The energy industry is experiencing significant changes due to rapid technology transformation, security risks, environmental concerns and climate variations, evolving consumer needs, and regulatory requirements. Modern society has reached a point where virtually every crucial economic and social function depends on the secure, reliable operation of power and energy infrastructures. The initiatives undertaken from information technology infrastructure assessments, and from the development of new industry standards to conformance and compliance, affect the way in which the grid is to be operated and maintained in the future.

The lecture focused on business models and supply chain realities within the scope of utility technology transformation, strategies and operational aspects of managing grid systems and equipment assets, to building a more resilient and efficient grid to enhance power systems organically and digitally. The lively, interactive lecture was attended by 45 participants made up of senior professionals and consultants.

The Joint IEEE Industry Applications Society (IAS)/IEEE Power Electronics Society (PELS) Student Branch Chapter (SBC) at the National University of Singapore (NUS) hosted IAS Distinguished Lecturer Prof. Mohammad Rezwan Khan on 8 November 2017. A Plexim GmbH representative was also invited to conduct a workshop that provided hands-on training for attendees who were introduced to a new power electronics simulation platform. Additionally, research-sharing sessions were also held, providing an interactive platform for researchers to share their ongoing work.

**Distinguished Lecturer Prof. Khan**

Prof. Khan is a Senior Member of the IEEE and the vice chancellor of the United International University (UIU), Dhaka, Bangladesh. His lectures, “Solar PV (Photovoltaic)-Based Stand-Alone Grid Systems for Developing Countries: Advantages of dc Systems” and “The Future of Power Systems: A Comparison Between dc and ac,” shed light on the recent progress within the area of solar PV home systems.

During his presentation, Prof. Khan gave a description of a small-sized, PV-based stand-alone system, its main components, and its mode of operation with specific reference to a developing country such as Bangladesh. Prof. Khan also presented a few details about ongoing research projects at UIU, specifically, the diversification of solar PV applications. Innovative applications, e.g., solar mini cold storage, a solar e-cooker, and a solar ferryboat, developed by Prof. Khan and his...
A team of researchers caught the interest of those in attendance.

At his later session, Prof. Khan discussed recent paradigm shifts in the area of power systems toward dc transmission and distribution. He provided insight into the development of power electronics and explained how it helps in the resurrection of dc power systems. He elaborated on the advantages of dc over ac systems (i.e., dc systems can be more efficient and cost-effective) and concluded the presentation by proposing steps for solving challenges in dc systems and for the migration from ac to dc. Twenty-five participants attended this technical seminar, all of whom provided positive feedback, noting how the development of electronics has changed the technological base of the power system. Participants freely interacted with Prof. Khan and discussed his ideas on solar home systems and dc grids.

**Power Electronics Systems Workshop**

On 9 November 2017, the Chapter invited a representative from Plexim GmbH, a global leader in simulation software for power electronics systems (PLECS), for a hands-on training event (Figure 1). Min Luo, a field application engineer at Plexim GmbH, and Olivier Wu, the managing director of Infomatic Pte. Ltd., conducted the training. During the workshop, attendees were introduced to the PLECS simulation platform, an autonomous software package for the time-domain simulation of power electronics systems, and the PLECS RT Box, a state-of-the-art real-time simulator for power electronics.

During the morning session, attendees learned about the modeling techniques for the simulation of power electronics converters, including thermal design aspects using PLECS. In the afternoon session, Luo demonstrated the versatile capabilities of the RT Box, which can be used for both real-time hardware-in-the-loop testing and rapid control prototyping.

All of the 16 participants who attended this daylong workshop provided positive feedback, noting how the PLECS simulation platform and RT Box can speed up the power electronic converter development by reducing design time. The
hands-on training provided tips, techniques, and valuable insight for the attendees. In addition to the technical aspects, the workshop offered an opportunity for attendees to connect with the developers of PLECS. The SBC plans to organize similar events on a regular basis.

Research-Sharing Sessions
The Chapter regularly organizes research-sharing sessions (RSSs) where researchers from Power and Energy Systems group at the Department of Electrical and Computer Engineering present their ongoing work. These sessions serve as an interactive platform for the researchers to share their ideas and discuss any issues they are facing. They are also helpful for those who want to practice their presentations before presenting their work at a conference or a Ph.D. oral defense. The SBC has organized seven RSSs in 2017, which were attended by IEEE Members and guests.

FIG 1 (a) Prof. M. Rezwan Khan with lecture attendees and (b) the PLECS team with event participants. (Photo courtesy of Sandeep Kolluri.)

by Fabio Crescimbini and Luca Solero

Joint IEEE IAS/PELS Central and South Italy Chapter Cosponsor Power Electronics and Applications Summer Course

The joint IEEE Industry Applications Society (IAS)/Power Electronics Society (PELS) Central and South Italy Chapter cosponsored the third Roma Tre summer course on power electronics and applications at the Center for Power Electronics and Drives, Roma Tre University, 3–14 July 2017. This event was organized in cooperation with Huawei Technologies, Infineon Technologies, National Instruments Corporation, ROHM Semiconductor, Semikron, Sky Research, the University of Nottingham, and the University of Roma Tor Vergata. The European Center for Power Electronics provided technical sponsorship.

The two-week course included 30 hours of lessons and three European credits available for each week. Lectures took place during the first week of the course, and laboratory