



Presents

Liquid crystallinity in lyotropic suspensions of carbon nanotubes

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ABSTRACT: Carbon nanotubes are exceptionally rigid and, in the case of single walled tubes, have diameters not very much greater than that of polymer molecules. The development of various strategies to stabilise suspensions in low molecular weight liquids has enabled the formation of lyotropic phases. These phases show most of the structural features typical of liquid crystalline polymers, yet have two further intriguing features, namely that they can be dried out without destroying the liquid crystalline topology, and, in the dried state, are amenable to high resolution scanning electron microscopy where the individual tubes may be resolved. In particular it is possible to image the internal structure of disclinations. Extensions to the work to the influence of fields with a view to exploiting the processibility of the liquid crystalline state will also feature in the presentation.

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