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Research Advances in Magnetism and Magnetoelasticity: From Materials to Sensors

Guest Editor:

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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.

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Message from the Editor-in-Chief

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