Special Issue

Magnetism in Low Dimensional Structures

Message from the Guest Editors

Reducing dimensions of magnetic materials is generally motivated by scientific curiosity and technological demands, modern technology has been shifting toward device miniaturization with a high performance. Low-dimensional magnets may include thin films, multilayered structures, nanowires, and nanoparticles and may offer superior performances over traditional materials. Among the spectacular phenomena found to manifest in low-dimensional magnets are: (1) giant anisotropy in ultra-thin film media generated by the interface and the broken symmetry; (2) the giant magnetoresistance (GMR) effect in multilayered structures; (3) the biasing effect produced by the interaction between ferromagnetic and antiferromagnetic layers in bilayer systems; (4) the tunneling magnetoresistance (TMR) effect generated in two-dimensional systems with ferromagnetic electrodes spaced by a very thin insulator layer; (5) the development of a spin valve transistor (SVT), which integrates both a ferromagnet and semiconductor with large magnetoresistance response. The discovery of GMR and TMR has led to the emergence of a new research field called spintronics.

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Deadline for manuscript submissions

closed (30 April 2020)

Crystals

an Open Access Journal by MDPI

Impact Factor 2.4
CiteScore 5.0

mdpi.com/si/34857

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Message from the Editor-in-Chief

Welcome to *Crystals*, the journal dedicated to the fascinating world of crystallographic research! Crystals are more than mere decorative elements; they hold the key to understanding the fundamental structure of matter. Our mission is to explore the crucial significance of this research across various fields. From medicine to technology, chemistry to geology, crystals play a vital role. Their structure provides insights into new advanced materials, innovative drugs, and groundbreaking technologies. Through *Crystals*, we delve into the microscopic world to discover solutions that will shape the future. Join us on a journey through the *Crystals*, where science merges with beauty and innovation.

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