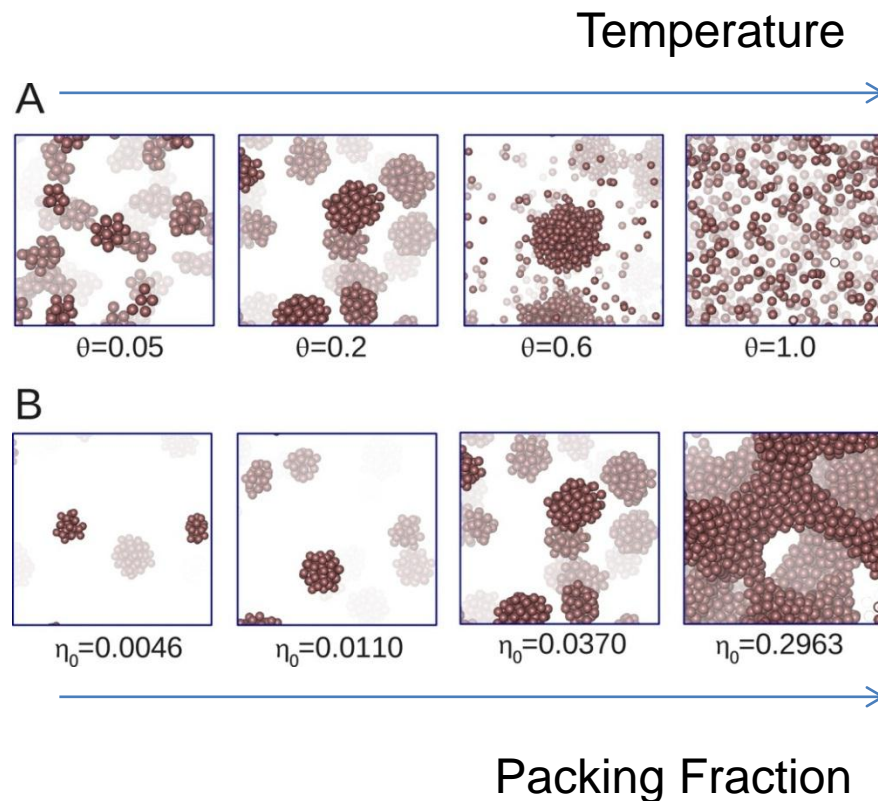


Dynamic Self Assembly of Photo-Switchable nanoparticles

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Nanoparticles functionalized with photo-switchable ligands can be assembled into reversible aggregates of various sizes and symmetries “dynamically” by alternating exposures of UV and visible light (Klajn et al; PNAS, 2007, 104 (25), 10305-10309). In this study, we develop a scaling theory and a novel kinetic Monte Carlo simulation scheme to study this non-equilibrium process. Our results indicate a broad range of possible structures (e.g. “flexible”, “frozen”, “fluctuating”, and “network-like”) that can be achieved by tuning the degree of association (effective temperature) or the packing fraction.



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