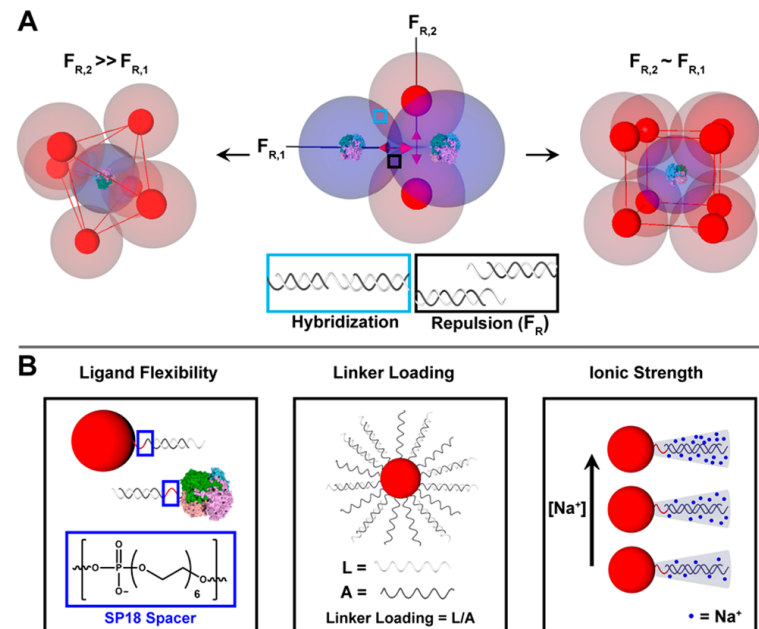


Altering DNA-Programmable Colloidal Crystallization Paths by Modulating Particle Repulsion

M. Wang, J. Brodin, J. Millan, S. Seo, M. Girard, M. Olvera de la Cruz, B. Lee, and C. Mirkin, *Nanoletters* 17, 5126-5132 (2017)

This joint experimental-numerical work highlights the importance of modulated repulsive interactions between neighboring DNA shells adsorbed onto protein and gold nanoparticles surfaces, that lead to diverse co-crystallization from DNA-Proteins and DNA-Nanoparticles. These results lay the groundwork for future work to use these repulsive forces to achieve previously inaccessible architectural diversity in organic-inorganic hybrid materials.



(A) Increasing the size of DNA (blue shell) in DNA-Protein conjugates leads to phase transitions. (B) Ligand flexibility, linker loading on nanoparticle surface and ionic strength promotes repulsion between neighboring DNA shells that contribute to the stabilization of Th_3P_4 or CsCl superlattices.