Special Issue

Microstructural Evolution, Electrical Properties and Conduction Mechanism of Novel Energy Materials

Message from the Guest Editor

Our society faces rapidly growing global energy demands and the associated environmental concerns. In order to achieve sufficient efficiency with reduced cost, polycrystalline/nanocrystal films such as perovskite are fabricated with spin-cast and sintering processes rather than by utilizing expensive high-vacuum facilities. These energy materials offer interesting physical and chemical properties such as microstructural evolution (grain, grain boundary effect) and electrical properties (charge carrier transport, diffusion length, carrier trapping and detrapping). Improved efficiency in photovoltaic, piezoelectric, and thermoelectric materials is often associated with the efficient transport of carriers which have to overcome the potential barriers at the grain boundaries existing in polycrystalline or nanocrystalline films. This Special Issue, "Microstructural Evolution, Electrical Properties and Conduction Mechanism of Novel Energy Materials", will attempt to cover the recent advances in energy materials from polycrystalline or nanocrystalline film fabrication/material characterization to device fabrication and testing.

Guest Editor

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Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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