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Controllable Electrorheological and Nano/Magnetorheological Materials and their Applications

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Message from the Guest Editors

Dear Colleagues,

Checking materials' properties has attracted a lot of attention in recent decades. Magneto/nanomagneto rheological and electrorheological fluids, among others, are smart lubricants whose rheological properties can be changed by applying a magnetic or an electric field respectively. Smart lubricants are commonly a suspension of solid magnetized or dielectric particles diffused in non-conducting liquid. By applying a magnetic or electric field, their resistance to flow can be altered very quickly. The smart fluids can change their rheological behavior from Newtonian type to Bingham type, in which case the apparent viscosity of the fluid becomes non-linear. Due to this behavior, smart fluids can endure external pressure or force variability with the advantages of having a simple design, offering continuous control and a fast response.

This Special Issue includes works that deal with the development of smart machines, materials and processes, by introducing new methods, models and multidisciplinary approaches, through research and an in depth understanding of physical phenomena.

Assis. Prof. Pantelis G. Nikolakopoulos
Dr. Dimitrios Bompos
Guest Editors

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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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