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Adsorption of end-adsorbing homopolymers A and B from solution onto a solid interface FOLUSHO OYEROKUN, RICHARD VAIA, AFRL — Determination of the composition and spatial organization in multicomponent monolayers formed by the adsorption of polymeric ligands from solution is important in variety of applications. Prior studies on adsorption of end-functionalized homopolymers show that the final surface coverage depends on the molecular weight, the solution concentration, adsorption energy of the terminal group and degree of polydispersity of the polymer chains. This study addresses the thermodynamics of adsorption of end-adsorbing homopolymers A and B onto a flat surface from solution. Specifically, we examine the role of solvent selectivity, incompatibility between the A and B segments, and the degree of bidispersity on the structure of the adsorbed layers. The relevance of our findings to synthesis of multivalent nanoparticles (nanoparticles with two or more types of ligands attached to their surfaces) by immersion of the nanoparticles into a solution containing the various ligands will also be presented.

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