

Abstract Submitted
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Spreading of Emulsions on Glass Substrates ALIREZA MOHAMMAD KARIM, PIROUZ KAVEHPOUR, University of California, Los Angeles — The wettability of emulsions is an important factor with explicit influence in an extensive variety of industrial applications ranging from the petroleum to food industries. Surprisingly, there is no comprehensive study of emulsion spreading to date; this is due to the complexity of the structure of the emulsions and non-homogeneity of the dispersed phase bubbles in size as well as distribution through the emulsion. The spreading of water/silicone oil emulsions on glass substrates was investigated. The emulsions were prepared with varying volume fractions of water dispersed in silicone oil, with addition of small amounts of surfactant to stabilize the emulsion structure. The time dependent variation of dynamic contact angle, base diameter, and the spreading rate of the droplets of an emulsion are different from a pure substance. The effect of water/silicone oil weight percentage as well as the droplet size and dispersed phase bubble size were also investigated. The weight percentage of water/silicone oil emulsion and droplet size did not have significant influence on the spreading dynamics; however the dispersed phase drop size affected the spreading dynamics substantially.

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