
SIS 2012 CONFERENCE

University of Alberta, Edmonton

June 24 - 28, 2012



Symposia and Sessions

- Adsorption at Interfaces (ADS)
 - Special Symposium on Energy and Environmental Applications (ENER)
 - Interfacial Tension and Capillarity (INTT)
 - Surfactants in Tribology (TRIB)
 - Wetting, Spreading, and Superhydrophobicity (WETT)
 - Surfactants and Self-Assembly (SURF)
 - Surfactants and Polymers in Biosystems (BIOSURF)
 - Interfacial and Surface Forces (INTF)
 - Micelles and Emulsions (MIC)
 - Thermodynamics and Kinetics in Surfactant and Colloidal Systems (THERMO)
 - Monolayer and Langmuir Films (MONO)
 - Posters
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is also shown that the formation of this highly viscous boundary film leads to starved lubrication. The modelling of the film build-up process allows us to quantify the rheological properties of the boundary film in terms of high viscosity and very low piezoviscosity. Second, the sheared boundary film exhibits a constant thickness and a rather low friction response that can be correlated to its piezoviscous properties. The role of the bilayer swelling by addition of naphthenic oil is discussed on the film formation capability as well as the friction behaviour.

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Thermosensitivity of superhydrophobic surfactants polymeric complexes ,

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Sagdat Tazhibayeva , Al-Faraby Kazakh National University , Kazakhstan ,

Kuanyszbek Musabekov , Al-Faraby Kazakh National University , Kazakhstan ,

Azymbek Kokanbayev , Al-Faraby Kazakh National University , Kazakhstan ,

Ardak Sapieva , Astana Medicinal University , Kazakhstan ,

Gulzhan Seit , Al-Faraby Kazakh National University , Kazakhstan .

The complex formation superhydrophobic surfactants of alkylammonium salts containing two hydrocarbon radicals with long chains and two polar groups with polyacrylic acids and polymethacrylic acids is studied. It is shown that at change of temperature from 293 K to 333 K difference in surfactants polymeric complexes viscosity values by heating and cooling system mode is observed. It is explained from a position of change electrostatic attraction forces and hydrophobic interactions parities.

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Adsorption mechanisms of surfactant mixtures on non-polar solid surfaces and importance for the stability of dispersions ,

Wolfgang von Rybinski , University of Duesseldorf , Germany ,

Meriem Jabnoun , Schwan-Stabilo Cosmetics , Germany .

Mixtures of anionic and nonionic surfactants are widely used in numerous applications. In these applications the different surfactants interact with each other and with the surfaces in the system. This regards especially the dispersion of solid particles in aqueous systems. The adsorption mechanism of surfactants at the solid-liquid interface is one important parameter for the stability of dispersions. In the present study the adsorption process of anionic surfactants, nonionic surfactants and their mixtures on non-polar surfaces is investigated using a combination of adsorption isotherms, calorimetry and Atomic Force Microscopy (AFM) in order to propose a model for the adsorption of mixtures. In addition to this, a comparison is done between the adsorption parameters and the stabilization behavior of solid particles by mixtures of different anionic surfactants having main structural differences and the nonionic surfactant. The results obtained by the combination of the different techniques show a strong influence of the structure of the anionic surfactant on the adsorption behavior of the mixtures. The surfactants are adsorbed in a flat orientation to the hydrophobic surface with a further aggregation to micellar-like aggregates at higher concentrations. This could be assumed from the calorimetric data in combination with the adsorbed amounts dependent on the surface coverage. AFM measurements of the structure of
