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Structure, Rheology, and Processing Applications of Polymer Materials

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Message from the Guest Editors

Dear Colleagues,

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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Message from the Editor-in-Chief

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