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Sustainable Materials and Recycling Processes for Battery Production

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Message from the Guest Editors

Batteries are considered one of the most critical technologies in modern society. Determining how high-performance batteries can be developed by applying sustainable materials and recycling used batteries is necessary to meet the requirements of the growing market. (1) Sustainable materials that are naturally abundant, environmentally benign, and low-cost are promising to accommodate the inadequate supply of raw materials or batteries. Therefore, more research on the use of sustainable materials as electrodes, electrolytes, and separators in batteries is critical for the generation of "green batteries". (2) Recycling used batteries can further reduce soil/water pollution and allow for raw battery materials to be obtained. Hence, effective and environmentally friendly recycling processes are urgently needed for the development of reusable materials.

Sustainable technologies for both the production and recycling of batteries will greatly benefit the environment. The realization of “green” processes for recycling batteries and producing recyclable batteries can not only reduce toxic wastes but also lower energy consumption and greenhouse gas emissions.

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