Special Issue

Advances in High Cycle Fatigue and Fracture Failure of Metallic Materials and Components

Message from the Guest Editors

Most instances of structural failures in engineering can be attributed to High Cycle Fatigue phenomena. Thus, a profound understanding of the fatigue and fracture behaviors of the materials and structural elements is indispensable for enhancing their longevity and safety. Innovative materials and processes, such as additively manufactured materials, have spurred the use of novel methodologies to analyze intricate configurations. Consequently, these advancements necessitate specialized approaches to simulate the fracture responses, ensuring compliance with stringent safety requirements. This Special Issue intends to cover several topics, which include, but are not limited to:

- Fracture mechanics approaches for fatigue assessment of materials and components;
- Defect assessment and high cycle fatigue resistance;
- Fatigue and fracture of metallic alloys fabricated through additive manufacturing;
- Novel fatigue design criteria of mechanical components;
- Experimental methods in fracture mechanics.

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Message from the Editor-in-Chief

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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