Special Issue

Modeling and Design Based on Shape Memory Behavior

Message from the Guest Editors

Shape memory materials (SMMs) are a class of smart materials that, without any additional mechanical effort, are capable of memorizing their permanent shapes and recovering them through different types of stimuli. Among the four main types of shape memory material, which are shape memory ceramics, shape memory composites (SMCS), shape memory alloys (SMAs), and shape memory polymers (SMPs), the last two terms are of considerable attention due to the widespread types of applications. The feature of shape memory effect (SME) can be seen when a significant deformation may be recovered through a particular stimulus. However, other features including superelasticity (in alloys) and visco-elasticity (in polymers) have drawn attention due to the interesting behavior upon unloading and loading. Furthermore, several methods including experimental, computational, and applied mechanics may be employed to analyze mechanical as well as electrical devices. Therefore, this Special Issue is focused on the analysis and development of novel devices, structures, and applications of SMAs and SMPs in engineering fields from civil and aerospace engineering to medical devices.

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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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