Special Issue

Advances in Thin-Film Batteries: Progress and Challenges

Message from the Guest Editors

The development of high-energy-density thin-film batteries is critical to meet the ever-growing energy demand for a wide range of applications: in particular, wearables and IoT devices. In addition, the solutions proposed to date present limitations on several aspects of their electrochemical performance, despite the recently observed advances. Efforts have been devoted to the implementation of new approaches at different levels: (i) the selection of electrode and electrolyte materials; and (ii) the optimization of ion transport phenomena in volume and at the interfaces through (iii) revisiting the architecture of the component to (iv) develop power management circuits. In this Special Issue, we seek contributions that help increase our understanding about the physical and chemical phenomena that govern the observed limitations, and innovative solutions to bridge the gap between electrochemical performance and application needs.

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