Experimental Report

Proposal: **9-10-1360** **Council:** 4/2014

Title: Structure in unusual microemulsions

This proposal is a new proposal

Researh Area: Chemistry

Main proposer: **EASTOE Julian**

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Samples: water-surfactants-heptane

Instrument	Req. Days	All. Days	From	To
D11	2	1	10/11/2014	11/11/2014

Abstract:

The research topic is Low surface energy materials (LSEMs), and development of new hydrocarbon (HC) architectures as replacements for environmentally hazardous fluorocarbon surfactants and polymers. The aim is to explore how chain branching, substituted cations and co-surfactants affect the structural behavior of the water in oil (w/o) microemulsions. The surfactants of interest are shown in Figure 1, and the preliminary SANS data (Figure 2) for the surfactant/water/oil (micro)emulsions with w=10 and w=20, indicates that stable multi-component droplets are present in the system and the degree of droplet growth depends on the water content (Table 1). This project is supported by a G8 Governments grant: New low surface energy materials LSEMs G8 Research Councils Initiative on Multilateral Research Funding, EPSRC grant code: EP/K020676/1.

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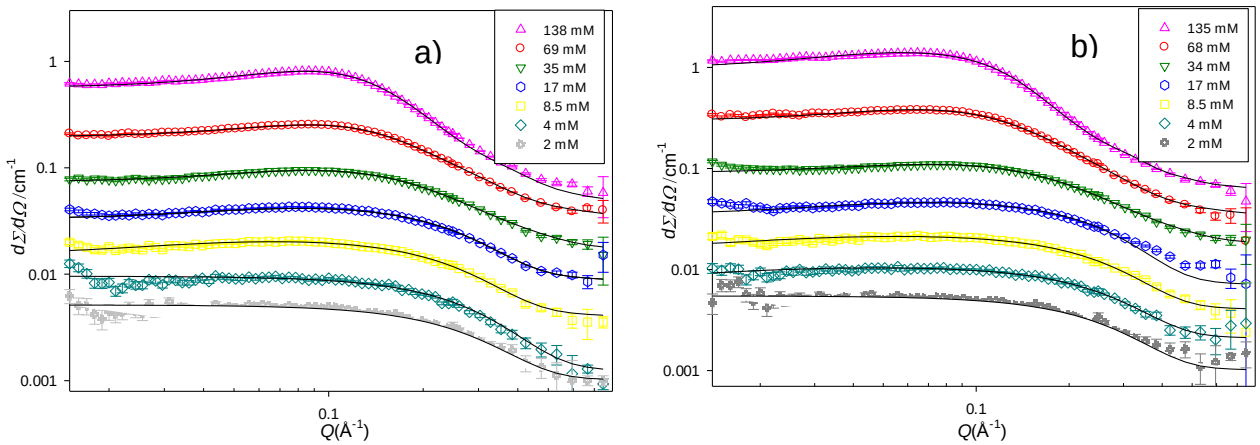
Structure in unusual microemulsions
Instrument :
D11
Dates of experiment :
From : 10/11/2014 To : 11/11/2014

The results will be featured in a publication.



SANS profiles for a) Na^+-$iC_{18}SS$(FO-180) , and b) Na^+-$iC_{18}SS$(FO-180N) surfactants in d_6-DMSO at a range of concentrations. Lines are fits to the charged ellipsoid model for concentrations between 138 mM to 17 mM and charged sphere and sphere for the lower concentrations.