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Crystallization of Polymers at liquid/liquid interface templated by single-walled carbon nanotubes WENDA WANG, CHRISTOPHER LI, Drexel University, SOFT MATTER RESEARCH GROUP TEAM — Nanosized single-walled carbon nanotube rings were fabricated by using a Pickering emulsion-based method. By tuning a water/oil/SWNT miniemulsion system, SWNT rings with a diameter of ∼200 nm can be readily achieved. The formation mechanism is attributed to the bending force induced by the curved liquid/liquid interface. Crystallization of polyethylene homo- and copolymers using this unique SWNT rings as the nucleation agent was conducted at the curved liquid/liquid interface. Crystal structure, hybrid morphology and crystallization kinetics were systematically studied. The structure of controlled alternating patterns on SWNT rings has great potential in various applications in large-scale integrated circuits and single-electron devices.

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