Special Issue

Corrosion Behaviors of Metallic Materials in Extreme Environments

Message from the Guest Editor

The challenges for structure materials in hostile environments have been baffling the development of many industrial fields such as nuclear energy. Except acceptable mechanical properties, the compatibility with the environments is also a crucial demand for structure materials. In current light water reactors, the coolant is hostile enough for many structure materials. These extreme environments pose great challenges to materials and demand the development of advanced structure materials. Metallic materials are still the basis for the implement of advanced reactors. In particular, high entropy alloys (HEAs) show some promising features such as resistances to irradiation and corrosion. Additive-manufactured materials also receive intensive attention by the efficiency in manufacturing complex component and enhanced performance. This special issue aims to compile recent progress in the corrosion behaviors of metallic materials in extreme environments (not limited to the above-mentioned coolants). The topic covers general corrosion, localized corrosion, oxidation, etc. Articles about corrosion test technique and simulation are also encouraged.

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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