



OPEN TALK ANNOUNCEMENT

26 December 2013

4.00 p.m.

Venue: Fermion

Speaker

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Title

Vesicle to Micelle Transition in Catanionics

Abstract:

Aqueous mixtures of anionic and cationic surfactants, so-called catanionics, on solubilisation yield aggregates whose stability increases by adding alcohols of different chain lengths. The calorimetric patterns showed that the solubilization of the catanionics involves multiple endotherms because of different interactions of different magnitudes resulting in a multistep solubilisation [1]. The catanionics produce micelles or vesicles depending upon their compositions [2,3]. The formation and properties of aggregates of cationic and anionic surfactant mixtures (i.e. catanionics) at a fixed mole ratio in aqueous medium are investigated in the presence of n-propanol, isopropanol, C3-diols and C3-triol with particular emphasis on the size and nature of the micelle/vesicle by using conductivity, dynamic light scattering and fluorescence spectroscopy methods. The influence of temperature on the micellization of catanionic mixtures has also been studied. The micelle-to-vesicle transition can be tuned by changing composition or temperature. Added alcohols, due to their tendency to modulate solvent properties, affect the size of the catanionic aggregates.

Reference:

- [1] Mahiuddin S.; Zech O.; Raith S.; Touraud D.; Kunz W. *Langmuir* 2009, 25, 12516-12521.
- [2] Barbetta A.; Pucci C.; Tardani F.; Andreozzi P.; Mesa C. L. *J. Phys. Chem. B* 2011, 115, 12751-12758.
- [3] Tah B.; Pal P.; Mahato M.; Talapatra G. B. *J. Phys. Chem. B* 2011, 115, 8493-8499

Keywords: Micelles, Vesicles, SDS, CTAB, Alcohols, micelle-to-vesicle transition
