Special Issue

Challenges and Prospects of Second Life Batteries

Message from the Guest Editor

The need of grid-connected electricity energy storage (EES) continues to grow due to the furthering penetration of renewables and the increasing demand for a secure and stable grid. Batteries retired from electric vehicle usage retain 70% to 80% of their capacity and can be re-purposed as stationary storage system at reduced cost. However, they have mismatched aging conditions and unbalanced state-of-charge levels. Under typical series-parallel connection, the cells in a pack are prone to over-charging or over-discharging due to deviated cycling conditions and misestimated states. While it is possible to test every cell in a pack to determine its State of Health (SoH), this is costly and time consuming. In this Special Issue, we welcome review articles focusing on recent progress and developments in remaining useful life, state of health estimation and prediction schemes, especially those that do not require long testing of each cell. Other critical topics include the safety of second-life cells, economically viable li-ion battery recycling methods, the market and economics for second-life battery packs, and the ability to re-use cells and packs from different EV manufacturers.

Guest Editor

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Take the opportunity to publish your original scientific work or a review paper concerning battery materials, battery technology or battery application within this new open access journal. Along with material science, the journal also addresses engineering and multidisciplinary research topics, such as cell and system design or storage system integration. Publishing proffers visibility for the benefit of other experts and facilitates discussion of the research results within the field. You are invited to publish your work, read published papers and to participate in topical discussions.

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