Special Issue

Design, Performance and Application Research of Smart Piezoelectric Materials

Message from the Guest Editors

Piezoelectric phenomena and related materials are known to mankind for more than a century, with tremendous progress made with respect to both scientific understandings and practical applications. Much research effort has been devoted to establishing strategies to obtain a large piezoelectric response in oxide piezoelectrics by exploring mechanisms from the micro-scale to the atomic scale. These strategies have mainly included enhancing intrinsic atomic distortion, domain switching, phase boundary modulation, interface engineering, and defect manipulation, etc. Among these, phase boundary manipulation has been the most widely pursued approach with an immense amount of breakthroughs. The aim of this Special Issue is to update the fundamental aspects of these strategies with a particular focus on their roles in promoting the performance of piezoelectrics, and inspire the potential discovery of new piezoelectric materials and structures. More importantly, we would like to stress the current challenges faced in piezoelectrics and provide an outlook of the existing strategies to tackle the current obstacles, so as to achieve breakthroughs in giant piezoelectricity.

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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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