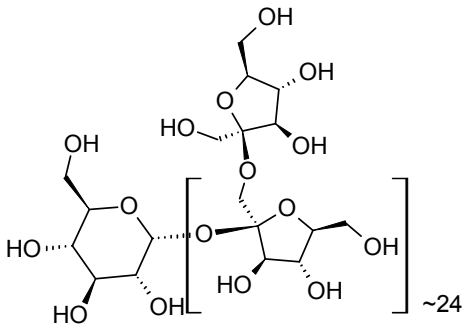
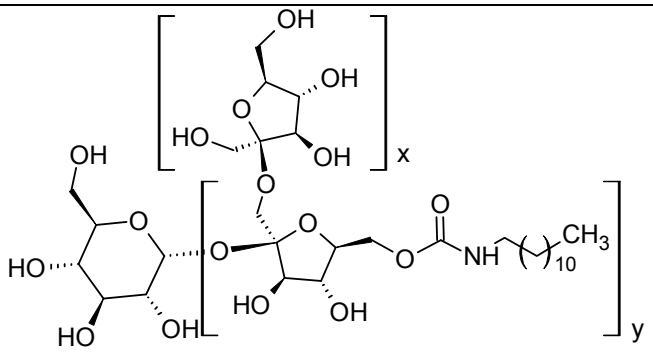
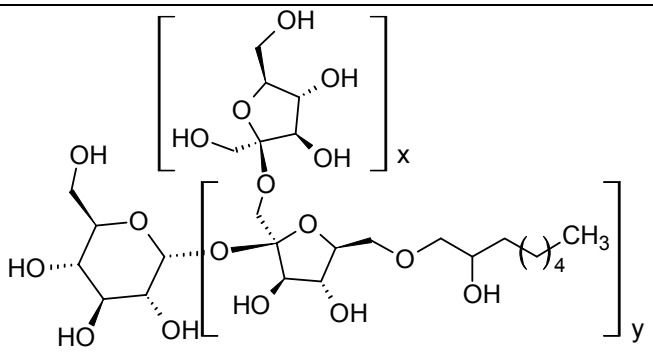
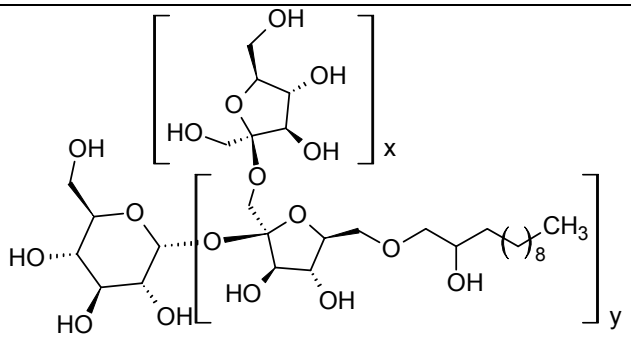
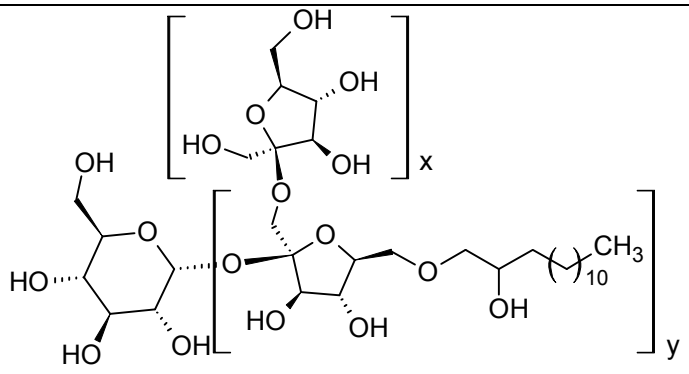
Electronic Supporting Information

Fig.S1[†]. Chemical Structure of HMI and InutecN25:

Names	Structure	Characteristics
InutecN25		Inulin extracted from chicory roots with a mean degree of polymerisation (DP) of 25 Supplied by Orafti BBC
InutecSP1	 x+y~25	Commercial inulin based surfactant with dodecyl carbamate modification Supplied by Orafti BBC
InEC8	 x+y~25	Synthesised inulin based surfactant with β-hydroxyoctyl modification DS: 0.18
InEC12	 x+y~25	Synthesised inulin based surfactant with β-hydroxydodecyl modification DS: 0.12

