Call for Papers
IEEE Transactions on Transportation Electrification (TTE)

Special Issue on Modeling and Control of Electrified Vehicles and Transportation Systems

Electrified Vehicles, such as battery electric vehicles (BEVs), hybrid electric vehicles (HEVs), and plug-in hybrid electric vehicles (PHEVs), have the potential to significantly reduce dependency on fossil fuels and pollutant emissions, as the electrification technologies expedite a paradigm shift towards a more sustainable transportation system. These electrified vehicles facilitate renewable ways of generating electricity, e.g., wind and solar energy sources, leading to a good synergy between the transportation and power sectors while the smooth integration of electrified vehicles and transportation system deserve the substantial attention. The electrified vehicle and transportation technologies are being continuously proliferated by the development of advanced modeling and simulation methodology, system integration, control, optimization, and mechatronic system diagnostics and prognostics, as well as by incentives from economy and policy. The large-scale utilization of the electrified vehicles requests the smooth integration with the electrified transportation systems. The primary objective of this special issue is to provide timely solutions and advances for technological and economic challenges in modeling, simulation, control, and optimization of electrified vehicles and transportation systems. The main focus will be on system-level modeling, optimization, and control, as well as component-level modeling and control, such as engine, power electronics, electric machine, and energy storage device. Additionally, the economic and policy aspects to promote the market penetration of electrified vehicles are necessarily involved.

Prospective authors are invited to submit manuscripts for review for publication in this special issue. Original research and practical contributions as well as surveys and state-of-the-art tutorials are welcome. Topics of interest include (but are not limited to):

- System-level and component-level modeling, simulation, optimization, control, diagnostics, prognostics, reliability, and health management of electrified vehicles and transportation systems, including vehicle dynamics and connected vehicles;
- Modeling and control of electrified propulsion, including hybrid powertrains, engines, electric drives, and power electronic circuits, converters, and inverters for electrified vehicles;
- Modeling and control of energy storage systems for electrified vehicles, e.g., battery, ultracapacitor, fuel cell, and flywheel technologies;
- Modeling, optimization, and control of vehicle-to-grid (V2G) and vehicle-to-building (V2B) services, e.g., peer-to-peer charging in smart parking, autonomous vehicle-to-grid charging strategies, and communications standards;
- Modeling and optimization of economy and policy for transportation electrification, e.g., scheduling of charging stations, economic analysis of battery swapping, and life-cycle assessment of electrified vehicles;
- Functional safety and ISO26262 requirements for electrified vehicles and economic impacts.

Submission of Manuscripts to the Transactions:
All manuscripts must be submitted through Manuscript Central at http://mc.manuscriptcentral.com/tte-ieee. Submissions must be clearly marked “Special Issue on Modeling and Control” on the cover page. When uploading your paper, please also select the “Special Issue on Modeling and Control.” Refer to http://www.ieee-pels.org/publications/ieee-transactions-on-transportation-electrification for general information about electronic submission through Manuscript Central.

Important Dates:
- Full Paper Submission Deadline: October 30, 2015
- Expected Publication Date: March 2016

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