

PC-8

PHOTOLUMINESCENCE STUDY OF Tin  
HYDROXIDE TETRA-TOLUENEPORPHYRIN  
(Sn(OH)<sub>2</sub>TTP)-INTERPOSED TITANATE  
NANOTUBES BY USING CONFOCAL LASER  
SCANNING MICROSCOPY

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Sn(OH)<sub>2</sub>TTP-interposed titanate nanotube has been prepared by one-step hydrothermal reaction of Sn(OH)<sub>2</sub>TTP and anatase TiO<sub>2</sub> in NaOH aqueous solution. The structure of the nanotube has been characterized by using TEM, AFM, XRD, and FT-IR techniques. The photophysical properties of the nanotubes have been studied by ps diffuse-reflectance transient absorption spectroscopy. The photo-luminescence (PL) images of the Sn(OH)<sub>2</sub>TTP-interposed titanate nanoparticles were observed as wide field images by using confocal laser scanning microscope (CSM), and they were identified to be single nano structures. The single-nanostructure photoluminescence spectra and their decay times of the nanostructural particles were measured by using the CSM-coupled ps-time-resolved PL system, and they were compared with those measured by ensemble-averaged basis. These results will be compared with optical properties of single titanate nanotube synthesized by hydrothermal method.

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