Supplementary Information

Interplay between Bulk Self-Assembly, Interfacial and Foaming Properties in a Catanionic Surfactant Mixture of Varying Composition, J. Ferreira, A. Mikhailovskaia, A. Chenneviere, F. Restagno, F.Cousin, F. Muller, J. Degrouard, A. Salonen, E. F. Marques.

1. DLS and zeta potential measurements

The catanionic solutions were analyzed with a Malvern ZetaSizer Nano ZS. For particle size determination, 1 mL aliquots of solution were placed in disposable polystyrene covets and analyzed at 27 ºC. For zeta potential determination, 1 mL aliquots of solution were placed in disposable capillary polycarbonate cells equipped with gold-coated electrodes. Samples were equilibrated for 2 min before analysis and 5 runs per sample taken.

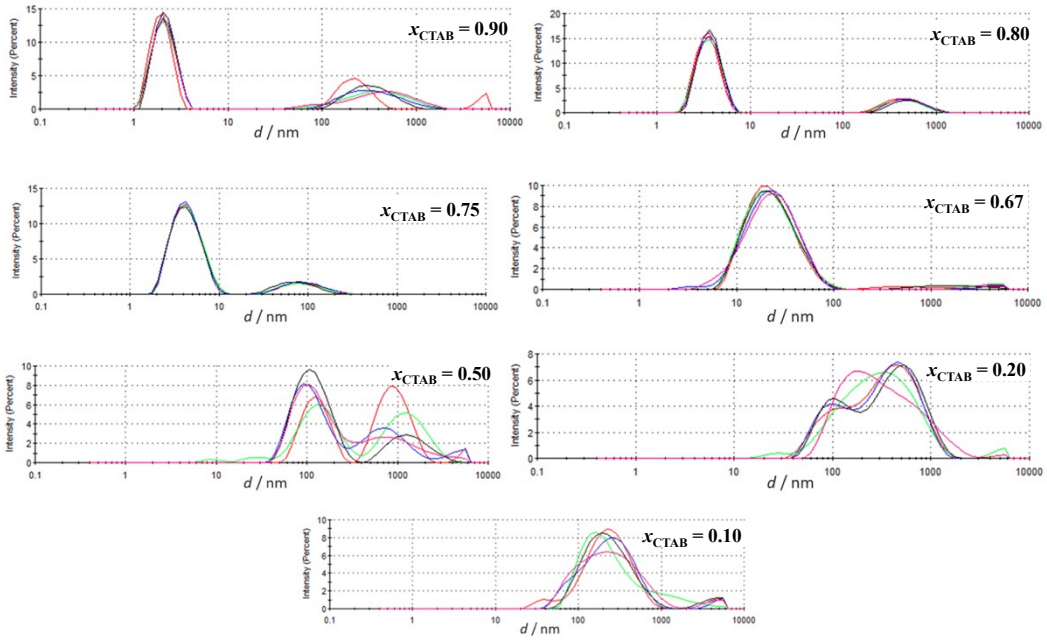

Figure S1. DLS intensity vs. size curves for different x_{CTAB}.

2. Viscosity

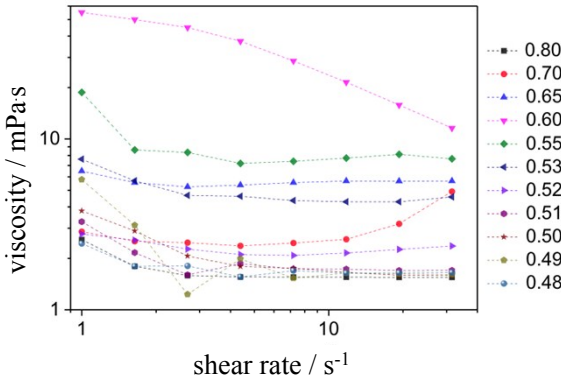

Figure S2. Viscosity a function of the shear rate for different x_{CTAB} samples. The vertical axis is represented in logarithmic scale for convenience

3. Calculation of β from surface tension data

The □ parameter is related to the enthalpy of mixing, $\Delta_{mix}H$, through

$$\Delta_{mix}H = n\beta RTx_1x_2 \qquad \text{(eq. S1)}$$

β can be calculated from surface tension data for each x_{CTAB} value from the expression:

$$\beta = \frac{\ln\left(\frac{x_2 cmc_{12}}{x_2^m\, cmc_2}\right)}{\left(1-x_1^m\right)^2} = \frac{\ln\left(\frac{x_1 cmc_{12}}{x_1^m\, cmc_2}\right)}{\left(x_2^m\right)^2} \qquad \text{(eq. S2)}$$

where cmc_{12} is the *cmc* of the mixture and x_1^m and x_2^m are the molar fractions of surfactant 1 (CTAB) and surfactant 2 (SOSo) in the mixed micelles. They can be calculated from:

$$x_1^m = \frac{x_1 \cdot cmc_2}{x_1 \cdot cmc_2 + x_2 \cdot cmc_1};\; x_2^m = \frac{x_2 \cdot cmc_1}{x_1 \cdot cmc_2 + x_2 \cdot cmc_1} \qquad \text{(eq. S3)}$$

4. SANS spectra of foams

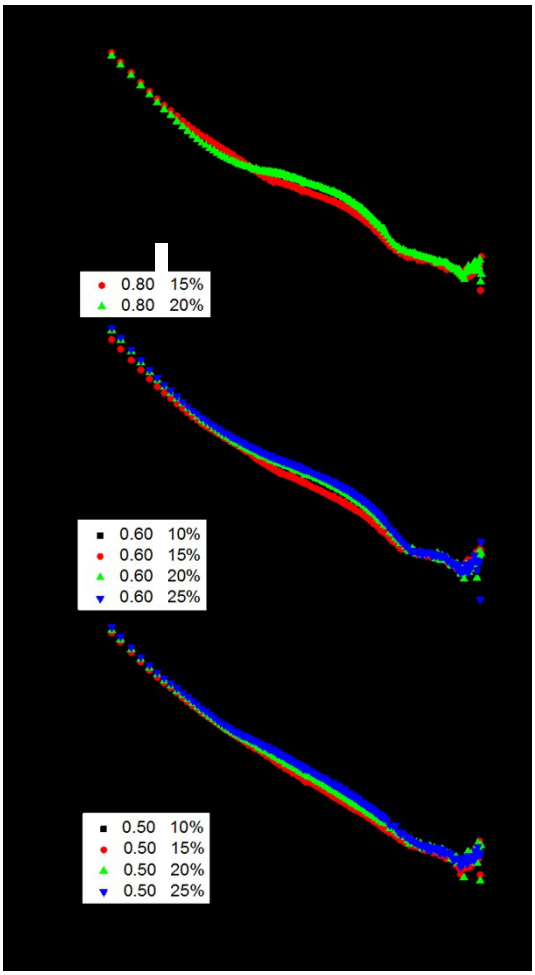

Figure S4. SANS spectra for foams generated at 15% and 20% for sample 0.800 (A) and at 10%, 15%, 20% and 25% for samples 0.600 (B) and 0.500 (C).