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Preparation and assembly of magnetic patchy colloids.[1] LAURA ROSSI, Univ of Amsterdam, PETER SCHALL, University of Amsterdam — The preparation of novel materials with specific functional properties calls for the design of colloidal building blocks that are able to rationally (self-)assemble into precise and adaptable structures and at the same time have the potential to be mass produced. In this talk, I will show that introducing magnetic patches into otherwise symmetric particles allows us to promote asymmetric directional and selective interactions between colloidal polymer spheres. Such colloidal building blocks can be engineered either by embedding dipolar units into polymerizable oil droplets or by using a novel combination of wet chemistry and photolithography. These magnetic patchy colloids make the ideal model system for the rational design of large 2D bonded structures with predefined and tunable architecture.

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