

Development of energy storage system with safer and greener materials

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Electrochemical energy storage systems, including batteries, are garnering attention from both the research community and industry because they are a key enabling technology for the implementation of sustainable energy [1]. Improvement in the performance, safety, and sustainability of battery components is recognized as a current as well as future challenge. In the course of my research, I have developed stable electrolytes, in terms of thermal, electrochemical, and mechanical, for lithium ion batteries by using polymers, ionic liquids, inorganic glasses, and also their composites [2]. In the seminar, a new project about seawater battery (SWB) [3] will be presented, which utilizes naturally available abundant renewable resource, seawater, as a catholyte. The approach to enhance safety and stability characteristics of SWB will be discussed in relation to my past research. A new electrolyte system for anode as well as a new separator for the electrodes will be proposed.

Reference

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