THE HONG KONG INSTITUTION OF ENGINEERS
香港工程師學會

Electrical Division
電機分部

Technical Seminar

Grid-forming Inverter for Power System Restoration

Date: 18th Feb 2025 (Tue)
Time: 6:30PM – 8:00PM
Venue: Chan Yat Mei Sophie Room, 9/F, HKIE HQ and online
Language: Cantonese with English terminology and PPT
Organized by: HKIE Electrical division

Registration

With increasing demands on electrical power system, there is a need to achieve a more flexible and reliable power grid. Swift and robust restoration are crucial when power failures occur. Besides conventional diesel generators and battery energy storage system, Grid-forming inverter (GFMI) is a new trend in power system restoration. It can produce inherent voltage and frequency reference, allowing us to adopt Renewable Energy Sources in the microgrid and restore the power independently.

This seminar demonstrates the dynamic responses between GFMI and conventional diesel generator. The use of closed-loop Power Hardware-in-the-Loop (PHIL) emulations will facilitate the testing of GFMI under the Loss of Mains (LoM) event with the aid of Real-time Digital Simulator. Simulation results indicate that PV system with GFMI strategy has the potential application on power system restoration.

Speaker: Ir. Chow Man Hin

Jason Chow Man Hin holds a BEng degree in Electrical and Electronic Engineering from the University of Sheffield (2017) and an MSc degree in the same discipline from the University of Hong Kong (2018). With a robust academic foundation and a relentless passion for innovation, Jason has cultivated extensive expertise in power engineering, electrical consultancy, and advanced research.

Currently, Jason serves as a Lecturer at the Hong Kong Institute of Vocational Education (VTC IVE), where he not only educates the next generation of engineers but also spearheads cutting-edge initiatives as the person-in-charge of VTC's CLP Power Engineering Laboratory. Under his leadership, the laboratory has become a hub for innovation and applied research, fostering collaboration between academia and industry. Jason has successfully mentored numerous student teams, driving award-winning projects that push the boundaries of practical engineering solutions.

Jason’s commitment to professional excellence is underscored by his Chartered Engineer status and memberships in prestigious institutions, including the Institution of Engineering and Technology (IET), the Institute of Measurement and Control (InstMC), and the Hong Kong Institution of Engineers (HKIE). He is also pursuing a part-time PhD at the University of Hong Kong, where his research focuses on critical areas such as power system control, renewable energy integration, and the development of smart grids.

Among his notable achievements, Jason has made significant strides in advancing the understanding and application of grid-forming inverters for power system restoration. His pioneering work utilizes Power-Hardware-in-the-Loop (PHIL) and Digital Twin methodologies, coupled with Real-Time Digital Simulation, to create robust frameworks for modern grid stability and resilience. His latest research findings have been featured in Frontiers in Energy Research, offering valuable insights into the future of energy systems.

Jason’s dedication to bridging the gap between theoretical research and real-world applications has not only earned him recognition in the academic and engineering communities but also solidified his reputation as a dynamic innovator in power systems engineering.

Technical Seminar

Grid-forming Inverter for Power System Restoration

Registration

- ✓ This seminar will be held **Chan Yat Mei Sophie Room, 9/F, HKIE HQ**
- ✓ Please register online at this link:

https://docs.google.com/forms/d/e/1FAIpQLSfHLwhQYrT6cd0VrOj7uyBDNV-CN3neZoRPaiYDQ1-Ajz0FUQ/viewform

- ✓ Due to limited seats, the application will be accepted on a first-come first-served basis. Priority will be given to members of Electrical Division. Successful applicants will be notified 2 days before the seminar.
- ✓ The deadline for registration is 16 Feb 2025. Successful participants for the seminar will receive email notification by 17 Feb 2025.
- ✓ Any applicants not getting the confirmation email by 17 Feb 2025 are assumed unsuccessful.