Pluronic and β-cyclodextrin in water: from swollen micelles to crystalline platelets

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Direct Light Scattering Measurements

The lowest $q$-range, which were inaccessible with the SANS facilities, were investigated by light scattering. The solutions of F-68 and β-CD were mixed at 70°C in a 1 cm large glass container. The mixture was placed immediately in a thermoregulated toluene bath at 20°C. Direct laser light with a wavelength $\lambda = 544$ nm was used and the scattered intensity was collected at a scattering angle $\theta$ ranging between 20° and 90°. Fig. S1 shows the obtained curves. Unfortunately multiple scattering occurred quickly because of the long light path in the measured sample, preventing us from observing a plateau of the scattering intensity at the lowest $q$-values.

**Fig. S1** Direct light scattering measurements on the evolving mixture of F-68 and β-CD at 20°C, after 1.3 min (○), 6.5 min (●), 12 min (□), 17.5 min (■), 23 min (◇) and 27.5 min (♦) ageing.
Atomic Force Microscopy

Fig. S2 shows the AFM images of the raw components, compared to the mixture. A difference in morphology is clearly visible, evidencing the rapid interaction occurring between the two species. Fig. S3 shows topographic section analyses on deposited films, evidencing the value of the thickness of the platelets.

**Fig. S2** Tapping mode AFM phase imaging on deposited films from a solution at 70°C of pure β-CD (left) and pure F-68 (middle), and from the mixture of the two solutions at 70°C (right). The scale bar is 1 µm long.

**Fig. S3** Tapping mode AFM topography imaging on deposited films from the mixture of β-CD and F-68 (left) and corresponding section analyses along the white lines (right). The top row shows the mixture after 2 weeks ageing at 20°C, topographic image is 5 µm wide and the vertical distance between the markers is 15.58 nm. The bottom row shows the mixture after 700 minutes ageing at 40°C, topographic image is 2 µm wide and the vertical distance between the markers is 16.34 nm.