

Assembling Ellipsoidal Particles at Fluid Interfaces using Switchable Dipolar Capillary Interactions

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The fabrication of novel soft materials is an important scientific and technological challenge. We investigate the response of magnetic ellipsoidal particles adsorbed at fluid-fluid interfaces to external magnetic fields. By exploiting previously discovered first-order orientation phase transitions we show how to switch on and off dipolar capillary interactions between particles, leading to the formation of distinctive self-assembled structures and allowing dynamic control of the bottom-up fabrication of reconfigurable novel-structured materials