Special Issue

Multiscale Modeling of Polymeric Systems for Time-Dependent Nonlinear Properties

Message from the Guest Editors

Polymeric systems exhibit macroscopic time-dependent properties, which are important in many applications such as biomedical engineering (drug delivery, tissue culture), rubber industries (automobile tires, seals/gaskets in the oil and gas industry), and soft electronics. Modeling of strain-rate dependent elasticity, hyperelasticity, hysteresis, stress relaxation, and creep behavior at the materials level is required for finite element analysis at the coupon level for designing and optimization. Different models are fitted with experimental data to determine material constants for constitutive modeling and finite element analysis. Discovering new materials through this trial-and-error method is time-consuming. A multiscale modeling technique such as bridging molecular dynamic (MD) simulations with constitutive models facilitates the discovery of new materials. However, as time and length scales are different between molecular and continuum levels, a bridging technique is required between these two levels. This Special Issue welcomes any bridging techniques, not limited to MD simulations; however, the prediction of nonlinear time-dependent properties is expected.

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Since its foundation in 2009, *Polymers* has developed into an internationally renowned, extremely successful open access journal. The editorial team and the editorial board dedicatedly combine open-access publishing and high-quality rigorous peer reviewing. The performance of the journal has proven this strategy to be well-suited and highly successful. This is reflected in the increasing impact factor of *Polymers*, the most recent one being 4.7.

I would like to invite you to contribute to the success of the journal by sending us your high quality research papers. We would be pleased to welcome you as one of our authors.

Editor-in-Chief

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