University**
DATE	:	**Tuesday, 10 March 2026**
TIME	:	**7:45PM-8:45PM**
VENUE	:	**E3-06-01, Block E3, National University of Singapore**

ABSTRACT

Photovoltaic (PV) power forecasting plays an important role in modern smart grid operation as the penetration of renewable energy continues to increase. Accurate forecasting helps improve grid stability, support energy management, and enables the large-scale integration of solar energy. However, PV power generation strongly depends on weather conditions and is influenced by many factors, including solar irradiance, temperature, and atmospheric conditions. In particular, changes in cloud cover can cause rapid fluctuations in PV output, making accurate forecasting difficult, especially for short-term and ultra-short-term horizons. This lecture introduces the basic concepts and common methods of PV power forecasting, discusses the key challenges in this field, and briefly presents recent research based on satellite cloud imagery.

BIOGRAPHY

Kai Wang is a Ph.D. candidate at Southeast University and a visiting researcher at the National University of Singapore. His research focuses on ultra-short-term photovoltaic power forecasting using multi-source meteorological data and deep learning techniques, particularly in multimodal learning, spatio-temporal prediction, and probabilistic forecasting. He has published multiple papers in leading international journals, including IEEE Transactions on Sustainable Energy, Energy Conversion and Management, and Applied Energy.

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