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Synthesis and Characterization of Novel Multiferroic Magnetolectric Materials and Composites

Guest Editor:

Dr. Riccardo Cabassi

IMEM-CNR, (Institute of Materials for Electronic and Magnetism—National Research Council), Parco Area delle Scienze 37/A, 43124 Parma, Italy

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Message from the Guest Editor

It is now more than two decades since the concept of multiferroic materials came to the attention of the scientific community. In those times, the incompatibility between the $d0$ -ness needed for ferroelectricity and d^n -ness needed for ferromagnetism seemed to be a major obstacle to the discovery of multiferroic compounds. However, in a few years, several mechanisms leading to the breaking of space-inversion symmetry in magnetic materials were observed, such as “lone pair” ferroelectricity (as in BiFeO_3 and other analogues perovskites), charge ordering (the debated case of LuFe_2O_4) or magneto-electric coupling in non-collinear spin orderings (via Dzyaloshinskii–Morya interactions as in TbMnO_3 and other spiral magnets). Furthermore, the ability to realize composite materials joining ferroelectric and magnetic components has enormously enlarged the possible playground. Along with the obvious scientific interest, steadily increasing attention has been drawn by the conceivable future applications, particularly



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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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Materials Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland

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