Special Issue

Shape Memory Alloys and Piezoelectric Materials and Their Applications

Message from the Guest Editor

Smart structures have been widely applied in aerospace, civil engineering, ship, automobile, water conservancy and many other industries. The realization of intelligent functions depends on the development of sensors, actuators, controllers, etc. Shape memory alloys and piezoelectric materials are one of the most used materials in the regard, which play important roles in the applications of smart structures because of their many advantages. Much work has been done in both theoretical and experimental studies on shape memory alloys and piezoelectric actuators. To encourage further understanding and development of these two materials, this special issue is organized to collect original and innovative papers on topics including but not limit to the preparation, analysis, modeling of various types of shape memory alloys and piezoelectric actuators, and their applications in smart structures. Theoretical, numerical and experimental contributions are equally welcome.

Guest Editor

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About the Journal

Message from the Editorial Board

We are just entering the Next Wave of Technology (NWT) where actuators will play the same role as the computer chip did for computers/social media approximately four decades ago. Just in the U.S., production of $1 trillion year of electromechanical systems (vehicles, orthotics, manufacturing cells, freight trains, aircraft, etc.) will be impacted by the NWT, all driven by actuators. Five key trends can be found for the future perspectives: “Performance to Reliability”, “Hard to Soft”, “Macro to Nano”, “Homo to Hetero” and “Single to Multi functional”. We invite papers that primarily impact these economic sectors; those illustrating basic scientific principles are also welcome.

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