InEC14	 x+y~25	Synthesised inulin based surfactant with β-hydroxytetradecyl modification DS: 0.14

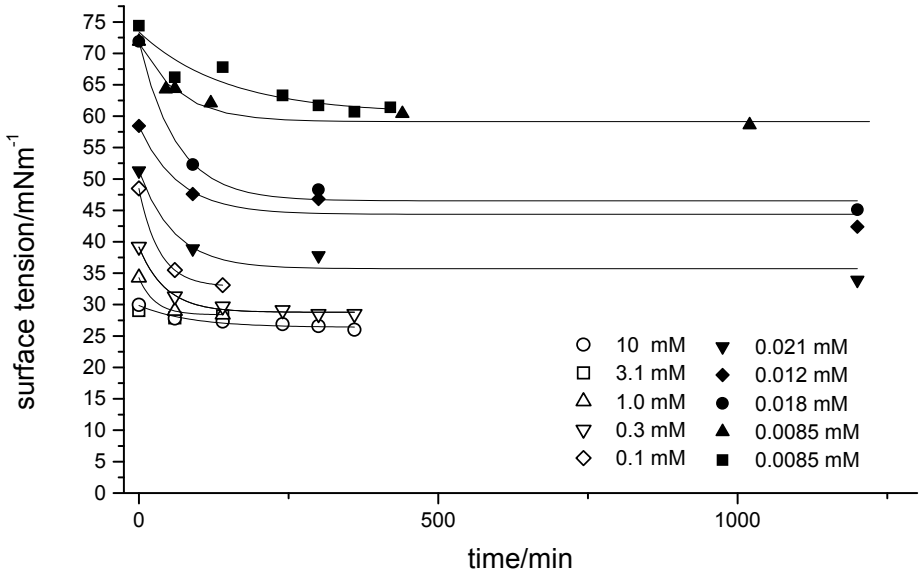


Fig.S2†. Surface tension evolution with time as a function of InEC8 concentration. An exponential decay for each concentration is represented by lines. The maximum drift appears at 18 µM with a reduction of about 20 mNm-1 after more than two hours.

Table S1†. Derived parameters* for oblate ellipsoids with Gaussian chains.

	Compounds				
Parameter	**Inulin**	**InEC8**	**InEC12**	**InEC14**	**InutecSp1**
Ra=Rb/ nm	1.99	1.34	1.87	2.04	2.18
Rc/ nm	0.38	1.34	1.13	1.13	2.18
Rg /nm		1.5	3.3	4.2	1.02
Nagg	1.2	9	15	16	43
Am/nm^2		2.5	2.02	2.03	1.39
Ac/nm^2		0.51	0.63	0.67	0.57
Lmax/nm		1.05	1.54	1.80	1.80
χ^2_{red}	2.7	1.05	2.6	3.7	1.21

**Ra*, *Rb* and *Rc* are the three radii of the ellipsoids, *Rg* the gyration radii of the attached chains, *Nagg* the aggregation number, *Am* the area per molecule at the surface of the ellipsoid, *Ac* area per hydrophobic chain at the surface of the ellipsoid, *Lmax* the maximum length of fully extended hydrocarbon chain and χ^2_{red} reduced chi squared.

