

Segregation in multicomponent droplet evaporation

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While the evaporation of a single component droplet meanwhile is pretty well understood, the richness of phenomena in multicomponent droplet evaporation keeps surprising us. In this talk we will show and explain several of such phenomena, namely evaporation-triggered segregation thanks to either weak solutal Marangoni flow or thanks to gravitational effects, and the evaporation of ternary liquid droplet, which can lead to spontaneous nucleation of droplets consisting of a new phase. We will also show how this new phase can be utilized to self-lubricate the droplet in order to suppress the coffee stain effects. The research work shown in this talks combines experiments, numerical simulations, and theory.

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