Special Issue

Structure, Rheology, and Processing Applications of Polymer Materials

Message from the Guest Editors

This Special Issue focuses on rheological phenomena in polymer processing using emerging technologies like additive manufacturing and foaming, as well as conventional plastic shaping processes. The non-Newtonian nature of polymers must be considered for tool eco-design, optimization, and melt flow analysis in polymer processing equipment. Rheology is used in resin characterization, product performance prediction, and selecting resin grades for different shaping processes. The technique can probe macromolecular structure, molecular weight distribution, long-chain branching, and chain topology. Rheological measurements are necessary inputs for numerical simulation codes in designing polymer-processing tools. The Special Issue covers topics like flow of thermo-rheologically simple and complex fluids, effects of processing on polymer morphology and physical performances, and polymer recycling methods. It includes both theoretical and experimental studies, with a focus on environmentally friendly processes and eco-designed materials.

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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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