

Special Issue

Reliability Modeling of Complex Systems in Materials and Devices

Message from the Guest Editors

“Complex Systems” are the systems consisting of multifold materials and components interacting with each other in complicated ways. They exist widely in all kinds of vital industries, including aerospace, civil, energy, semiconductors, etc. Driven by modern technologies, the complexity of those systems has increased dramatically, making reliability design and its optimization a great challenge in practical situations. On the other hand, numerous fantastic solutions on reliability analysis and evaluation have also emerged with the advancement of technologies such as numerical simulations, big data, intelligence design, etc. By virtue of these methods, the reliability problems of complex systems could be tackled with great opportunities. To extend the understanding of complex system reliability, reliability studies on advanced theory, models and algorithms for products at material, component and system levels are particularly welcome in this Special Issue. The topics include but are not limited to: AI based reliability modeling; physics-informed neural network for physics of failure; multi-physics and multi-scale simulation.

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Message from the Editorial Board

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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