

Preface to the Special Issue on Challenges and Possibilities of Energy Storage

Guest Editors

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The utilization of renewable energy is the ultimate way to meet the increasing energy demands of our modern society. The efficient storage and utilization of the energy in different ways are the current hot topics in the research community. Among them, the solar water splitting, photocatalysis, and lithium–sulfur batteries are with great application promise. The research will provide strategies for the production, storage, and application of energy for industry.

This special issue focuses on “Challenges and Possibilities of Energy Storage”. It contains nine review papers, one research paper, and one News and Views which are from Technische Universität Ilmenau, Soochow University, Institute of Semiconductors CAS, Westlake University, Huazhong University of Science and Technology, Beijing Jiaotong University, Nanjing University, etc. The latest progress in this field from domestic and abroad are introduced in this issue. Prof. Yong Lei's original research paper entitled “Highly-rough surface carbon nanofibers film as an effective interlayer for lithium–sulfur batteries” from Technische Universität Ilmenau, Prof. Zhenhui Kang's review paper entitled “Optoelectronic and photocatalytic properties of I–III–VI QDs: Bridging between traditional and emerging new QDs” from Soochow University, Prof. Zhijie Wang's review paper entitled “Engineering the photoelectrochemical behaviors of ZnO for efficient solar water splitting” from Institute of Semiconductors CAS, and Prof. Dajun Shu's review paper entitled “Regulation of surface properties of photocatalysis material TiO₂ by strain engineering” introduce the details of challenges and possibilities in energy storage, etc.

We believe this special issue will promote the academic exchange, bridge the researchers from academy and industry who are interested in this topic. We also welcome the potential authors in this area could submit their future works to *Journal of Semiconductors*.