

Abstract Submitted
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Energy Landscapes of Small, Fixed Numbers of DNA-coated Colloids¹ JESSE COLLINS, Harvard School of Engineering and Applied Science (SEAS), VINOTHAN MANOHARAN, Harvard Physics and SEAS — We experimentally investigate clustering of small numbers of colloidal spheres with short-range attraction via surface-grafted DNA-DNA molecular recognition. We coat 1 micron diameter spheres with 20nm long DNA strands; particles with different surface-bound DNA sequences represent different particle “types.” Pairwise interactions between some types are attractive but interactions between other types are purely repulsive. In a typical experiment, 6 total particles of 3 different types explore a volume less than 100 picoliters and assemble into equilibrium clusters. We optically characterize the structures and compare ensemble averages with statistical mechanical predictions.

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