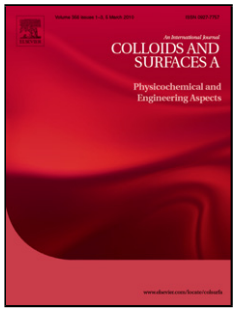

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Synergism Between Anionic Double Tail and Zwitterionic Single Tail Surfactants in the Formation of Mixed Micelles and Vesicles, and Use of the Micelle Templates for the Synthesis of Nano-structured Gold Particles

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Highlights

1. Synergistic interaction between TPS and AOT in the bulk and at the interface.
2. Quantification of composition dependent synergism of the mixed systems.
3. Composition dependent mixed micelle to vesicle to micelle transition.
4. Mixed TPS-AOT templates to prepare gold nano-particles.

Abstract

Interaction between the anionic double tail AOT (sodium bis (ethylhexyl) sulfosuccinate) and the zwitterionic single tail TPS (N-tetradecyl-N,N-dimethyl-3-ammoino-1-propane sulfonate) in water and at the air/water interface has been studied. The surfactants synergistically interact with the solution as well as at the air/water interface forming mixed assemblies. The physicochemical properties of the free amphiphile monomers up to the point of their critical