

Call for Papers for the Special Session on

ADVANCES IN ENERGY STORAGE TECHNOLOGIES, POWER CONVERSION AND SYSTEM INTEGRATION

Organized and co-chaired by

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Technical Outline of the Session and Topics

The rising demand of energy storage technologies necessitates development of high energy density, faster response and long life cycle storage. Wide range of application includes electric vehicles, grid support, uninterrupted power supplies, data centres, consumer electronics etc. Newer electro-chemical battery technologies include Li-ion, solid state, sodium, graphene, flow etc. Advances in conventional mechanical storage like pumped-hydro, CAES, flywheel has gained attention in large scale integration. Upcoming hydrogen based storage is getting most attraction due to its renewable nature. Fast dynamic super-capacitor and superconducting magnetic energy storage (SMES), are finding applications due to their high power density. Grid scale and renewable energy sources require high performance storage, for their successful integration. Energy storage power conversion and control need efficient power electronics technologies. The focus of this special session is to address the requirement of state of art research, recent development and advanced solutions related to recent advancement in storage technologies, challenges and future directions.

Topics of the session include, but are not limited to:

- High energy density batteries, Li-ion, solid state, sodium, graphene, etc.
- Battery/Energy Management Systems and AI Techniques
- Storage for balancing supply/demand and stability
- Battery charging systems and EVs
- Grid-scale electrical storage technologies
- Battery power conversion through DC/DC and DC/AC converters
- Hydrogen, pumped hydro, CAES, thermal, supercapacitor, SMES
- Renewable integration and energy storage
- Storage in off- and on-grid systems

Timeline for Authors

All the instructions for paper submission are available on the conference website. Please visit www.iecon2026.org or scan the QR code for the timeline.

