Special Issue

Damage Analysis and Reliability Assessment for Composite Materials

Message from the Guest Editor

Composite materials such as continuous fiber-reinforced polymers are marked by anisotropic behavior and particular failure mechanisms. Engineering methods established for metals such as equivalent stress concepts for stress analysis are not suitable for composite materials. Therefore, the analysis of damage and failure behavior needs special consideration. Despite about half a century of research on the mechanical behavior and failure mechanisms of fiber-reinforced composite materials, many questions are still open. This Special Issue on “Damage Analysis and Reliability Assessment for Composite Materials” is related to recent research results on the analysis of damage mechanisms, failure concepts and influencing factors such as constituent properties or environmental conditions. These are the basis to assess the reliability of composite materials in structural applications. Static, cyclic, dynamic and transient loadings are considered. The focus is on continuous fiber-reinforced polymers (FRP) for structural applications, but contributions on other types of reinforcement or matrices are also welcome.

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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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