

Active liquid crystals: order, fluctuations, flow, defects, and chirality

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Active Matter refers to materials whose constituents continually convert free energy into systematic movement. While the motivation for defining active matter as a distinct class of materials was to bring living things into the condensed-matter fold, much success has come from studying minimal active systems with essential biological ingredients or even non-living but artificially activated materials. Liquid crystals have been central to the active matter enterprise from its inception, and have given us some of its most dramatic phenomena. My talk will introduce the subject, briefly summarise early results, and then discuss our current work on active mesophases including confined, translationally ordered and chiral systems.

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