

Abstract Submitted
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Sol-gel synthesis and characterization of terbium doped tin-oxide¹

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Rare earth doped tin oxide nanocrystals emit visible light when excited in the ultra-violet. Using a sol-gel process, we embedded Tb^{3+} doped SnO_2 nanocrystals in silica glass and characterized the samples using x-ray diffraction, photoexcitation and emission spectroscopy, and transmission electron microscopy. We synthesized four sets of samples, SnO_2 -99 SiO_2 , 3 SnO_2 -97 SiO_2 , 5 SnO_2 -95 SiO_2 , 7 SnO_2 -93 SiO_2 with constant weight ratios of Tb^{3+} to measure the effects of varying the molar concentrations of Tin-Oxide on the photoluminescence properties of the nanocrystals.

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