

Mixed Surfactant Adsorption: Complexity and Relevance

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Neutron reflectivity and small angle neutron scattering, in combination with H/D isotopic substitution, have in recent years contributed greatly to our understanding of many aspects of Soft Matter. In particular neutron reflectivity and small angle scattering measurements have contributed to a significant improvement of our understanding of the behavior of mixed surfactants at interfaces and in solution. Some of the key elements of surfactant mixing and the way in which neutron scattering has contributed to their understanding will be described. There will be a particular focus on systems in which there is a strong interplay between changes in the solution phase behavior and in the surface adsorption properties. Throughout, emphasis will be placed on the relevance of this improved understanding to the wide ranging domestic, industrial and technological applications of mixed surfactants.

Blue Crystal Magnetism – Neutrons in the Quasiparticle Zoo

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People should be judged by their actions not their appearance. Likewise, for quantum magnets do we often learn more about their nature by studying their excitations than by solving their structure. In fact, those with no order tend to reveal the most interesting behaviour. In this seminar, I will show some examples of exotic quasiparticles that neutrons have revealed in a selection of (mostly) blue crystals.