# Digital Twin Technologies in Modern Transportation Systems

## Organizers

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## Abstract

The integration of Digital Twin technologies within modern transportation systems, particularly in electrical energy conversion systems (electrical machines) and propulsion drive systems, poses a significant and intriguing challenge in the industrial landscape. Digital Twins serve as predictive tools for forecasting the future performance, behavior, and maintenance requirements of complex systems.

Beyond mere simulation, their effective implementation necessitates establishing and maintaining a seamless connection between virtual and physical entities.

This entails continuous monitoring and control of the entire system, incorporating its developmental history and a wealth of information sourced from manufacturers and service providers.

Digital twins can also be used to portray the semantic structure and relationships between components and different systems, which can be utilized for intelligent design of new transportation systems. This Special Session aims to delve into various aspects related to developing and deploying Digital Twins in transportation systems.

Topics of interest include but are not limited to methodologies for design, practical implementation challenges, and advancements in leveraging Digital Twins to optimize system performance and maintenance protocols.