

Abstract Submitted  
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**Kinetic Selectivity and Competitive Adsorption on Carbon Nanotube Bundles**<sup>1</sup> JARED BURDE, M. MERCEDES CALBI, Dept. of Physics, Southern Illinois University Carbondale — We investigate the kinetics of adsorption of a binary mixture on one-dimensional chains by means of Kinetic Monte Carlo simulations. A competition based on both the binding energies and the adsorption rates is demonstrated. Since the species with smaller binding adsorb faster, it is shown that before reaching equilibrium, that species is the favored one contrary to what eventually happens in equilibrium. Therefore, the weaker binding species can initially reach coverages larger than its equilibrium value, providing evidence of a kinetic selective process that can be exploited for gas separation purposes.

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