



fluids



Special Issue Reprint

Drop, Bubble and Particle Dynamics in Complex Fluids

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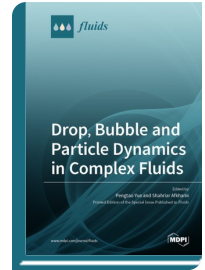
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The presence of drops, bubbles, and particles affects the behavior and response of complex multiphase fluids. In many applications, these complex fluids have more than one non-Newtonian component, e.g., polymer melts, liquid crystals, and blood plasma. In fact, most fluids exhibit non-Newtonian behaviors, such as yield stress, viscoelasticity, viscoplasticity, shear thinning, or shear thickening, under certain flow conditions. Even in the complex fluids composed of Newtonian components, the coupling between different components and the evolution of internal boundaries often lead to a complex rheology. Thus the dynamics of drops, bubbles, and particles in both Newtonian fluids and non-Newtonian fluids are crucial to the understanding of the macroscopic behavior of complex fluids. This Special Issue aims to gather a wide variety of papers that focus on drop, bubble and particle dynamics in complex fluids. Potential topics include, but are not limited to, drop deformation, rising drops, pair-wise drop interactions, drop migration in channel flows, and the interaction of particles with flow systems such as pastes and slurries, glasses, suspensions, and emulsions. We emphasize numerical simulations, but also welcome experimental and theoretical contributions.



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