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Stretching and ordering of amyloid fibrils at liquid interfaces EMANUELA DEL GADO, Georgetown University, KONRAD SCHWENKE, SOPHIA JORDENS, IVAN USOV, RAFFAELE MEZZENGA, ETH Zurich, GEORGETOWN UNIVERSITY TEAM, ETH ZURICH TEAM — We investigate the formation of nematic domains, which might be precursor of plaque formation, in the adsorption of amyloid fibrils at liquid interfaces. Combining experiments and computer simulations we analyse spatial correlations in the nematic order and in apparent persistence length. Non-equilibrium numerical simulations provide new insight into the coupling between those quantities. The emerging scenario is that the out-of-equilibrium adsorption favors the formation of spatial heterogeneities due to the presence of local nematic order that tend to persist upon increasing the surface coverage. Such structural heterogeneities are directly coupled to the apparent straightening of the brils and might affect the density and the mechanical properties of the final self-assembled material.

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