

Abstract Submitted
for the 4CF06 Meeting of
The American Physical Society

Photodarkening of Te-modified TiO₂ Nanocrystals STEVEN PHILLIPS, Brigham Young University — The photocatalytic properties of TiO₂ nanocrystals can be enhanced by doping, which can result in increased absorption in the visible range. After annealing Te-modified TiO₂ nanocrystals, the powder becomes photo-sensitive, changing from an off-white color to a dark-red color under UV and visible illumination. This color change is stable, but can be reversed by annealing the powder again. We analyze the nanocrystals with x-ray diffraction, x-ray photoelectron spectroscopy, electron spin resonance, and transmission electron microscopy. Currently, the main question we are investigating is whether the Te is in the interior of the nanocrystals or on the surface.

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Date submitted: 08 Sep 2006

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