عنوان مقاله:

Aqueous synthesis of TGA-capped CdTe nanocrystallites and investigation of their size- and pH-dependent optical properties

محل انتشار:

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خلاصه مقاله:

TGA-decorated CdTe quantum dots (TGA-CdTe QDs) of different sizes were successfully synthesized inaqueous medium. Size of synthesized QDs was tuned by manipulating the reaction time. The synthesized nanoparticleswere characterized by fluorescence and UV/Vis spectra and transmission electron microscopy (TEM). Fluorescenceproperties and physical exchanges of TGA-capped CdTe quantum dots were investigated by fluorescence spectroscopy,resonance light scattering (RLS) and infrared spectroscopy at different pH levels. The results showed that thesenanoparticles possess pH-dependent fluorescence which can be applied as a pH sensor in chemical and biological systemsand can also be used for non-invasive monitoring of species that can alter pH of a chemical environment.

کلمات کلیدی:

Quantum dots; TGA-capped CdTe; pH-dependent fluorescence