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**Shaping Colloids for Self-Assembly** STEFANO SACANNA, NYU, GIRA YI, Sungkyunkwan University, DAVID PINE, NYU — The creation of a new material often starts from the design of its constituent building blocks at a smaller scale. From macromolecules to colloidal architectures, to granular systems, the interactions between basic units of matter can dictate the macroscopic behavior of the resulting engineered material and even regulate its genesis. Information can be imparted to the building units by altering their physical and chemical properties. In particular, the shape of building blocks plays a fundamental role at the colloidal scale, as it can govern the self-organization of particles into hierarchical structures and ultimately into the desired material. Herein we report a simple and general approach to generate an entire zoo of new anisotropic colloids. Our method is based on a controlled deformation of multiphase colloidal particles that can be selectively liquified, polymerized, dissolved and functionalized in bulk. We further demonstrate control over the particle functionalization and coating by realizing patchy and Janus colloids.

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