

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, $\text{SnO}_2\text{-99SiO}_2$, $3\text{SnO}_2\text{-97SiO}_2$, $5\text{SnO}_2\text{-95SiO}_2$, $7\text{SnO}_2\text{-93SiO}_2$
with constant weight ratios of Tb^{3+} to measure the effects of varying the molar con-
centrations of Tin-Oxide on the photoluminescence properties of the nanocrystals.

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