

**Fabrication and Utilization of Titania Nanofibers from Natural Leucoxene Mineral in Photovoltaic Applications**

**Author(s):**

Pavasupree, S (Pavasupree, Sorapong)<sup>1</sup>; Laosiripojana, N (Laosiripojana, Navadol)<sup>2</sup>; Chuangchote, S (Chuangchote, Surawut)<sup>3</sup>; Sagawa, T (Sagawa, Takashi)<sup>3</sup>

**Source:**

JAPANESE JOURNAL OF APPLIED PHYSICS **Volume:** 50 **Issue:** 1 **Special Issue:** SI **Article Number:** 01BJ16 **DOI:** 10.1143/JJAP.50.01BJ16 **Part:** Part 3 **Published:** JAN 2011

**Abstract:**

TiO(2) nanofibers were synthesized from natural leucoxene mineral via a hydrothermal process. The shapes, crystalline structure, shape transformation, phase transformation, and specific surface area of the resulting nanostructured materials were characterized by X-ray diffraction (XRD), scanning electron microscopy (SEM), transmission electron microscopy (TEM), and Brunauer-Emmett-Teller (BET) surface area measurements. The size of prepared nanofibers was about 12-58 nm in width and about 3-22  $\mu$ m in length. The BET surface area of the prepared sample was about 55 m<sup>2</sup>/g. Obtained nanofibers were preliminarily applied as photocatalysts for hydrogen evolution and electrodes for dye-sensitized solar cells (DSSCs). (C) 2011 The Japan Society of Applied Physics

**Addresses:**

1. Rajamangala Univ Technol, Fac Engn, Pathum Thani 12110, Thailand
2. King Mongkuts Univ Technol, JGSEE, Thonburi 10140, Bangmod, Thailand
3. Kyoto Univ, Inst Adv Energy, Kyoto 6110011, Japan

แหล่งอ้างอิง [Web of Science](#)