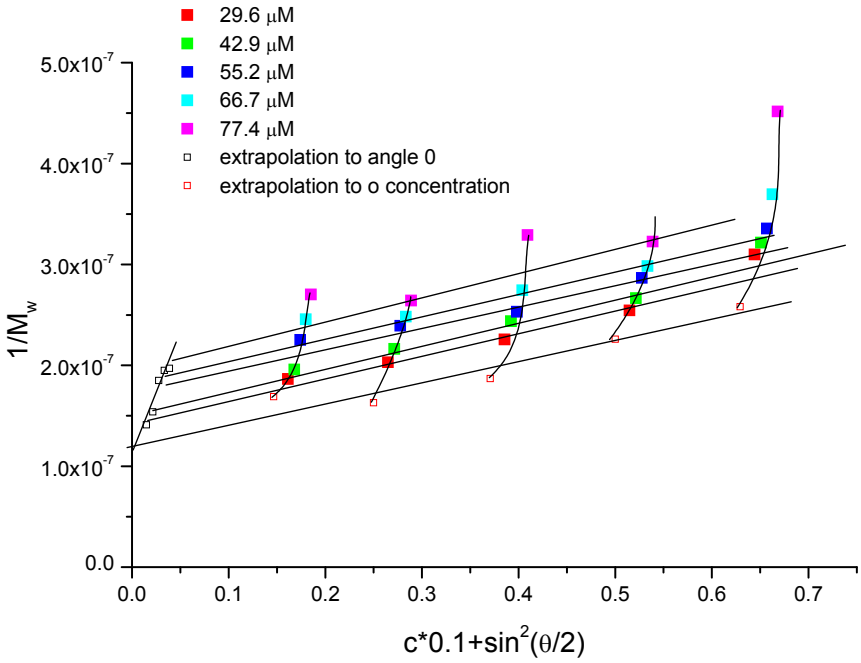


Fig.S3†. Zimm Plot of InEC14 in aqueous solution.

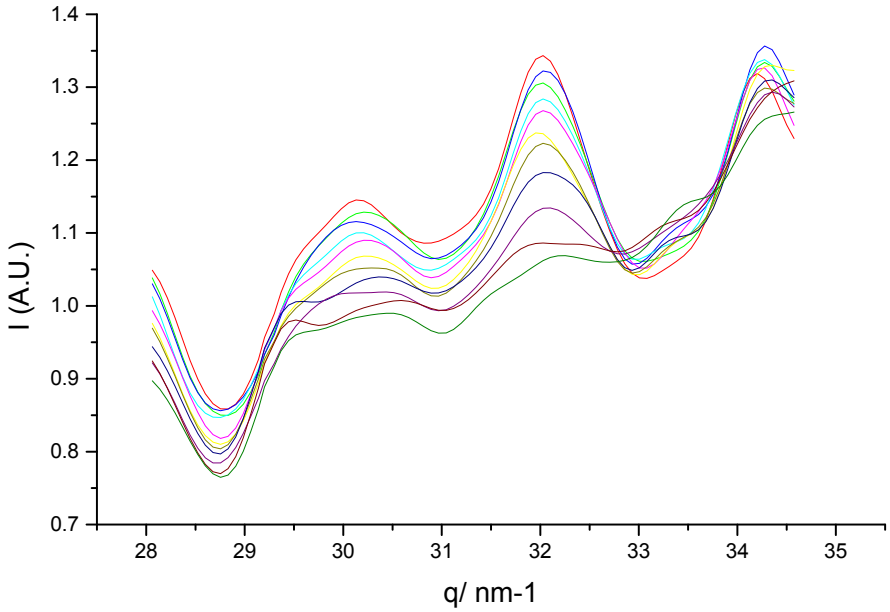


Fig.S4†. Intensity as a function of dispersion vector modulus q of inulin precipitate as a function of temperature from 25ºC to 85ºC. The curves have been smoothed and normalized to the background supernatant curve.

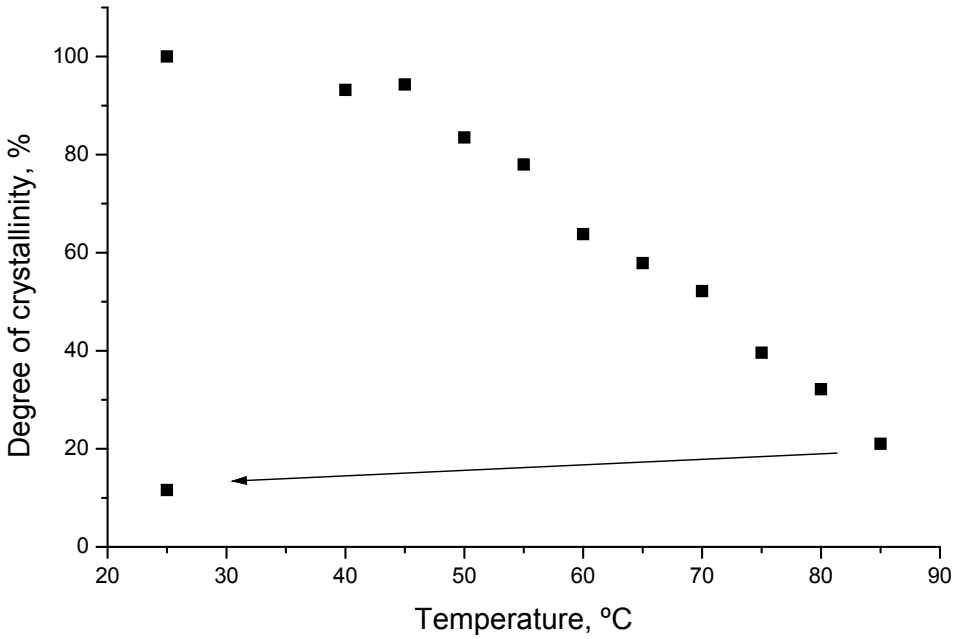


Fig.S5†. Percentage degree of crystallinity of inulin precipitate as a function of temperature, the degree at 25 ºC has been set arbitrarily to 100%. The arrow shows the cooling behaviour after two hour cooling.

