

Drop generation using surfactants under the electric field

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This study is experimental research about droplet generation using surfactants under the electric field. Under the electric field, the Maxwell stress is exerted on the interface of the mother drop and deforms it. Then, the electric field and deformation of mother drop cause the non-uniform distribution of surfactant on the interface. This non-uniform distribution of surfactant makes the surface tension gradient that makes the Marangoni flow. This accelerates the deformation of mother drop and, consequently, the mother drop breaks up, making a daughter drop. In this work, generation patterns of daughter drops are investigated under various conditions: concentration of surfactant and applied voltages.