

Technical Presentation Session

Sponsored by IAS Young Professionals and Alumni of CMD

POWER AND ENERGY

The session reaches out keynote lecture and YP presentation opportunities. Session organizers may select and set-up the own event modularly.

Keynote Lectures



[Wei-Jen Lee](#), PhD, PE | Professor and Director, Energy Systems Research Center, The University of Arlington | IAS President Elect 2019-2020

Biography: Professor Lee received the B.S. and M.S. degrees from National Taiwan University, Taipei, Taiwan., and the Ph.D. degree from the University of Texas, Arlington, in 1978, 1980, and 1985, respectively, all in Electrical Engineering.

In 1986, he joined the University of Texas at Arlington, where he is currently a professor of the Electrical Engineering Department and the director of the Energy Systems Research Center.

He has been involved in the revision of IEEE Std. 141, 339, 551, 739, 1584, and 3002.8 development. He is the President Elect of the IEEE Industry Application Society (IAS) and an editor of IEEE Transactions on Industry Applications and IAS Magazine. He is a member of IEEE Fellow Committee. He is the project manager of IEEE/NFPA Collaboration on Arc Flash Phenomena Research Project.

Prof. Lee has been involved in research on Utility Deregulation, Renewable Energy, Arc Flash Hazards and Electrical Safety, Smart Grid, MicroGrid, Industrial Internet of Things (IIoT) and Virtual Power Plants (VPP), AI for Load, Price, and Wind Capacity Forecasting, Power Quality, Distribution Automation, Demand Response, Power Systems Analysis, Short Circuit Analysis and Relay Coordination, Distributed Energy Resources, Energy Storage System, PEV Charging Infrastructure Design, AMI and Big Data, On Line Real Time Equipment Diagnostic and Prognostic System, and Microcomputer Based Instrument for Power Systems Monitoring, Measurement, Control, and Protection. He has served as the primary investigator (PI) or Co-PI of over one hundred funded research projects with the total amount exceed US\$17 million dollars. He has published more than one hundred and seventy-five journal papers and two hundred ninety conference proceedings. He has provided on-site training courses for power engineers in Panama, China, Taiwan, Korea, Saudi Arabia, Thailand, and Singapore. He has refereed numerous technical papers for IEEE, IET, and other professional organizations.

Prof. Lee is a Fellow of IEEE and registered Professional Engineer in the State of Texas.

Keynote Lecture 4

Battery Storage Technologies & Their Potential Applications in the Power Systems

Power Point Presentation, 30 min

Abstract

Electrical power infrastructures are changing dramatically around the globe due to smart grid initiatives, the establishment of renewables and the resulting distributed nature of creating electricity, the need for independent microgrids to ensure grid reliability, new demands from end users, the need to reduce greenhouse gas emissions, as well as the capability to accommodate mixed energy resources. As a result, the power network faces great challenges in generation, transmission and distribution to meet new and many times unpredictable demands of providing coherent electricity supply. Battery Energy Storage (BES) has been considered a game-changer with a number of technologies that have great potential in meeting these challenges.

However, the wide variety of options and complex performance matrices can make it difficult to appraise specific BES technology for particular applications. This presentation intends to contribute information that will give a Smart Grid user a clearer picture of the state-of-the-art electrochemical technologies available, and where they would be suited for integration into a power generation and distribution system.

Lectures of IAS YPs and CMD Alumni



[Nishad Mendis](#), BSc(Eng), MBA, PhD, SMIEEE

Biography: Nishad Mendis is a Senior Engineer working in DNV. GL's Energy Advisory group in Melbourne, Australia. Before joining DNV GL, Nishad worked for Eltek as a Solutions Engineer working on the design of the implementation of energy storage-based applications, Alstom Grid as a Design and Commissioning Engineer for HV substations and Noratel as a transformer Design Engineer. Nishad has over 15 years of professional experience, including a Ph.D. from the University of Wollongong, Australia, and a Bachelor of Electrical Engineering with honors from the University of Moratuwa, Sri Lanka. He obtained his M.B.A. in Global Sustainable Management with Anaheim University, U.S.A. Nishad also currently holds IEEE Senior membership and serves as Executive Board Member for the IEEE Industrial Application Society. Also, he is serving as an Honorary Fellow for the School of Electrical Engineering for Deakin University, Australia. He is experienced in engineering, project management, sales and tendering, research and development areas.

Australian battery performance Standard

Power Point presentation, 15 min

Abstract: Australia has one of the highest proportions of households with PV solar systems installed in the world. With relatively high retail electricity prices, comparatively low feed-in tariff rates for exported PV energy generation and the rapid reduction in energy storage costs, the market for behind-the-meter battery systems has the potential to increase dramatically. Two critical aspects for battery systems are safety and performance. At present, there is limited information available to allow end-users to make informed choices regarding the performance of battery systems.

The objective of this ARENA and Victorian Government co-funded project is to produce a draft Performance Standard (Draft Standard), for Battery Energy Storage Systems (BESS) connected to domestic/small commercial PV systems. The Draft Standard shall comprise a series of performance testing protocols & performance-metric reporting methods for manufacturers and system integrators. This is to ensure that end users are better informed regarding the expected performance of a BESS, in order to compare systems on a like-for-like basis. The presentation broadly discusses the project outcomes and the battery testing framework.

Energy storage Systems; Enabler of renewable energy uptake in Australia

Power Point presentation, 15 min

Abstract: This presentation will include a number of practical applications (domestic and utility scale) of Li-ion battery energy storage system that have been implemented in Australia.

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