Special Issue

Electromechanical Effects in Ferroelectric Materials: Theory, Modeling, and Experiments

Message from the Guest Editors

Ferroelectric materials are featured by the presence of spontaneous electric dipoles that can be reversibly flipped by an applied electric field. Many ferroelectric materials also respond sensitively to the application or changes of external fields, giving rise to a variety of multifield coupling effects, which makes ferroelectric materials extraordinarily useful for multifunctional applications. Among these coupling effects, the electromechanical effects are of particular interest. These effects generally result from synergic contributions due to the change of intrinsic lattice structures, modification of microstructures, and the formation and motion of extended defects, bringing challenges to probe them systematically across different length and time scales. The goal for this Special Issue is to present the recent progresses in characterizing, understanding, and utilizing the electromechanical effects in ferroelectric and related materials, with advanced experimental techniques as well as theoretical modeling and simulation. Therefore, we sincerely invite you to submit manuscripts for this Special Issue.

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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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