



20th IEEE Vehicle Power and Propulsion Conference (VPPC)

October 23-27, 2023 | Milan, Italy

Call for Paper for Special Session: “Electrical Machines and Electromagnetic Actuators targeting Vehicle-to-Grid (V2G) Technology”

Technical Program Committee

Co-Chairs

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The 20th IEEE Vehicle Power and Propulsion 2023 (IEEE VPPC 2023) will be held in Milan, Italy. The conference will bring together engineers, researchers, and other professionals for interactive and multidisciplinary discussions on electrified vehicle power, propulsion, and related technologies. Prospective authors are invited to submit original full papers related to the theme of the following special session.

Special Session Description: “Vehicle to Grid” (or so-called V2G) is a vehicle-grid integration technology, that allows a car battery can be charged and discharged as energy production or consumption. V2G vehicles can mitigate the climate change by allowing energy systems to balance and stabilize the grid with more renewable energy resources. Currently, plug-in electric vehicles are unidirectional energy systems, in which electrical machines and actuators are acting as loads or energy consumers. Developing bidirectional electrical machines and actuators would allow electrified transports to reduce CO2 emission significantly, or even more effectively tackle challenges in smart grid stabilization and efficiency.

Unlike conventional electric vehicles, V2G electrical machines must be designed to work effectively in both consumption and production modes. Further, grid-integrated V2G vehicles must be sufficiently reliable under overloading, external stresses or faulty conditions. Therefore, enhanced fault-tolerant capability, lifetime expectation, efficiency and protections in bidirectional operations are of great interest in developing V2G vehicles. Therefore,

This special session aims to identify, address and disseminate state-of-the-art research work on modelling, design, optimization and health assessment of electrical machines and electromagnetic actuators for V2G technology.

The topics of interest include, but not restricted to:

- Modelling and design of high-performance electric machines, and bidirectional power converters for vehicle grid integration.
- Modelling, design and optimization of electromagnetic actuators for power grid protection devices.
- Condition monitoring of hybrid/bidirectional electric machines, electromagnetic actuators, and power electronics converters.

Manuscript Preparation and Submission: 6-page paper (without over length charge) and up to 2 additional pages are allowed (Additional page charge \$100 USD per additional page should be paid at the time of registration and final paper submission).

Submit papers at: <https://vppc2023.trackchair.com/>

For additional information and paper submission, please visit:

<https://events.vtsociety.org/vppc2023/>

Important Dates

Paper Submission: April 17, 2023

Acceptance Notification: July 5, 2023

Final Paper Due: July 31, 2023

Conference Dates: October 23-27, 2023

