URN etd-0407109-183717-1373
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Statistics This thesis had been viewed 51 times. Download 0 times.
Department
Year 2007
Semester 1
Degree Master
Type of Document Master's Thesis
Language zh-TW.Big5 Chinese
Title Synthesis and Shape Control of Various Tin Oxide Nanocrystals by Thermal Decomposition Process
Date of Defense 0000-00-00
Page Count 64
Keyword
SnO
Thermal Decomposition Process Synthesis and Shape Control of Various Tin Oxide Nanocrystals by Thermal Decomposition

Process S

Abstract
Various Tin Oxide Nanocrytals were prepared via the thermal decomposition of tin (II) oleate in tri-n-octylamine and 1-

Octadecanol at high temperature under different atmospheres. The coordinating solvent tri-n-octylamine and 1-Octadecanol also

acts as a phase transformation controller reagent.The results revealed that the atmosphere is a important parameter for the fast

formation of SnO nanoplanks. On the other hand, the phase transformation of the obtained better optical properties SnO2

nanoparticles can be well tuned by variation of the solvent of 1-Octadecanol used. The as-prepared nanoparticles are soluble in

a nonpolar solvents , they also form transparent suspensions in an aqueous solution. The as-synthesized SnO2 nanoparticles are

of the pure cassiterite structure. The band gaps of SnO2 nanoparticles are 5 eV, which are relatively large values because of the

quantum size effect.The chemical composition, structure and morphology of the obtained nanocrystals were characterized by

powder x-ray diffraction, scanning electron microscopy, High-resolution Field- transmission electron microscopy and

Ultraviolet/Visible Spectrophotometer.
Advisory Committee Sheng-Chang Wang - advisor

Files No Any Full Text File.
Date of Submission 2008-08-14