



Call for Papers for Open Invited Track on

Emerging Challenges and Directions of Advanced Battery Management

Battery energy storage systems are rising as the backbone of numerous industrial and civilian systems. Their performance and safety critically rely on advanced battery management systems, which have attracted considerable attention and efforts, particularly from the controls community, in the past decade. Battery management research today is witnessing a tremendous emergence of new problems and challenges, due to the incessant demands for higher-performing batteries as well as the increasing sizes, cell- to system-level complexities, diversity of electrochemistries, and application scenarios of various battery systems. The trend will drive the research explorations in the upcoming years and lead to the formation of new research directions. This open invited track thus aims to gather researchers from both academia and industry to share the up-to-date research advances and perspectives about future opportunities and outlook of this vibrant field.

Submissions based on original research are cordially invited. The topics of interest include but are not limited to:

- New concepts of battery modeling, simulation, estimation, and control
- Battery management in both data-abundant and data-sparse situations
- Control and state estimation of large-size battery systems
- Machine learning and artificial intelligence for battery systems
- Health/ageing modeling, diagnosis and prognostics
- Optimal, fast, ageing-aware charging and balancing control
- Fault tolerance and failure mitigation in battery management
- Battery management integrated with applications, e.g., EVs, grid, and transportation

This open invited track is sponsored by the IFAC Technical Committees on Modeling, Identification and Signal Processing, Power and Energy Systems, and Automotive Control.

Tentative Dates

- Draft manuscript submission: October 31, 2019
- Acceptance notification: February, 2020
- Final paper submission: March 31, 2020

Organizers

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Submission Information

This open invited track welcomes both regular papers (6-8 pages) and extended abstracts (short papers of 2-4 pages, to appear in the congress preprints but not in IFAC PapersOnLine). The code for submission is 9877u. The conference program committee will decide the placement of the accepted contributions into the open invited track or the regular program. Further information about submission is available at www.ifac2020.org.