

Supporting Information

Soft microgels as Pickering emulsion stabilisers: role of particle deformability

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Particle packing at the interface and limited coalescence

For emulsions that undergo a limited coalescence process, the linear dependence of the average inverse drop diameter as a function of the particle amount is generally observed at low particle concentration. In that limit, all the particles are adsorbed at the oil/water interface. Conversely, when particles are in excess, the linearity is lost and the obtained emulsions become very polydisperse. In this limit the size distribution is less sensitive to the total particle amount and depends mainly on the stirring intensity.

Concerning emulsions stabilised by microgels, it is worth noticing that the extension of the linear domain, in terms of particle amount, depends on the microgel cross-linking density. As the cross-linking density increases, the extent of linear regime progressively decreases as can be observed on (Figure SI.1) where only the data corresponding to the linear regime have been plotted. The linear regime becomes even no more observable for the most cross-linked microgels (5 mol.% and 10 mol.% BIS) suggesting that particle deformability has also an effect on the microgels adsorption during emulsification.

To compare the three experiments on the same graph, we have plotted the evolution of $1/D$ vs. S_{eq}/V_d for the different cross-linker densities in the low particle concentration regime in Figure 5 of the publication.

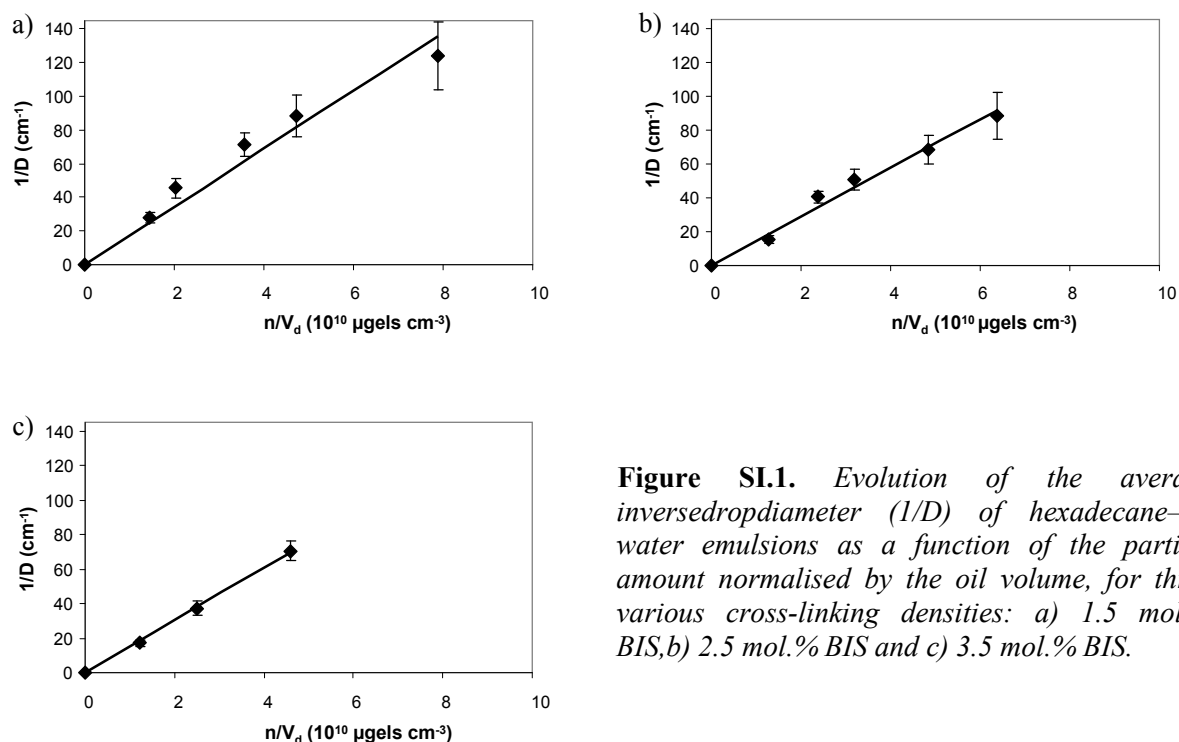


Figure SI.1. Evolution of the average inversedropdiameter ($1/D$) of hexadecane-in-water emulsions as a function of the particle amount normalised by the oil volume, for three various cross-linking densities: a) 1.5 mol.% BIS, b) 2.5 mol.% BIS and c) 3.5 mol.% BIS.