

Abstract Submitted
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DNA Linker Mediated Assembly of Gold Nanoparticles Superlattice¹ HUIMING XIONG, CFN, BNL & Shanghai Jiao Tong University, MATTEW Y. SFEIR, CFN, BNL, DANIEL VAN DER LELIE, Biology Department, BNL, OLEG GANG, CFN, BNL — A BCC (body-centered-cubic) crystalline phase forms when flexible ssDNA linkers are added to the mixture of two types of dispersed, ssDNAs capped gold nanocolloids which are mutually non-complementary but complementary to the respective ends of the linker DNA. The state diagram of DNA linker mediated nanoparticle assemblies has been experimentally investigated and constructed by using in-situ small angle x-ray scattering. The optically active three-dimensional superlattice containing plasmonic particles and DNA-encoded chromophors were further fabricated using this approach. We investigated structural tunability and corresponding optical response of the multicomponent superlattices.

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