

Abstract Submitted  
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**Chains, Rings, and Dendrites of Active Colloidal Polymers** JIE ZHANG, STEVE GRANICK, University of Illinois at Urbana-Champaign — In order to better understand active polymeric matter, colloidal polymers are imaged, in situ in real time, obtaining not only temporal and spatial information about each “monomer” in these living polymers but also about the time-dependent and orientation-dependent correlations between them. Our reversible colloidal polymer system is assembled from self-propelled monomeric Janus particles with dynamic “plug and play” self-assembly and programmed direction-specific interactions between the particles. Enabling this, AC voltage induces dipoles on the monomeric Janus particles that link them into chains while also generating active phoretic motility. Unique features of this system relative to conventional Brownian polymers are emphasized.

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