Special Issue

Rheology of Advanced Complex Fluids

Message from the Guest Editor

The deformation and flow of polymeric or structured materials, which are also called complex fluids, is essentially controlled by their molecular chemistry and, consequently, their inherent rheological properties, their so-called material functions. Synthetic or biological structured fluids contain more than one phase, such as solid particles dispersed in a liquid, gas particles in foam, or an emulsion of immiscible liquids. On the other hand, polymeric and biopolymeric fluids have macromolecular structures. In the first case, the rheological behavior is dominated by the interactions of the constituents, while in the second one, intramolecular forces and chain entanglements play a crucial role. The continuous effort to predict and control the rheological response of complex fluids has led to a prolonged collaboration between industry, research institutes, and academia. The current Issue aims to host contributions related to measurements through experimental methods, characterization through advanced rheometric protocols, and the constitutive modeling and flow simulation of such fluids.

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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.

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