CALL FOR PAPERS
SPECIAL SESSION ON

Battery Safety and State of Health Estimation: Recent Advances and Perspective

for ICCAD 2025
July 1-3, 2025, Barcelona, Spain

Session Co-Chairs:
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Session description:
This special session deals with the problem of battery safety and State of Health (SoH) estimation of batteries. Recent advances in battery safety and SoH estimation have significantly enhanced the reliability and performance of lithium-ion batteries. The integration of sophisticated Battery Management Systems (BMS) has been pivotal in monitoring battery performance, ensuring safe operation, and accurately estimating both SoH and State of Charge (SoC). Machine learning techniques have further improved the speed and accuracy of these estimations, allowing for more effective health monitoring. Additionally, Electrochemical Impedance Spectroscopy (EIS) has emerged as a valuable diagnostic tool, providing insights into internal resistance and capacitance without the need for complex battery modeling. These innovations collectively contribute to better battery health monitoring systems, which are essential for predicting remaining useful life (RUL) and enhancing overall battery safety. As these technologies evolve, they promise to further improve the management and longevity of battery systems in various applications:

The topics of interest include, but are not limited to:
- Modern lithium-ion batteries;
- Machine learning;
- Artificial intelligence;
- Cloud BMS;
- Smart cells and packs;
- Remaining useful life;
- Battery safety evaluation and testing protocols;
- Advanced experimental characterization of the battery safety behaviors;
- Battery internal short circuit mechanisms ;
- Novel modeling of battery safety behaviors
- Thermal safety

SUBMISSION

Papers must be submitted electronically for peer review by **January 31, 2025**
https://www.iccad-conf.com/submission/

All papers must be written in English and should describe original work. The length of the paper is limited to a maximum of 6 pages (in the standard IEEE conference double-column format).