Special Issue

Thermal Reliability of Advanced Materials and Structures

Message from the Guest Editors

Advanced materials with various functionalities or structural features have been increasingly utilized in recent years to meet the sophisticated demands of modern technology. Thermal failure presents a significant concern for many advanced materials and structures across diverse thermal environments. Gaining a deeper understanding of thermal failure mechanisms is crucial for designing reliable advanced materials and structures. This Special Issue is dedicated to exploring the thermal reliability of advanced materials and structures under various thermal disturbances. Topics range from transient heating in ultrafast laser fabrication to the quenching of advanced metal alloys, thermal cycles in electronic devices, and transient heat conduction in heterogeneous microstructures. We welcome papers that address heat conduction, thermal stress analysis, thermal fatigue and fracture of advanced materials and structures, and related subjects. By showcasing recent advancements in this critical area, we aim to enhance our understanding of the thermal reliability of advanced materials and structures.

Guest Editors

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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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