Assembly of gold nanoparticles

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Understanding the electron relaxation dynamics in nanoassemblies is crucial in optimizing the optical device architecture. Study of optical properties using transient absorption spectroscopy gives hot electron transfer rates of assembled structures which in turn are helpful for optimizing the systems for light harvesting techniques.

Monodisperse Gold nanoparticles are synthesized initially by reducing the gold precursor. Further gold particles are assembled in solution using Nonanedithiol as a linker molecule. Separation of the assemblies is done using gel electrophoresis. Further, separated particles are coated with silica to increase the stability of the particles towards high energy laser pulses. Optical properties of these gold assemblies are studied to understand the charge carrier dynamics.

References

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