Special Issue

Advances in Fatigue Analysis and Numerical Simulation in Engineering Materials

Message from the Guest Editors

Over a century ago, research concerning the fatigue of engineered materials was initiated. However, the fatigue evaluation was reimagined with the advent of new engineering materials, testing protocols, and computer methodologies. Understanding damage mechanisms at the submicro scale was made feasible by the combination of state-of-the-art sensor technology and real-time images of fatigue damage. The incorporation of computational approaches to fatigue study procedures, which are continually improved by ever-increasing computer capacity, yields further insights into designs against fatigue. Complicated fatigue-related structure–property interactions that are computationally expensive when utilizing physics-based modeling alone were accomplished using data-driven algorithms. Even after extensive study, the fatigue community is now even more in need of multidisciplinary approaches to fatigue analysis. We cordially encourage distinguished and pioneering fatigue investigators to partake in this endeavor to elevate the present developments in fatigue damage and fracture modeling within the purview delineated below.

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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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