

### Preparation of pickering emulsion using silica-coated CdSe/CdS quantum nanorods

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Quantum nanorods (QNRs) are well studied due to their unique optical properties and morphology. QNRs have broad absorption and narrow emission spectra by the quantum confinement effect and emit polarized light along the long axis. Generally, QNRs are hydrophobic at the surface because of the ligands used in the synthesis. Here we incorporated silica, which is an easily synthesized particle with a hydrophilic surface, to synthesize silica-coated CdSe/CdS quantum nanorods (SQRs). SQRs have hydrophobic quantum nanorod tail and hydrophilic silica head similar to a molecular surfactant. This particle, when added to a system with both oil and water can act as a stabilizing particle and form a stable emulsion phase (pickering emulsion). We verified their amphiphilic behavior and studied the stabilizing effect of SQRs in pickering emulsion by changing solvent composition. We believe our research offers possibilities of SQRs to be used as a template to synthesize particles with unique morphology and luminescent properties.