Special Issue

Advancements in Alternative Coatings to Electrodeposited Hard Chromium

Message from the Guest Editors

Electrodeposited hard chromium coatings with a thickness of 1 μm to 500 μm have been extensively employed in industrial fields, such as construction, mining, aerospace, machine tools, and oilfield processing, due to their high wear and corrosion resistance, excellent hardness, and electrical properties as well as moderate cost. Owing to technical problems, environmental concerns and legislation, there is a global need to replace such coatings in industrial applications. This Special Issue covers a wide range of alternative techniques and rival coating materials, such as: trivalent chromium plating, non-chromium nanocrystalline coatings, plasma spraying, physical vapor deposition, chemical vapor deposition, laser cladding, laser surface alloying, low-temperature surface nitriding, low-temperature carburization etc. Therefore, interactions between the parametric study of the preparation process of alternative coatings, the developed microstructures and their defects, the mechanical and physical properties of the produced composites, and the corrosion and tribological performance in controlled service environments are the topics.

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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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