Annual Conference of the IEEE Industrial Electronics Society (IECON 2021)

Special Session on

“Data-Driven Techniques Applicable to Smart Battery Management System to Improve Effective Battery Usage, Safety and Reliability”

Organized by

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Call for Papers

Theme: The current transportation electrification revolution and large-scale integration of intermittent renewable energy sources are being fueled by energy dense and inexpensive energy storage systems. Data driven techniques have found to be very useful to compute key battery parameters for effective operation of Battery Management Systems ensuring optimum capacity utilization of batteries, operational safety, and reliability. Reduced cost of computational resources has further revitalized research in this area. Several new learning paradigms such as Federated Learning have shown promising results towards maintaining data privacy. This special session aims to address the recent developments, solutions to the key challenges, and a holistic understanding of the effective application of upcoming data driven solutions in the focused field.

Good quality papers may be considered for publication in the IEEE Trans. on Industrial Electronics, subject to further rounds of review.
Topics of interest include, but are not limited to:
- Efficient and Accurate Battery State Estimation Methodologies
- Synthetic Data Generation and Missing Data Estimation Techniques
- Improved Battery Management and Hybrid Energy Management Strategies
- Generative Adversarial Models
- Federated or On-device Learning
- Imputation of Missing Battery Parameters
- Addressing Limited and unlabeled battery parameter challenges
- Data Privacy and Data Scarcity Concerns
- Data Driven Fault detection/diagnosis Strategies
- Health Conscious Battery Management System
- Artificial Intelligence and Machine Learning Based Architectures

Submissions Procedure: All the instructions for paper submission are included in the conference website: https://attend.ieee.org/iecon-2021/

Deadlines:
- Full paper submission: June 25, 2021
- Paper acceptance notification: July 30, 2021
- Camera-ready paper submission: Aug. 27, 2021

Reviewers

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