Special Issue

Exploring the Versatility of Piezoelectric and Dielectric Electroceramics: Synthesis, Characterization, and Applications

Message from the Guest Editors

Electroceramics, a distinctive subset of electronic materials, boast an array of remarkable physical properties, including dielectric, magnetic, and semiconductor behavior. This interdisciplinary field encompasses phenomena such as ferroelectricity, piezoelectricity, and pyroelectricity, offering a rich tapestry of intellectual challenges spanning various engineering and basic science disciplines. Examples of versatility in their properties and potential applications include, but are not limited to, the colossal magnetoresistive effect, giant electrocaloric effect, giant photovoltaic effect, and energy harvesting. Our Special Issue delves into the synthesis methods, processing techniques, and advanced characterization of electroceramics. We explore the intricate (micro)structure-property relationships and their applications across diverse domains, with a particular focus on piezoelectric and dielectric ceramics. Additionally, we examine ferroelectrics, multiferroics, high-temperature superconducting ceramics, and emerging areas like microwave ceramics, porous ceramics, ceramic matrix composites, and ceramic ion conductors.

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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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