Special Issue

Semimagnetic Semiconductors/Diluted Magnetic Semiconductors

Message from the Guest Editors

Semimagnetic semiconductors (SMSCs) or, alternatively, diluted magnetic semiconductors (DMSs) are semiconducting compounds in which a part of cations is replaced by transition metals or rare earth elements with partially filled d- and f-shells, respectively. Following intensive research of topological insulators, Dirac and Weyl semimetals, DMSs with topological properties have been of particular interest among researchers. As solid solutions, DMSs simultaneously allow the change of a wide band gap, the content of the magnetic component and, as a result, the temperature of the magnetic phase transitions, mobility, and concentration of charge carriers. Recently, a lot of work has been devoted to the study of the properties of thin films of DMSs and heterostructures based on them. An important feature of DMSs is the ability to control the magnetic order through the carrier concentration, which easily changes the gate voltage in the metal–insulator–semiconductor heterostructure. There are various paths and first successes in practical applications of DMSs.

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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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