

Web of Science

Search | Search Results | My Tools | Search History | Marked List

30 of 449

NCBI

Look Up Full Text



Save to EndNote online

Add to Marked List

Synthesis and Characterization of Zinc Oxide Nanosheets for Dye-Sensitized Solar Cells

By: Al-Heniti, S (Al-Heniti, S.)^[1]; Umar, A (Umar, Ahmad)^[2,3]; Zaki, HM (Zaki, H. M.)^[4]

[View ResearcherID and ORCID](#)

JOURNAL OF NANOSCIENCE AND NANOTECHNOLOGY

Volume: 15 Issue: 12 Pages: 9954-9959

DOI: 10.1166/jnn.2015.10693

Published: DEC 2015

[View Journal Impact](#)

Abstract

Zinc oxide (ZnO) nanosheets were synthesized by a simple and facile hydrothermal process and characterized in terms of their morphological, structural, compositional, optical and photovoltaic properties. The detailed characterization revealed that the synthesized ZnO material possess nanosheet morphologies which are grown in very high density, possessing well-crystallinity with wurtzite hexagonal phase and exhibiting good optical properties. Further, the synthesized ZnO nanosheets were used as photoanode material to fabricate efficient dye-sensitized solar cell (DSSC). The fabricated DSSC shows an overall light-to-electricity conversion efficiency of similar to 1.57%, open-circuit voltage (V_{oc}) of 0.552 V, short-circuit currents (J_{sc}) of similar to 7.2 mA/cm² and fill factors (FF) of 0.40.

Keywords

Author Keywords: ZnO Nanosheets; Light-to-Electricity Conversion Efficiency; Dye-Sensitized Solar Cell

KeyWords Plus: ZNO THIN-FILMS; GROWTH; NANOSTRUCTURES; TEMPERATURE; PERFORMANCE; FABRICATION; DEPOSITION; MECHANISM; NANORODS; HYDROGEN

Author Information

Reprint Address: Al-Heniti, S (reprint author)

+ King Abdulaziz Univ, Fac Sci, Dept Phys, POB 80203, Jeddah 21589, Saudi Arabia.

Addresses:

+ [1] King Abdulaziz Univ, Fac Sci, Dept Phys, Jeddah 21589, Saudi Arabia

+ [2] Najran Univ, Fac Sci & Arts, Dept Chem, Najran 11001, Saudi Arabia

+ [3] Najran Univ, Promising Ctr Sensors & Elect Devices, Najran 11001, Saudi Arabia

+ [4] Zagazig Univ, Dept Phys, Fac Sci, Zagazig 44519, Egypt

Funding

Funding Agency	Grant Number
Deanship of Scientific Research (DSR), King Abdulaziz University, Jeddah	533/130/1434
DSR	

[View funding text](#)

Publisher

AMER SCIENTIFIC PUBLISHERS, 26650 THE OLD RD, STE 208, VALENCIA, CA 91381-0751 USA

Categories / Classification

Research Areas: Chemistry; Science & Technology - Other Topics; Materials Science; Physics

Web of Science Categories: Chemistry, Multidisciplinary; Nanoscience & Nanotechnology; Materials Science, Multidisciplinary; Physics, Applied; Physics, Condensed Matter

Citation Network

5 Times Cited
32 Cited References
[View Related Records](#)

[Create Citation Alert](#)

(data from Web of Science Core Collection)

All Times Cited Counts

5 in All Databases
5 in Web of Science Core Collection
0 in BIOSIS Citation Index
0 in Chinese Science Citation Database
0 in Data Citation Index
0 in Russian Science Citation Index
0 in SciELO Citation Index

Usage Count

Last 180 Days: 1
Since 2013: 17
[Learn more](#)

Most Recent Citation

Kaewyai, Karakade. [Effects of Mixed-Phase Copper Oxide Nanofibers in ZnO Dye-Sensitized Solar Cells on Efficiency Enhancement](#). JOURNAL OF NANOSCIENCE AND NANOTECHNOLOGY, AUG 2017.

[View All](#)

This record is from:

Web of Science Core Collection
- Science Citation Index Expanded

Suggest a correction

If you would like to improve the quality of the data in this record, please [suggest a correction](#).

Document Information**Document Type:** Article**Language:** English**Accession Number:** WOS:000365555000087**PubMed ID:** 26682439**ISSN:** 1533-4880**eISSN:** 1533-4899**Journal Information****Table of Contents:** [Current Contents Connect](#)**Impact Factor:** [Journal Citation Reports](#)**Other Information****IDS Number:** CX2VN**Cited References in Web of Science Core Collection:** **32****Times Cited in Web of Science Core Collection:** **5**