Special Issue

Oxide Magnetics

Message from the Guest Editor

Preparation of complex transition metal oxides and investigation of their structure, magnetic, electrical, and dielectric properties is an actual trend of condensed matter physics and chemistry. This topic is not only important from a fundamental point of view, but it also has great applied importance. Complex transition metal oxides belong to the so-called class of strongly correlated electronic systems, since they demonstrate a strong interconnection of magnetic, electrical, and elastic properties among the most commonly used 3D metals, such as Cr, Mn, Fe, Co, and Ni. However, the most promising for practical use are iron-based oxides with perovskite (orthoferrites), spinel (spinel-ferrites), and magnetoplumbite (hexaferrites) structures. Their prospects are determined by high values of total magnetic moment and temperature of phase transitions. Nanometer particle size significantly alters their electronic properties. Complex transition metal oxides are promising for practical use as permanent magnets, spintronics elements, and microwave materials for 5G communication technology.

Guest Editor

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Nanoscience and nanotechnology are exciting fields of research and development, with wide applications to electronic, optical, and magnetic devices, biology, medicine, energy, and defense. At the heart of these fields are the synthesis, characterization, modeling, and applications of new materials with lower nanometer-scale dimensions, which we call “nanomaterials”. These materials can exhibit unusual mesoscopic properties and include nanoparticles, coatings and thin films, metal–organic frameworks, membranes, nano-alloys, quantum dots, self-assemblies, 2D materials such as graphene, and nanotubes. Our journal, *Nanomaterials*, has the goal of publishing the highest quality papers on all aspects of nanomaterial science to an interdisciplinary scientific audience. All of our articles are published with rigorous refereeing and open access.

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