Special Issue

Non-linear Dielectric Materials for Energy Storage Capacitors

Message from the Guest Editors

Dielectric capacitors offer high-power density and ultrafast discharging times, making them potential candidates for pulsed power technologies.

Non-linear dielectrics in the form of ferroelectrics , relaxor ferroelectrics and antiferroelectrics have spontaneous polarization and higher dielectric permittivities than linear dielectric capacitors, and they can work both as DC and AC devices. Interest in non-linear dielectrics, either in the bulk or thin film form, is continuously on the rise, both from a fundamental and application point of view.

Advanced non-linear dielectrics such as FE, RFE and AFE should satisfy multiple characteristics, such as low coercive field, high maximum polarization, low remnant polarization, large dielectric breakdown field and slim hysteresis, in order to obtain superior energy storage performance. In addition, they should display higher thermal and mechanical stability.

In this Special Issue, we aim to identify modern trends of non-linear dielectric materials for energy storage capacitors, including the processing fundamentals and optimization of final capacitor properties.

It is our pleasure to invite you to contribute for this Special Issue.

Guest Editors

Prof. Dr. Maria J. M. Gomes
Centre of Physics of University of Minho and Porto (CF-UM-UP), Campus de Gualtar, 4710-057 Braga, Portugal

Dr. Jose P. B. Silva
Centre of Physics of University of Minho and Porto (CF-UM-UP), Campus de Gualtar, 4710-057 Braga, Portugal

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Materials
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
materials@mdpi.com

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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.

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

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