Special Issue

Surface in Fatigue/Wear Loadings and Damage Developments

Message from the Guest Editor

The surface of metallic materials and/or multi-materials play an important role in the life of industrial components and/or systems, especially when they are subject to cyclic transient thermal and mechanical loadings. These solicitations damage the materials through the various mechanisms that are generally in interaction and through coupling with thermo-chemical reactions (oxidation/corrosion). Moreover, the surfaces of the components that are in relative movement with other bodies are damaged by even the more complex interactions between fatigue/wear/oxidation (and/or corrosion). The behaviour of the sub-surfaces is singular. On one hand, dislocations can leave the material by escaping out the free surface and forming extrusions/intrusions or roughening the surface. On the other hand, thermo-chemical reactions with oxygen when coupling with thermo-mechanical straining/stressing can alter the local mechanical properties and resistances. Keywords

- fatigue
- wear
- metallic materials
- oxidation
- ALM
- behaviour constitutive laws
- life and damage modeling

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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