

Entropy-Driven Phase Transition in DNA-Linked Colloids

the Physical Chemistry Student Seminar Series

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When? Tuesday, April 7, 2009, 5:30 PM

Where? Miller Seminar Room, 328 Havemeyer

Abstract

We report grand-canonical Monte Carlo simulations of an equimolar mixture of hard colloids coated with long polymers that have a complementary functionalization. Such systems have the potential to function as self-healing materials. Under conditions where the complementary polymer ends are strongly associated, we observe a first-order vapor-liquid transition from a dilute gas of colloidal dimers to a dense, liquid-like phase. This transition is driven exclusively by the increase in entropy associated with bond disorder.

Why Else? Refreshments will be served.