

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

Special Session on

**“Drivetrain Integrated Chargers for Electric Vehicles”**

**Organized by**

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## Call for Papers

Electrified transportation is an emerging application area of power electronics which can significantly reduce global greenhouse gas emissions. The ubiquitous deployment of electric vehicles (EVs) is currently hindered by their long charging times and high cost. Drivetrain integrated chargers which leverage the power electronic and magnetic components of an EVs drivetrain to provide high-powered battery charging solutions can remedy both these problem areas.

This special session will provide a deep dive into the topologies, modelling and control of drivetrain integrated chargers. An existing challenge for integrated chargers is their compliance with standards related to the safety of EV chargers such as UL 2231 and IEC 61851. Correspondingly, drivetrain integrated chargers which ensure grid compliance through careful selection of power electronic converter topology, modulation technique, or the introduction of galvanic isolation will be of particular interest.

Topics of interest include, but are not limited to:

- Power electronic converter and traction motor topologies enabling drivetrain integrated charging of EVs.
- Modelling and control of drivetrain integrated charging topologies.
- Multiphase motor-based drivetrain integrated charging topologies.
- Design of topologies and modulation techniques enabling standard-compliant non-isolated EV charging using drivetrain integrated chargers.
- Galvanically isolated EV drivetrain integrated charging topologies.
- EMI filter design for ensuring grid compliance with non-isolated drivetrain integrated EV chargers.
- Auxiliary low voltage charging functions using drivetrain integrated EV charging topologies.
- Vehicle-to-grid (V2G) and vehicle-to-vehicle (V2V) operation of bidirectional drivetrain integrated chargers.
- Flexible drivetrain integrated charging topologies capable of interfacing to multiple grid configurations (single-phase, three-phase or DC).

**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