

### **Guided self-assembly of DNA-coated colloids**

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It would seem that DNA-coated colloids could give us the capability of putting together materials organized at the mesoscopic scale with almost arbitrary pre-determined architectures. The goal is to engineer and build three-dimensional structures consisting of different materials—metals, semiconductors, insulators, organics, and inorganics—where the designer has complete control over precisely where different materials are placed and in proximity to what. This talk will review recent progress towards these goals and outline some of the outstanding challenges, as best we understand them at the present time.