Electronic Supplementary Material (ESI) for Physical Chemistry Chemical Physics.

Supplementary Information

Hierarchical Spatial Heterogeneity in Liquid Crystals Composed of Graphene Oxides

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Ultra-small-angle X-ray scattering measurements

Fig. S1 shows two-dimensional scattering patterns for (a) GO-based liquid crystal and (b) pure water. While the GO-liquid crystal gave an anisotropic pattern, the pure water didn't. Thus, it seems most likely that the anisotropic scattering originates from GO itself and/or structured GOs. Fig. S2 show the one-dimensional profile of the GO-based liquid crystal obtained by averaging the pattern within two red lines in Fi. S1(a). The background compensation was made using corresponding data in panel (b) of Fi. S1. The intensity was inversely proportional to scattering vector (q). Any peaks corresponding to layered structure of GOs were not observed. This might be due to the fluctuation in the distance between GO sheets.

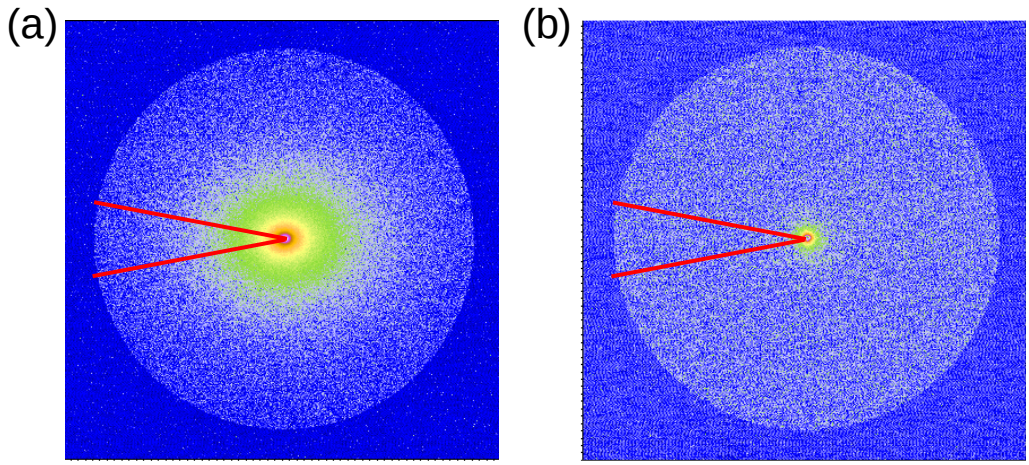

Fig. S1 Two-dimensional scattering patterns for (a) the GO-based liquid crystal and (b) pure water, which were placed in a quartz capillary.

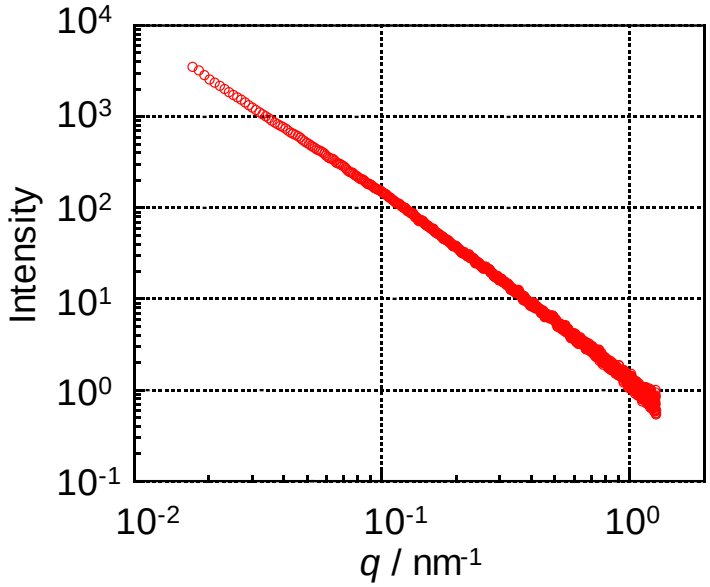

Fig. S2 One-dimensional scattering profile for the GO-based liquid crystal, which were placed in a quartz capillary.

Reference

1. O. Glatter, in *Small-Angle X-ray Scattering*, ed. O. Glatter and O. Kratky, Academic Press, London (1982).