

Special Issue

Solid-Solution Micro/Nanomaterials: Modeling Structure, Optical, Magnetic and Dielectric Properties

Message from the Guest Editor

Solid solutions are a specific type of crystalline materials in which chemical components form a homogeneous solid phase. The formation of solid solutions involves the partial substitution of atoms or ions of one component of the solution (the host) by atoms or ions of another component (the dopant) within the same crystal lattice, without changing its structure. Depending on the manner in which dopants are incorporated, substitutional and interstitial solid solutions are distinguished. The formation of solid solutions is often accompanied by the creation of cationic or anionic vacancies. Due to the ability to control chemical composition, solid solutions enable purposeful modification of material properties such as electrical and thermal conductivity, as well as magnetic, optical, and dielectric properties. They are widely used in electronics, optoelectronics, and modern functional materials, including micro- and nanomaterials, where even small changes in composition can lead to significant changes in physical properties.

Guest Editor

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Message from the Editor-in-Chief

Materials (ISSN 1996-1944) was launched in 2008. The journal covers twenty-five comprehensive topics: biomaterials, energy materials, advanced composites, advanced materials characterization, porous materials, manufacturing processes and systems, advanced nanomaterials and nanotechnology, smart materials, thin films and interfaces, catalytic materials, carbon materials, materials chemistry, materials physics, optics and photonics, corrosion, construction and building materials, materials simulation and design, electronic materials, advanced and functional ceramics and glasses, metals and alloys, soft matter, polymeric materials, quantum materials, mechanics of materials, green materials, general. *Materials* provides a unique opportunity to contribute high quality articles and to take advantage of its large readership.

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