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A quick and simple route to form soft Janus colloids[1] CHRIS SOSA, RODNEY PRIESTLEY, ROBERT PRUD'HOMME, Princeton University — Janus colloids, i.e., particles with two chemically distinct compartments or "faces," are of significant scientific interest as they could serve as the enabling material for self-organizing superstructures and functional nanodevices. The internally segregated structures present in Janus particles are not only beneficial for self-assembly applications, but are also attractive from a more fundamental scientific perspective for the insight they can provide on hybrid material interfaces. Here, we present a novel, one-step nano-precipitation process for the formation of soft Janus colloids composed of two compositionally distinct and surface-active polymer domains. In particular, this approach allows for the fabrication of Janus particles from both homopolymers and block co-polymers, generates phase-separated Janus structures on extremely fast timescales, and provides excellent scalability.

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