Special Issue

Technology and Applications of Shape Memory Materials

Message from the Guest Editors

Shape memory alloys (SMAs), as functional materials, are widely used in fields such as aerospace, civil engineering, and biomedical engineering. SMAs have functional properties such as the shape memory effect and superelasticity. SMAs are mainly be NiTi-based, iron-based, copper-based, magnesium-based, etc. NiTi-based SMAs are the most common. The properties of SMAs include phase transformation temperatures, hysteresis, plateau stress, recoverable strain, recovery stress, etc. The performance of SMAs is closely related to their composition and microstructure. The performance of shape memory alloys is sensitive to their composition, and changes in composition can greatly alter the phase transformation temperatures of the alloys, thereby altering their performance. The aim of this Special Issue is to understand the relationship between the performance and microstructure of SMAs, explore technical methods to improve the performance of SMAs, prospect the application prospects of nanocrystalline SMAs, and pay special attention to the performance and influencing factors of nanocrystalline SMAs.

Guest Editors

Dr. Xiaobin Shi

Dr. Yang Shao

Dr. Jiang Jiang

Dr. Qingkun Meng

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Materials
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
materials@mdpi.com

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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.

Editor-in-Chief

Prof. Dr. Maryam Tabrizian
1. Department of Biomedical Engineering, Faculty of Medicine and Health Sciences, McGill University, Montreal, QC H3A 2B6, Canada
2. Faculty of Dentistry and Oral Health Sciences, McGill University, 3640 Rue University, Montreal, QC H3A 0C7, Canada

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