

Annual Conference of the IEEE Industrial Electronics Society (IECON 2021)

Special Session on

“Efficient On-board and Off-board Charging Solutions for 800 V Systems in Transportation Electrification”

Organized by

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Affiliation: Associate Professor, P V P Siddhartha Institute of Technology, India

Call for Papers

Theme:

Electric vehicles are experiencing a vast expansion of their technology in vehicle variants from two-wheelers to mass utility public transportation. One outstanding key challenge is to establish an efficient charging infrastructure for various voltage levels. Moreover, the paradigm shift in the automotive industry from low_voltage/high_current systems to high_voltage/low_current (usually identified as **800 V**) systems enables many novel topologies and control strategies in the power converters. This transition to a 800 V system reduces the amount of copper, cost, and losses to improve the overall efficiency. Advances in wide bandgap (WBG) semiconductor technology enhances the development of compact-sized converters. This Special Issue intends to bring researchers together to debate and present progressive approaches involved in EV on-board and off-board charging systems operated with 800 V or above battery packs.

The specific topics of this special session include, but are not limited to:

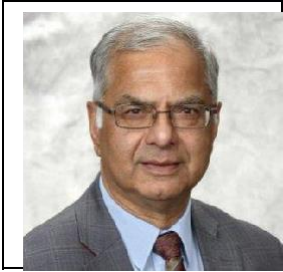
- Novel power factor correction (PFC) and DC-DC converter topologies for on-board EV Chargers (800 V)
- Soft-switched resonant PFC converters for on-board EV Chargers
- Reduced device multilevel converter topologies are aiming at novel charging solutions for 800 V off-board EV Fast Chargers
- Novel control strategies related to high-voltage battery chargers or DC-DC Converters
- WBG-based resonant converters with high-power unidirectional or bi-directional DC-DC converters (Isolated/ Non-isolated) for EVs
- Novel magnetic component designs and their integration technologies in 800 V Fast Charging systems
- Advanced design and packaging techniques, control methods to enhance the performance in EV Fast Charging stations

Submissions Procedure: All the instructions for paper submission are included on the conference website: <https://attend.ieee.org/iecon-2021/>

Deadlines:

Full paper submission:	June 25, 2021
Paper acceptance notification:	July 30, 2021
Camera-ready paper submission:	Aug. 27, 2021

Short biography of the organizers:



Dr. Vijay K. Sood (SM'79–F'06–LF'15) was a Senior Researcher with the Research Institute of Hydro-Quebec, Montreal, QC, Canada. In 2007, he joined Ontario Technical University, ON, Canada, as an Associate Professor. He is a registered Professional Engineer in Ontario. He has authored over 150 articles and written 2 books on HVDC and FACTS transmission systems. He teaches courses in power electronics, electrical machines, and power systems. His current research interests include the monitoring, control, and protection of power systems. Dr. Sood is a Life Fellow of the IEEE, Fellow of the Engineering Institute of Canada, and Emeritus Fellow of the Canadian Academy of Engineers.



Dr. Pramod Agarwal (M'99, SM'01) received the B.E., M.E., and Ph.D. degrees in electrical engineering from the Indian Institute of Technology Roorkee, Roorkee, India, in 1983, 1985, and 1995, respectively. In 1985, he joined the Indian Institute of Technology, Roorkee as a Lecturer, where he is currently a Professor with the Department of Electrical Engineering. During 1999–2000, he was a Postdoctoral Fellow with the Ecole de Technologie Superieure, University of Quebec, Montreal, QC, Canada. His current research interests include power electronics, smart grids, multilevel inverters, power quality improvement, and the application of power electronics in power systems.

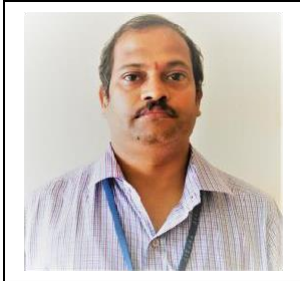


Dr. Naveen Yalla (S'17, M'20) received the B.E. degree in 2009 from Andhra University, Visakhapatnam, and M.Tech. from National Institute of Technology, Kurukshetra, India in 2011 and a Ph.D. degree from Indian Institute of Technology Roorkee, India in 2019. Presently N. Yalla is an assistant professor in the Dept of Electrical Engineering, National Institute of Technology Tiruchirappalli, India. His current research interests include AC-DC, DC-AC Multilevel power converters for industrial and EV Fast charging applications.



Dr. Jaya Sai Praneeth A V (S'11, M'19, SM'21) received the M.Tech. from the National Institute of Technology, Kurukshetra, India in 2013 and a Ph.D. degree from Ontario Tech University- Canada in 2019, India. From 2013 to 2016 he worked as Senior Member in R&D Electrical Department at Mahindra Electric Mobility Limited- Bangalore, India. Currently, Jaya A V is working as a Senior Engineer in the

Advanced Engineering group at BorgWarner Inc., Luxembourg. His current research interests include AC-DC, DC-DC, DC-AC power converters and control for EV application, High-frequency Magnetics design.



Dr. Vijay Anand (M'20) received the Ph.D. degree from Jawaharlal Nehru Technological University, Kakinada, India in 2019. From 2005 he worked as an Associate Professor in the Electrical Department at P V P Siddhartha Institute of Technology, India. His current research interests include AC-DC Soft switched power converters and control for EV application, Electric Machine Design, and High-frequency Magnetic coil and Transformer design.