

Engineering DNA-based model soft-matter systems

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DNA is widely recognized as a promising engineering material in the field of nanotechnology and material science. Here, I will show that using DNA as building block for constructing molecules with complex architecture in the field of soft matter can offer a great opportunity to obtain well-defined monodisperse systems with a wide variety of particle shape, stiffness, charge, etc. In addition, the size of the particles can be tuned such, that direct visualization of these complex structures on the single particle is accessible. A small library of well-defined DNA-based macromolecular assemblies will be presented, focused on two recently synthesized systems: (a) star-branched polyelectrolyte and (b) patchy rod-like particle.