

Materials List for:

Synthesis, Characterization, and Functionalization of Hybrid Au/CdS and Au/ZnS Core/Shell Nanoparticles

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URL: <https://www.jove.com/video/53383>

DOI: [doi:10.3791/53383](https://doi.org/10.3791/53383)

Materials

Name	Company	Catalog Number	Comments
MilliQ Water	Millipore	Millipore water purification system	water with 18 MΩ resistivity was utilized in all experiments
Gold(II) chloride trihydrate	Sigma Aldrich	520918	used as gold precursor for nanoparticle synthesis
Cetyl trimethyl ammonium chloride (CTAC)	TCI America	H0082	used as surfactant for gold nanoparticles
Borane tert butyl amine	Sigma Aldrich	180211	used as reducing agent for gold nanoparticles
Silver nitrate	Sigma Aldrich	204390	used as silver source for shell application
Ascorbic acid	Sigma Aldrich	A0278	used as reducing agent for silver shell application
Sulfur powder	Acros	199930500	used as sulfur source for silver sulfide shell conversion
Oleylamine	Sigma Aldrich	O7805	used as surfactant for silver sulfide shell conversion
Oleylamine	Sigma Aldrich	364525	used as surfactant for silver sulfide shell conversion
cadmium nitrate tetrahydrate	Sigma Aldrich	642405	used as cadmium source for cation exchange
zinc nitrate hexahydrate	Fisher Scientific	Z45	used as zinc source for cation exchange
11-Mercaptoundecanoic acid	Sigma Aldrich	450561	used as water soluble ligand during ligand exchange
3,4-diaminobenzoic acid	Sigma Aldrich	D12600	used as water soluble ligand during ligand exchange
UV-Vis absorption spectrophotometer	Cary	50 Bio	used to monitor absorption spectrum of colloidal solutions
JEOL TEM 2100	JEOL	2100	used to analyze size of synthesized nanoparticles. TEM grids were purchased from tedpella
FTIR spectrophotometer	Perkin Elmer	Spec 100	used to monitor chemical composition of nanoparticle surface after ligand exchange.