

Special Issue

Multiphysics and Multilevel Modeling of Composition Formation and Properties of Multicomponent and Polycrystalline Materials

Message from the Guest Editors

Modern technologies for the synthesis of new materials (multicomponent and polycrystalline) are very diverse and are characterized by multifactoriality, non-equilibrium, and multistage. For their development and optimization, detailed studies of a variety of related phenomena, their interaction and influence on synthesis dynamics are required. Experimental study of the composition and structure of synthesized materials is carried out after additional influences and manipulations, which does not always give an idea of the physical processes that led to this or that result. Help can come in the form of mathematical modeling, which currently has a wide range of possibilities from studying processes on the atomic and molecular scale to describing the process as a whole. A good mathematical model should not only describe what is observed, but also have predictive properties. Ideally, the model should tell us what technological conditions are necessary to obtain a material of a given composition and structure, and required to improve the performance characteristics of the product created from this material.

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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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