were invited to introduce themselves and share their interests in power electronics. During the welcome reception, Dr. Grant Pitel, MPE chief technology officer (CTO) and PPPEAC chair, shared his vision for the organization. He remarked on the Pennsylvania–New Jersey region's diverse group of power electronics providers and expressed his hope to engage the community through various activities. The opening remarks were followed by extended introductions from 13 speakers who described the roles of their respective companies/institutions in the field. These talks helped stimulate the exchange of ideas and generated discussions, with the potential for later collaborations. The presenters were

- Grant Pitel, CTO, MPE, PPPEAC chair
- Minjie Chen, assistant professor, Princeton University, PPPEAC treasurer
- Ira Pitel, founder, MPE
- Xiaonan Lu, assistant professor, Temple University, PPPEAC secretary
- Pete Losee, manager of device technology, United SiC, Monmouth Junction, New Jersey
- Wenxin Liu, associate professor, Lehigh University, Bethlehem, Pennsylvania

FIG 2 Prof. Seth Sanders discusses flywheel energy storage.

- Vishram Deshpande, director of power-supply development, NWL Inc., Bordentown, New Jersey
- Fei Lu, assistant professor, Drexel University, Philadelphia
- Hanan Fishman, president, Alencon Systems, Hatboro, Pennsylvania
- Arash Khoshkbar-Sadigh, assistant professor, Pennsylvania State University, State College
- Xiaofan Wu, research scientist, Siemens
- Ben Cohen, vice president of engineering, Momentum Dynamics, Malvern, Pennsylvania
- Thomas Lawson, founder and president, CogniPower, Malvern
- Jianwu Cao, senior power electronics engineer, EnerSys, Reading, Pennsylvania.

PPPEAC will commit itself to initializing and vitalizing collaborations between local industry and academia in the field of power electronics. Regular and recurring Chapter meetings will be organized, rotating between New Jersey and Pennsylvania. Also, in coordination with the IEEE, PPPEAC will host various activities including field trips, IEEE Distinguished Lectures, local educational seminars, and similar events.

On 3 October 2019, PPPEAC invited Prof. Seth Sanders from the University of California, Berkeley, to give a seminar, "Flywheel Energy Storage: A Utility-Scale Energy Solution for the 21st Century," which was also part of the Andlinger Center Highlighted Seminar Series (Figure 2). The presentation reviewed the energy-storage landscape and focused on flywheel energy storage to meet utilities' operational challenges.

The next PPPEAC meeting is scheduled to be held in February or March 2020. To join the PPPEAC and learn about future activities, please register at http://bit.ly/2My8Ove.

---

by Karthik Palaniappan

IEEE PELS Lecture on Wide-Bandgap Power Electronics

On 6 November 2019, Prof. Krishna Shenai, a Distinguished Lecturer (DL) of the IEEE Power Electronics Society (PELS), delivered an insightful speech, "Wide-Bandgap (WBG) Power Electronics: Is This the Future of Energy Economy?" at Milwaukee Tools, Wisconsin. The event was sponsored by the joint IEEE Industry Applications Society/Industrial Electronics Society/Power & Energy Society/PELS Milwaukee Chapter, IEEE Milwaukee Section, and Milwaukee Tools. It was attended by approximately 100 engineers, faculty, and students from the University of Wisconsin–Milwaukee, Milwaukee School of Engineering, and Marquette University, Milwaukee (Figure 1). A facilities tour preceded the lecture, and a gala dinner and raffle concluded the event, all of which was sponsored by Milwaukee Tools.

Milwaukee Tools Vice President Kevin Staszak opened the meeting with an introduction to the company and its products. Afterward, IEEE Milwaukee Section Chair-Elect Karthik Palaniappan introduced Prof. Shenai, who delivered the lecture. He discussed

Digital Object Identifier 10.1109/MPEL.2019.2959888
Date of current version: 19 February 2020

the events leading to his WBG power electronics proposal during the 1980s, when he worked at the General Electric Research Center in Schenectady, New York. He elaborated on the history, evolution, and impending challenges in this critical field of technology. Prof. Shenai attributed WBG power technologies' slow progress and market penetration to fragmentation in the power electronics supply chain and fundamental problems associated with the crystal-growth process that lead to a high number of defects and an increased manufacturing cost.

FIG 1 Approximately 100 engineers, faculty, and students from the Milwaukee area attend Prof. Shenai's IEEE Distinguished Lecture on WBG electronics delivered at Milwaukee Tools on 6 November 2019.

Throughout the lecture, Prof. Shenai emphasized the reliability of power systems components and remarked that future electric-utility, transportation, and cyber infrastructures will demand power systems with 1 million hours of mean time between failures (MTBFs). He substantiated that claim by describing extensive investigations during the 1990s that delivered the high-end computer-server power supplies with 1 million hours of MTBFs that are the backbones of today's Internet infrastructure. He also illustrated an innovative methodology for the design of compact and robust power systems using WBG power devices and the need to develop a radically new crystal-growth process, which is the subject of an article in the December 2019 issue of *Proceedings of the IEEE*.

The lecture concluded with lively discussions and exchanges of ideas. The proceeding was well received and turned out to be the largest event of the year for the IEEE Milwaukee Section, since it drew participants from out of state, including Region 4 Industrial Engagement Chair Jim Riess.