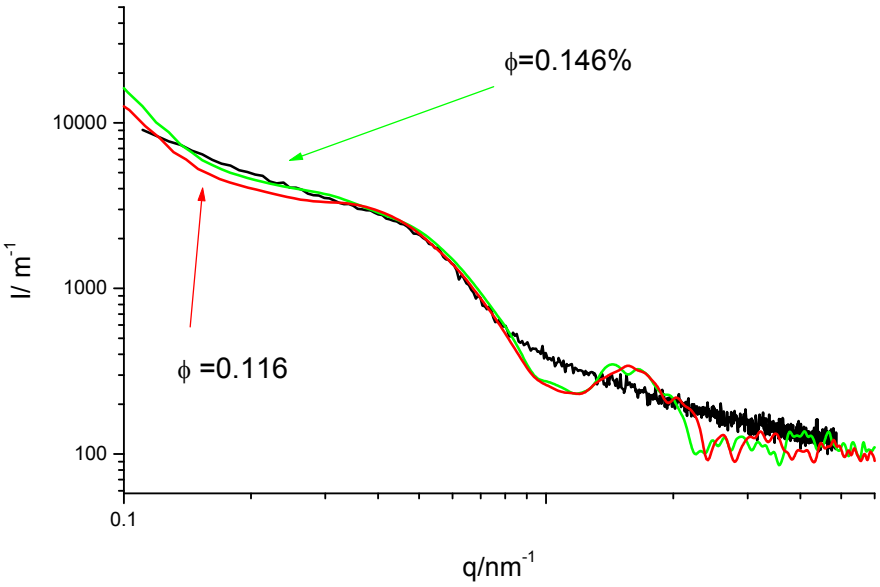


Fig.S5†. Simulated scattering curves at two compactions for aggregates corresponding to the precipitated inulin. The lower concentration corresponds to random compaction produced by a hard sphere potential with the larger ellipsoid radius as the hard sphere radius while the higher concentration corresponds to the treatment of a “hard ellipsoid” potential.

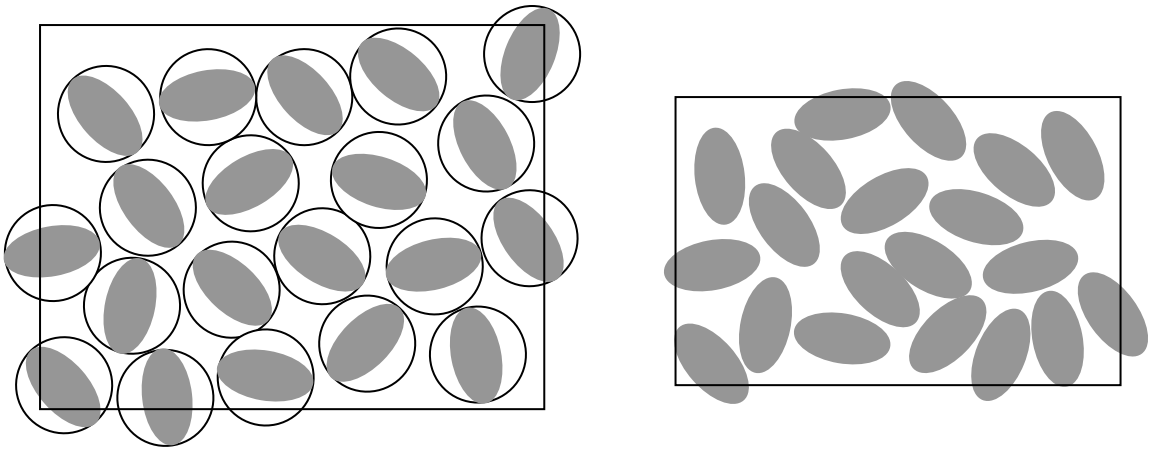


Fig.S6†. Sketch of the formation of flocks constituted by aggregates (ellipsoids) using a hard sphere potential (left) or a hard ellipsoid potential (right).