

Special Issue

Novel Approaches in the Design, Simulation, and Manufacturing for Processes and Systems

Message from the Guest Editors

The application of novel approaches in the design, simulation, and manufacturing of engineering products ensures the effectiveness of manufacturing systems. Modeling the materials' structure leads to the production of a predetermined set of their properties and ensures the designed parts' reliability. This modeling is essential for cutting tools, fixtures and tooling, friction pairs, highly loaded parts of machines and equipment, etc. Implementation of the abovementioned issues must ensure the functionality and assigned operating parameters of the designed parts and units in terms of wear resistance, stress-strain modes and dynamic behavior, loading capacity, etc. Advanced material processing approaches can be applied (plasma deposition, electro spark, chemical-thermocycling treatment, strengthening, etc.). Additionally, novel approaches can be implemented in designing advanced materials (polymers, composites, ceramics, nanomaterials, etc.). At the design stage of materials, it is essential to predict the functional, rheological, and tribological properties using numerical simulation and experimental studies.

Guest Editors

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Message from the Editorial Board

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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