Special Issue

Research Advances in Magnetism and Magnetoelasticity: From Materials to Sensors

Message from the Guest Editor

The magnetoelastic Villari effect has been known for over one hundred years. Previously it was commonly used for the development of high measurement range force sensors, called pressductors or tensductors. Such sensors were successfully used in industrial applications. However, recently developed magnetic materials create new possibilities in the utilization of magnetoelastic effects. As a result, magnetoelastic research has received a fresh impetus, especially due to the development of microscale applications. A wide range of magnetoelastic effects (such as Villari effect, Wiedemann effect, Barrett effect, stress-impedance as well as Guillemin effect) are applied for the development of microscale, high-end sensors for mechatronics, bio-medical assessment, chemical detection, or nanometrology applications. The development of such sensors requires a novel approach for functional materials research and characterization. This Special Issue will present the recent state of the art in the magnetoelastic research, creating the space for experience exchange and scientific discussion for further cooperation.

Guest Editor

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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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