

Abstract Submitted
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Colloids with magnetic patches: synthesis and self-assembly STEFANO SACANNA, NYU, LAURA ROSSI, Utrecht University, WILLIAM IRVINE, DAVID PINE, NYU — We developed a new class of colloidal particles that programmably and reversibly self-assemble into well-defined clusters by virtue of “magnetic patches” carrying a permanent magnetic dipole moment. The resulting clusters form spontaneously in a zero external field, and their geometry is entirely determined by the interplay between magnetic, steric, and electrostatic interactions. Imposing an external magnetic field enables the clusters to unbind or change their geometry allowing, in principle, to create materials with tunable structural arrangements.

Stefano Sacanna
NYU

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