Special Issue

Preparation and Characterization of Nanocomposite Coatings of Materials

Message from the Guest Editor

The main purpose of coatings is surface reinforcement, from mechanical, chemical, performance aspects. For structural materials, anticorrosive coating is usually required while maintaining mechanical performance. For surface engineering of small objects such as NPs, interfacial selectivity is usually targeted via nanocomposite coatings.

The development of advanced coatings requires in-depth understandings of the interplay between microstructures and macroscopic properties, including long-term performance when subjected to relevant surrounding environments. The terminal applications of nanocomposite coatings exist in diverse fields, such as advanced manufacturing, chemical engineering, nanomedicine, catalysis, energy conversions, oil-water separations and self-cleaning.

This SI will cover various interesting topics in nanocomposite coatings and its interdisciplinary fields, such as preparation strategies and pathways, understanding of interfacial adhesion and cohesion mechanisms, systematic characterization techniques, interplay of individual components within the coating composite, instrumental techniques, molecular dynamics, perspectives and accurate tunning of surface properties.

Guest Editor

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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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