

文献

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Influence of Ni doping on phase transformation and optical properties of TiO₂ films deposited on quartz substrates by sol-gel process

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抄録 (Abstract)

The Ni-doped TiO₂ films were synthesized on quartz substrates by the sol-gel method. Results from X-ray diffraction and Raman spectra indicate that Ni doping catalyzes the anatase-to-rutile transformation. When Ni content is up to 10 mol%, the transformation has been finished. The dielectric functions of Ni-doped TiO₂ films were extracted by fitting transmittance spectra according to the Adachi's dielectric function model. The optical band gap decreases from 3.64 eV to 3.51 eV with increasing Ni content. The results suggest that the acceleration of phase change and variation of optical properties may be related to defects due to Ni doping. © 2012 Elsevier B.V. All rights reserved.

著者キーワード

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