

Surfactant-Mediated Electric Charging Phenomena in Nonpolar Dispersions

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Electric charging of colloidal particles in nonpolar solvents plays a crucial role for many industrial applications and products. Although disfavored by the low solvent permittivity, particle charging can be induced by added surfactants, even nonionic ones, but the underlying mechanism is poorly understood, and neither the magnitude nor the sign of charge can generally be predicted from the particle and surfactant properties. In this talk, I will share the results from a series of systematic studies conducted to achieve a better understanding of particle charging mechanisms in nonpolar dispersions and discuss about the interplay between multiple charging pathways.