

Collaborative Distributed Control on Smart Micro-Grid Energy Management

SPEAKER Prof Mo-Yuen CHOW

Professor
Department of Electrical and
Computer Engineering
North Carolina State University
USA

DATE 13 November 2017 (Monday)

TIME 3:30 pm - 4:30 pm

VENUE CS Seminar Room, Y6405
6th Floor, Yellow Zone
Yeung Kin Man Academic Building
City University of Hong Kong
83 Tat Chee Avenue
Kowloon Tong

ABSTRACT

The power grid has been at the core of national critical infrastructures and industrial control systems for decades. With the rapid advancement and use of renewable energy resources, Internet of Things (IoT), embedded systems, and wireless communication technologies, the legacy power grid is evolving into the micro/smart grids to provide a promising solution to the ever-increasing demands of power quality, efficiency, reliability, safety, economy, resilience/security, and environmental friendliness. The large-scale adoption of new devices and the presence of vast quantities of data have also created new challenges in the management and control of micro/smart grids. Thus, new opportunities have emerged for applying novel control schemes, optimization strategies, and big data technologies to make smart grids "smarter".

This presentation will provide a brief overview of the energy sector revolution from the legacy power grid, through micro/smart grids to smarter grids, including the motivations (Why?), challenges (What?) and enabling technologies (How?) of each stage in this inevitable transition. This seminar will highlight one technology being developed in ADAC (Advanced Diagnosis, Automation and Control) Lab at North Carolina State University on the Cooperative distributed energy management to illustrate some current efforts in making micro/smart grids smarter. The presentation will conclude with an outlook of our future work to contribute to the "smarter grids".

BIOGRAPHY

Prof Mo-Yuen Chow earned his degree in Electrical and Computer Engineering from the University of Wisconsin-Madison (B.S., 1982); and Cornell University (M. Eng., 1983; Ph.D., 1987). He joined the Department of Electrical and Computer Engineering at North Carolina State University (NCSU) as an Assistant Professor in 1987, became an Associate Professor in 1993, and has been a Professor since 1999. Prof Chow is a Changjiang Scholar and a Visiting Professor at Zhejiang University.

Prof Chow's recent research focuses on distributed control, big data, and fault management on smart grids, and batteries. Prof Chow has established the Advanced Diagnosis, Automation, and Control Laboratory at NCSU. He has published one book, several book chapters, and more than two hundred journals and conference articles. He is an IEEE Fellow, a Co-Editor-in-Chief of IEEE Transaction on Industrial Informatics, and was the Editor-in-Chief of IEEE Transactions on Industrial Electronics 2010-2012. He has received the IEEE Region-3 Joseph M. Biedenbach Outstanding Engineering Educator Award, the IEEE ENCS Outstanding Engineering Educator Award, the IEEE ENCS Service Award, the IEEE Industrial Electronics Society Anthony J Hornfeck Service Award. He is a Distinguished Lecturer of IEEE Industrial Electronics Society.

All are welcome!



In case of questions, please contact Prof KWONG Tak Wu Sam at Tel: 3442 2907, E-mail: cssamk@cityu.edu.hk, or visit the CS Departmental Seminar Web at <http://www.cs.cityu.edu.hk/news/seminars/seminars.html>.

