



ANNUAL CONFERENCE OF THE IEEE INDUSTRIAL ELECTRONICS SOCIETY

Chicago | Illinois, November 3-6, 2024

Special Session on

Advanced Power Electronics Converters for xEV

Organized and co-chaired by:

Dr. Minh-Khai Nguyen, Advanced Propulsion Group, General Motors, USA

Prof. Woo-Young Choi, Jeonbuk National Univ./ PowerPartner Co. Ltd., South Korea

Prof. Dmitri Vinnikov, Tallinn University of Technology, Tallinn, Estonia

minh-khai.nguyen@gm.com

wychoi@jbnu.ac.kr

dmitri.vinnikov@taltech.ee

Call for Papers

Technical Outline of the Session and Topics:

In order to achieve carbon neutrality targets, we are moving from internal combustion engine vehicles to electric vehicles and their extended variants (xEV) such as Battery Electric Vehicles (BEVs), Plug-in Hybrid Electric Vehicles (PHEVs), Hybrid Electric Vehicles (HEVs), and Fuel Cell Electric Vehicles (FCEVs). The demand has been significantly increased for energy-efficient electric-powered devices, along with strict regulations to reduce emission. Power electronics development has been the major impacting factors for xEV market. High manufacturing costs and design difficulty for integrating power electronics components become major issues for E-mobility industry. The purpose of this special session is to collate innovative research on power electronics solutions for xEV. To address recent breakthroughs in power electronics technology for xEV, the following characteristics should be explored in depth: high power efficiency, high power density, high reliability, and competitive cost. This special session welcomes the submission of manuscripts for devices, circuits, and control techniques for power electronics components in xEV.

Topics of the Session include, but are not limited to:

- Advanced power converters for xEV
- Advanced auxiliary power module for xEV
- Advanced power inverter topologies for xEV
- Application of wide bandgap devices for xEV
- High frequency, high power density on-board chargers
- Fault-tolerance control of xEV power converters
- Charging architectures and technologies
- Dynamic wireless charging technologies
- Discharged power from vehicle to load (V2L), to grid (V2G), and to home (V2H)

Author's schedule:

Deadline for submission of special session papers April 15, 2024

Notification of acceptance June 10, 2024

Deadline for submission of final manuscript July 01, 2024

Early submission is highly encouraged for early decision notifications!



CHICAGO

All the instructions for paper submission are included in the conference website:

www.iecon-2024.org