Special Issue

Recent Advances in Emulsion Transport in Porous Media

Message from the Guest Editors

Multiphase flow in porous media is constituted by the interplay of viscous and capillary forces. As a result of the capillary effect, colloidal dispersions, such as emulsions, foams, or suspensions, are generated, trapped, and transported in porous media. Among these colloidal dispersions, emulsions are very common in various industries, such as food, biology, energy, and sustainability. Recent advances in micro-CT, micro-MRI, and micromodels provide experimental platforms to gain insights into the pore-scale flow and diffusion of the droplets in porous media. The rapid development of the state-of-the-art pore-scale models, such as lattice Boltzmann, stochastic rotation dynamics, volume-of-fluid, level-set, phase-field, and pore-network models, has huge potential to simulate the transport of emulsion in porous media. This Special Issue invites original research articles and review papers on recent advances in experimental, theoretical, and numerical works related to the convective and diffusive transport of emulsion in porous media, with applications to various industries, such as energy, the environment, biology, and sustainability.

Guest Editors

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Deadline for manuscript submissions

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