

Special Issue

Advances in Modeling Fatigue Damage and Fracture of Engineering Materials

Message from the Guest Editors

Dear colleagues, The investigation of the fatigue of engineering materials started more than one hundred years ago; however, with the development of new engineering materials, testing methods, and computational techniques, fatigue assessment was reinvented. Real-time imagery of fatigue damage—coupled with state-of-the-art sensor technology—made understanding damage mechanisms at a sub-microscale possible. Further insights into design against fatigue are achieved by the integration of computational methods in the fatigue investigation techniques that are continuously enhanced by ever-increasing computational power. Data-driven algorithms achieved complicated fatigue-related structure–property relationships that are computationally prohibitive when using physics-based modeling alone. The fatigue community is currently thirsty for interdisciplinary approaches to fatigue analysis, even after more than one hundred years of fatigue research. We kindly invite renowned and early fatigue researchers to contribute to this effort of leveling up current advances in modeling fatigue damage and fracture within the scope highlighted here.

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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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