

## DNA-Guided 3-D Assembly of Colloidal Gold Nanoparticles

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First report on the formation of *three-dimensional* crystalline assemblies of gold nanoparticles mediated by interactions between complementary DNA molecules attached to the nanoparticles' surface. The nanoparticle crystals form reversibly during heating and cooling cycles. The body-centred-cubic lattice structure is temperature-tunable and structurally open, with particles occupying only 4% of the unit cell volume. These developments will make it possible to create ordered and tunable 3D nanoscale architectures relevant for photonic and magnetic applications, biomedical sensing, and information or energy storage.



## References/Publications

D. Nykpanchuk, M. M. Maye, D. van der Lelie, O. Gang, *Nature*, **451**, 549-552 (2008).