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

Guest Editors:

**Prof. Dr. Dionizy Czekaj**
Faculty of Mechanical Engineering and Ship Technology, Gdańsk University of Technology, 11/12 Narutowicza Str., 80-233 Gdańsk, Poland

**Prof. Dr. Barbara Garbarz-Glos**
Institute of Technology, University of the National Education Commission, Podchorążych 2, 30-084 Kraków, Poland

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## Message from the Guest Editors

Dear Colleagues,

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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## Editor-in-Chief

**Prof. Dr. Maryam Tabrizian**
1. Department of Biomedical Engineering, Faculty of Medicine and Health Sciences, McGill University, Montreal, QC H3A 2B6, Canada
2. Faculty of Dentistry and Oral Health Sciences, McGill University, 3640 Rue University, Montreal, QC H3A 0C7, Canada

## Message from the Editor-in-Chief

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## Contact Us

*Materials* Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

Tel: +41 61 683 77 34
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mdpi.com/journal/materials
materials@mdpi.com
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