

Special Session on

“Artificial Intelligence for Electrified Transportations and Microgrids”

Organized by

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Call for Papers

Artificial intelligence (AI) is widely heralded as an ongoing “revolution” transforming science and society altogether. While approaches to AI such as machine learning, deep learning, and artificial neural networks are reshaping data processing and analysis, it is being increasingly used in a variety of sectors including healthcare, transportation, power system, and the production chain. In the aspect of electrified transportations (include, but are not limited to, road and rail vehicles, surface and underwater vessels, electric aircraft and electric spacecraft) and microgrids, AI technique has been shown to be effective in the prediction of power supply and load demand, recognition of operation modes, modeling and optimization of control system, decision-making and autonomous intelligent control, prognostic, diagnostic and health management of components, and energy management.

This special issue will feature the most recent developments and the state-of-the-art of the application of AI in the electrified transportations and microgrids. Topics of interest for the special issue include but are not limited to the following areas:

- Modeling, control and demonstration of components in the electrified transportations and microgrids, like fuel cell, energy storage sources (battery, supercapacitor, etc.), photovoltaic, wind turbine, tidal turbine, etc.
- Degradation modeling, prognosis and remaining useful life prediction of components in the electrified transportations and microgrids.
- Advance deep/machine learning forecasting and recognition of driving prediction and driving behavior in the electric vehicles, hybrid electric vehicles, and fuel cell hybrid electric vehicles.

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- Demand side management and demand response programs in the microgrid.
- Power supply (from wind, solar energy and tidal energy, etc.) and load demand (from residence house, data center, building, etc.) forecasting in the microgrid.
- Design, modeling, and optimization of energy management strategy for the electrified transportations and microgrids.
- Fault detection and reliability control of the electrified transportations and microgrids
- Efficiency improvement and cost reduction of the electrified transportations and microgrids