Special Session on

Grid Integrated Electric Vehicle Battery Charging System

Organized and co-chaired by:

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Call for Papers

Outline of the Session:

The implementation of numerous smart systems that are advantageous to the environment and improve the quality of life for the consumer is one of the main objectives of the new smart grids. In order to improve the reliability and sustainability of the transportation system, changes are being made to the way electric vehicles (EVs) are used. As EV use has increased, several problems have arisen, including the requirement to build a charging infrastructure, forecast peak loads, size of EV system and greater efficiency has brought EV technology to the forefront of the electric power distribution systems due to their ability to interact with the grid through vehicle-to-grid (V2G) infrastructure.

The greater adoption of EVs presents an ideal use-case scenario of EVs acting as power dispatch, storage, and ancillary service-providing units. With the vehicle to grid (V2G) and grid to vehicle (G2V) mode, on-board charger can be turned into a smart EV charger which in turn could be used for a number of purposes. Also, the integration between grid and electrical vehicle must be such that the THD content in grid current in V2G mode, ripple in battery current and ripple in voltage across dc link during G2V mode must be within well-defined limits. The limitations of the developed EV charge as follows as

- Charging during times of low electricity prices
- Charging slowly
- Charging near the end of the authorized charge period
- Preventing vehicles from sending power back to the grid.

Given this context, and especially considering the expected growth in EV integration levels, this Special Issue aims to collect original research and studies about the abovementioned multidisciplinary topics, including all technical, economic, and policy aspects related to the impact of EVs on power systems. Papers selected for this Special Issue will be subject to a rigorous peer review procedure, with the aim of rapid and wide dissemination of research results, developments and applications.

I am writing to invite you to submit your original work to this Special Issue and I look forward to receiving your outstanding research.

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

- Utility issues related to plug-in vehicles and other grid-interactive transportation
- Vehicle connectivity modules
- Vehicle-to-grid (V2G), vehicle-to-infrastructure (V2I), and vehicle-to-home (V2H) interfaces

- Vehicle-to-grid communication and control
- Vehicular power electronics, electric machines, and motor drives
- ESS
- DC and AC micro grid
- Coordinate EV charging periods and pricing tariffs.
- Batteries for mobile transport
- Battery management systems
- Charging stations
- Grid interface technologies
- Hybrid and electric powertrains
- Inductive charging
- Mass transit and public transportation electrification
- On-board and off-board chargers, fast chargers, and opportunity chargers
- Dynamic charging in roadways
- Electric vehicles (EVs), hybrid EVs, plug-in hybrid EVs, and range-extended EVs
- Electrification of heavy-duty vehicles and off-road vehicles

Keywords: Electric vehicles (EVs), DSM, Modeling, Vehicle-to-grid (V2G), distribution system operators, Grid interface technologies, Battery management systems, Energy storage systems.

Author's schedule:

Deadline for submission of special session papers	November 15, 2023
Notification of acceptance	November 20, 2023
Deadline for submission of final manuscripts	November 30, 2023

All the instructions for paper submission are included in the conference website:
http://www.sgre-qa.org/