Electronic Supplementary Material (ESI) for Soft Matter

Unravelling Adsorption, Ordering and Alignment of Amyloid Fibrils at Interfaces by Probe Particle Tracking

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Nematic order parameter:

The two-dimensional order parameter was calculated using the following procedure: the 1-D traces were approximated to straight lines and the coordinates of each line were acquired on the image using a devoted image analysis program. Fast Fourier transform (FFT) was applied on each image and the corresponding 2D FFT image was transformed into a 1D plot by integration to extract the Azimuthal distribution plot. The director of each image (whenever an average non-zero orientation existed) was extracted from the angle at which the minimum intensity of the FFT was measured. $\cos(\Theta)$ was calculated for each individual trace, where Θ is the angle between a particular trace and the director orientation. The 2D order parameter was finally

obtained by an algorithm programmed in Mathematica using the formula $S_{2D} = \langle 2\cos^2 \Theta - 1 \rangle$, where the brackets indicate an average over all observations. Isotropic traces do not contribute to the final value of S_{2D}. Additional examples in which coexistence of isotropic and nematic traces is found are given below.

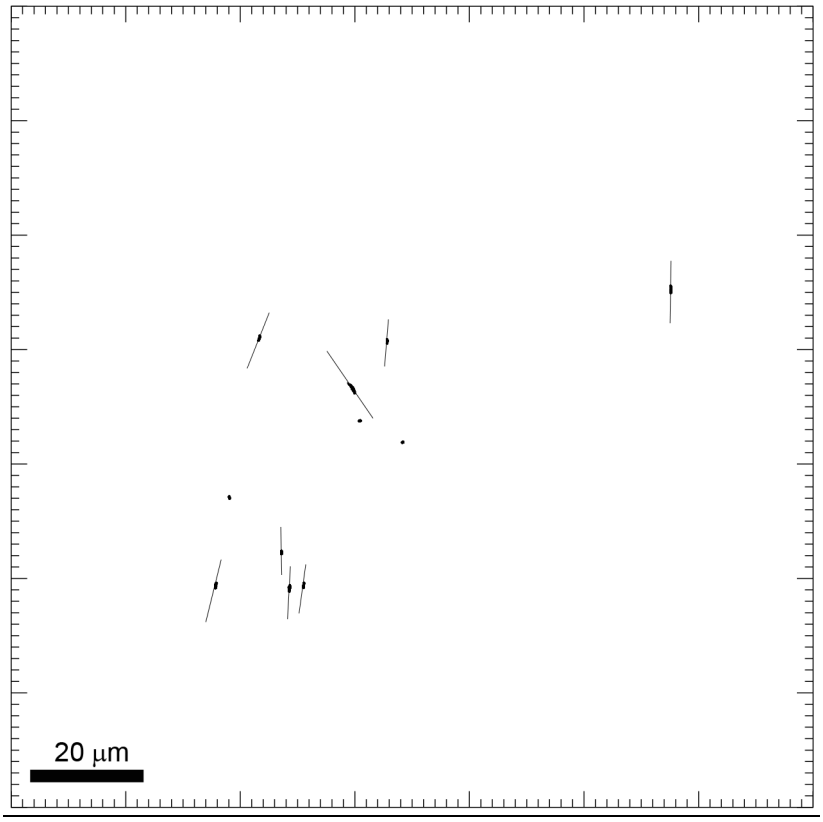

Figure SI-1. Traces of probe particles at the interface for long fibrils with bulk concentration of 0.1% and t_w = 19 minutes. Calculated S_{2D} = 0.6.

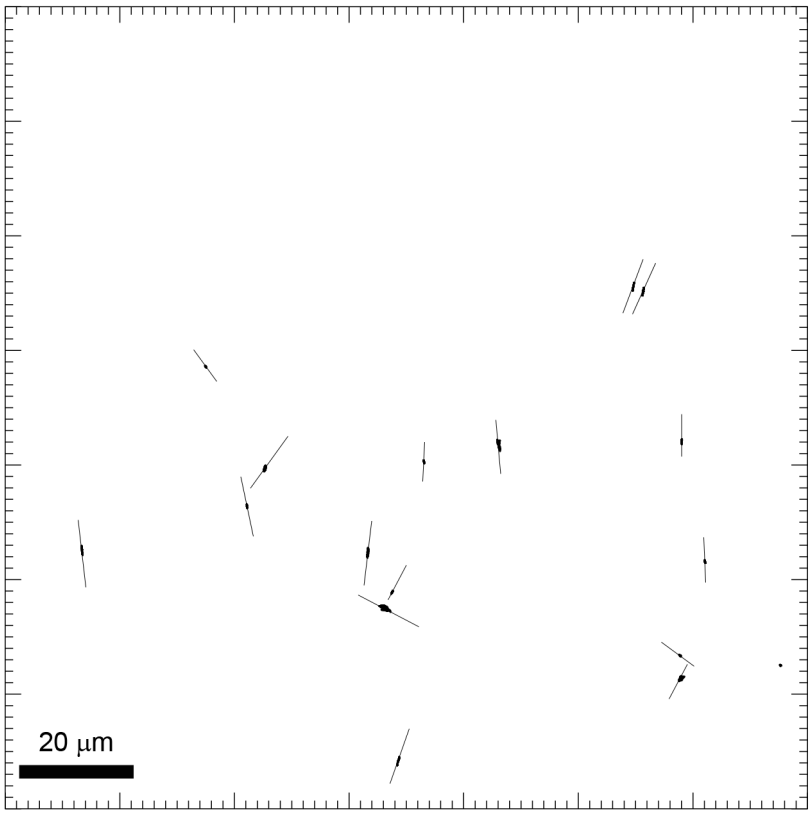

Figure SI-2. Traces of probe particles at the interface for long fibrils with bulk concentration of 0.1% and t_w = 23 minutes. Calculated S_{2D} = 0.57.

Supporting Movie 1

This movie corresponds to the traces reported in Fig. 2a in the main body of the paper (c=0.1% and t_w = 95 minutes). The heterogeneity in particle motion within the interface is evident as well as the presence of strong anisotropy in the motion of some tracers. Particles moving below the interface are also visible. The movie is shown in the local co-moving frame of reference (a small drift is subtracted from the images) and frames were grabbed every 0.5 seconds. (.avi; 29MB).