

Create a neat cosmetic emulsion - Study of double emulsion for interfacial property and shear stress.

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 (rhadam@cnu.ac.kr*)

This study reports microfluidic method for generating monodisperse double emulsion with simple hydrodynamic control manner. First, we fabricate parallelized microcapillary microfluidic device using glass microcapillary without surface modification. Based on microcapillary microfluidic system, we can generate monodisperse double emulsions (W/O/W). The inner fluid is deionized water containing 0.5 wt% Tween 20, middle fluid is n-hexadecane with 5 wt% Span 80, and outer fluid is 10 wt% poly(vinyl alcohol)(PVA) aqueous solution respectively. Furthermore, we can control the number of inner droplets by control flow rate of inner fluid. Thus, we expect that double emulsion or multiple emulsion generated by microcapillary microfluidic device can be applicable for food, cosmetics, medicine, and biochemical reactions.