

Abstract Submitted
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Self-assembly of Janus Ellipsoids¹ YA LIU, University of Pittsburgh, WEI LI, Lehigh University, TONI PEREZ, Newcastle University, GENEVIEVE BRETT, Skidmore University, JAMES GUNTON, Lehigh University — The self-assembly of particles into a desired mesoscopic structure and function are considered as a bottom-up strategy to obtain new bulk materials that have potential applications in broad fields including drug delivery, photonic crystals, biomaterials and electronics. We propose a primitive model of Janus ellipsoids that represent particles with an ellipsoidal core and two semi-surfaces coded with dissimilar properties, for example, hydrophobicity and hydrophilicity, respectively. We investigate the effects of the aspect ratio on the self-assembly morphology and dynamical aggregation processes using Monte Carlo simulations. We find that the size and structure of the aggregates can be controlled by the aspect ratio, which should be an interesting result from a design viewpoint.

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Ya Liu
University of Pittsburgh

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