

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

Special Session on

“Advances in Electric Vehicle Charging and Next Generation Wireless Technology”

Organized by

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Affiliation: Wärtsilä Energy Singapore Pte Ltd, Singapore

Organizer 3: Kishore Naik Mude ([kishore.308@gmail.com](mailto:kishore.308@gmail.com))  
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## Call for Papers

Theme: The concept of Electric mobility is increasingly becoming popular with their demand rising continuously at a faster rate in electrified transportation. There has been a tremendous growth in the electric vehicle (EV) charging methods over past few years. It involves smart EV charging, wireless technology, integration of renewables, newer storage devices, new converter topologies, digital technology etc. Charging using wireless power transfer (WPT) technology is gaining momentum due to its convenient feature of transferring power without contact to charge the batteries. Recent advancements in WPT charging are evolving towards cost effective and efficient systems. Nevertheless, need of much innovations in this technology is required to profligate the charging infrastructure. Development in both static and dynamic EV charging methods is important for success of wireless charging. This special session intends to collect scientific and technical papers dealing with advances in wired and wireless charging methods of the EVs. The focus of this special session is to address the requirement of state of art research, recent development and advanced solutions related to EV charging, challenges and future directions. We are inviting researchers from both academia and industry to submit original and unpublished work not currently under review to this special session.

Topics of interest include, but are not limited to:

- Smart charging stations
- Technological perspectives of Wired and Wireless Battery chargers
- Battery charging optimization
- On-board and off-board chargers
- IoT and cloud based charging and monitoring
- Use of AI and ML in charging
- Supervisory control and Integrated charging
- Digital control and communication
- Power electronics converters in EV charging
- Multi-ports chargers
- Renewable sources and energy storage in EV charging
- Static and dynamic WPT and its challenges
- Modelling, simulations, and control of WPT systems and components
- Wireless data communication in WPT systems
- EMI/EMC and shielding methodologies
- Intelligent WPT systems
- Grid integration Vehicle to X (V2X) wireless charging systems
- Cybersecurity of EV charging
- Standards in WPT EV Charging

**Submissions Procedure:** All the instructions for paper submission are included in 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

## Brief detail of the Special session Organizers



Dr. Rajesh Gupta (S'05–M'08–SM'11) received the Bachelor's degree from the Madan Mohan Malviya Engineering College, Gorakhpur, India, in 1993, the Master's degree from the Birla Institute of Technology, Ranchi, India, in 1995, and the Ph.D. degree from the Indian Institute of Technology, Kanpur, India, in 2007. He has a research and teaching experience of 25 years. He is currently a Professor in the Department of

Electrical Engineering, Motilal Nehru National Institute of Technology Allahabad, Prayagraj, India. Presently he is heading Electrical Machines Laboratory and chairing Student Activity Center of the institute. His research interests include control in power electronics, bidirectional dc-dc converters, energy storage and solar/wind power conversion. He has supervised 12 Ph.D. students, 50 Master students and filed two patents. He completed three sponsored research projects as principal investigator. (Contact detail, E-mail: [rajeshgupta@mnnit.ac.in](mailto:rajeshgupta@mnnit.ac.in), IEEE Membership No: 80102392)



Dr V. Karthikeyan was born in Coimbatore, Tamilnadu, India, in 1987. He received the Bachelor's and Master's degrees in Electrical and Electronics Engineering from Anna University, Chennai, India, in 2008 and 2010, respectively, and Ph.D. degree in Electrical Engineering from Motilal Nehru National Institute of Technology, Allahabad, India, in 2017. Currently, he is working as an Assistant Professor in the Department of Electrical

Engineering, National Institute of Technology Calicut, Kerala, India. His research interests include bidirectional power converters and its control, energy storage, and renewable energy systems. (Contact detail, E-mail: [karthikeyan@nitc.ac.in](mailto:karthikeyan@nitc.ac.in), IEEE IES Membership No: 95502651)



Dr. S. Rajasekar received his Bachelor Degree and Master Degree in Electrical and Electronics Engineering from Pondicherry University in 2008 and 2010 respectively. He acquired his Ph.D. from Motilal Nehru National Institute of Technology in 2014. He was the Head of Energy Storage and Technology Development in ST Engineering Land Systems, Singapore. From 2014 to 2018, he worked in R&D Centre at Power Grid Corporation of India Ltd, and contributed to various innovative project developments. His

research areas includes Renewable Energy Integration into Grid, Power Electronics Application in

Power system and Power Quality. (Contact detail, E-mail: [rajasekar.s@wartsila.com](mailto:rajasekar.s@wartsila.com), IEEE IES Membership No: 93927314)



Dr. Kishore Naik Mude, received his B.Tech. degree in Electrical Engineering from Sri Venkateshwara University, Tirupati, India, in 2008, and his M. Tech. degree in Electrical Engineering from the Motilal Nehru National Institute of Technology, Allahabad, India, in 2010. From 2010 to 2011, he was a Lecturer at Amity University, Noida, India. He graduated his Ph.D degree in Electrical Engineering from University of Padova, Italy, in March 2015. Presently he is working as senior electrical researcher with solace power, Canada. Prior to this

he was working with Systec R&D, Porto, Portugal and he also served as an Asst. Professor in Amrita Vishwa Vidyapeetham University, Bengaluru campus, India. He received Prestigious European fellowship CARIPARO sponsored by Italian Bank, for three years of his doctoral study. He was invited for talk on Wireless Battery chargers in various organizations in India and abroad. His current area of research includes, Wireless Power Transfer, Battery chargers. He organized and chaired special sessions in the area of Wireless Power Transfer

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