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DNA Linker Mediated Crystallization of Nanocolloids[1] HUIMING XIONG, Brookhaven National Laboratory, DANIEL VAN DER LELIE, OLEG GANG — Biofunctionalized nanocolloids offer a promising platform for creation of novel materials using bio-addressable interactions. Crystalline phases are of especial interest for the development of novel functional structures. We demonstrate that crystallization of nanocolloids can be achieved via hybridization of dispersed non-complementary single stranded DNA capped colloids with flexible single-stranded linker DNA. The crystalline structure belongs to body central cubic lattice and exhibits large thermal expansion. The evolution of the structure has been studied in details using in-situ small angle x-ray scattering. The formation of crystalline structures and reduced metastability are observed for systems with longer DNA linkers.

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