Special Issue

The Fundaments and Application of Functional Dielectrics in Energy Storage

Message from the Guest Editors

In recent years, with the advancement of technology, the demand for energy storage materials has been increasing. At present, the main energy storage devices include electrochemical supercapacitors, batteries and dielectric capacitors. Among them, dielectric capacitors with the ultra-high power density and ultra-fast charge–discharge speed have important applications in electrical vehicles and pulse power systems. Functional dielectric materials, as the key component of energy storage dielectric capacitors, are one of the most frequently investigated topics in materials science. The relatively low energy density of functional dielectric materials limits the miniaturization of dielectric capacitors devices. Research into enhancement of energy density has attracted much interest in the field of functional dielectric research and it is also one of the focuses of this Special Issue. The purpose of this Special Issue is to collect articles exploring dielectric materials as regards energy storage applications. We welcome original research that specifically focuses on these areas and hope to provide new ideas for the development of functional dielectric energy storage materials.

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Message from the Editor-in-Chief

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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