



Oxide Magnetics

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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.





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Message from the Editor-in-Chief

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