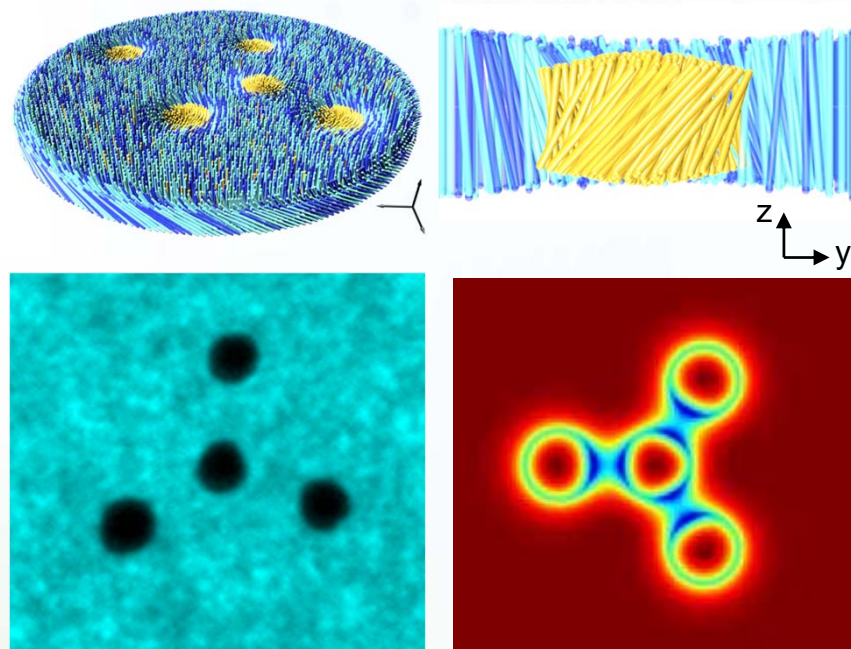


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Particles suspended in liquid membranes interact based on their deformation of the background membrane rather than their inherent properties. This leads to many complex interactions which have not been fully explored.

Recent experiments with self-assembled rafts in colloidal membranes have found that rafts twist the membrane around them and can switch between a right-handed or left-handed twist configuration. Rafts in like states have repulsive interactions, while unlike states lead to metastably bound pairs.

Theory has shown that both states are metastable and confirmed that these interactions are driven by minimizing membrane deformation.



Top: Schematics of membrane rafts from above and from the side. **Bottom Left:** Fluorescence image of four rafts assembled in a tetramer formation. **Bottom Right:** Heatmap showing a numerical calculation for the degree of tilt for a similar configuration.