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Evaporation-Driven Assembly of Microspheres with Polymer in Emulsion Droplets¹ KENG-HUI LIN, Institute of Physics, Academia Sinica, Taipei, Taiwan, LIANG-JIE LAI, Dept. of Physics, National Central University, Chung-li, Taiwan, CHIH-CHUNG CHANG, HUI CHEN, Dept. of Chemical and Materials Engineering, National Central University, Chung-li, Taiwan — We study the packing of colloidal microspheres mixed with polymer in oil-in-water emulsion droplets through evaporation. The addition of polymer produce non-unique configurations of final clusters when the number of particles N inside the droplet is larger than 4. The cluster configurations are classified into three categories based on the symmetry. Stabilized colloidal clusters of spherical packings are observed. Observation on packing process shed light to the mechanisms which cause different and non-unique structures. The osmotic pressure and interparticle interaction due to polymer play important roles in packing.

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