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**Directed assembly in soft matter by energy stored in inclusions**

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We have been exploiting fields that arise spontaneously when microparticles are placed in contact with deformable matter to direct assembly. In one context, we use capillary interactions that occur between anisotropic microparticles at fluid interfaces. The fluid interface deforms owing to the particle presence, creating an area field that bears the signature of the particle shape and wetting. We use curvature fields to direct particles to migrate, orient and assemble. In another context, we exploit elastic energies and defect fields that arise in liquid crystals. When a nematic liquid crystal is confined using surfaces with complex topographies and well-defined anchoring energies, the director field and associated defect fields can be molded to store elastic energy which can be used to steer particles into rich assemblies. In a final context, we study the interaction of colloidal particles on giant vesicles under tension, in which particles interact via bending energies to interact with each other.