

Web of Science

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

Look Up Full Text | Save to EndNote online | Add to Marked List 50 of 179

Improved electrical and photosensing properties of CuPc phthalocyanine/p-silicon diode by nanostructure

By: **Cavas, M** (Cavas, M.)^[2]; **Aydin, ME** (Aydin, M. Enver)^[3]; **Al-Ghamdi, AA** (Al-Ghamdi, A. A.)^[1]; **Al-Hartomy, OA** (Al-Hartomy, Omar A.)^[1,4]; **El-Tantawy, F** (El-Tantawy, Farid)^[5]; **Yakuphanoglu, F** (Yakuphanoglu, F.)^[1,6]

[View ResearcherID and ORCID](#)

JOURNAL OF OPTOELECTRONICS AND ADVANCED MATERIALS

Volume: 14 Issue: 9-10 Pages: 798-803

Published: SEP-OCT 2012

[View Journal Impact](#)

Abstract

The electrical and photovoltaic properties of metal/nanostructure CuPc phthalocynine organic layer /semiconductor diode have been investigated. The diode indicated a good rectifying behavior with non-linear behavior due to the organic and inorganic interfacial layers. The barrier height (0.77 eV) and ideality factor (1.99) of the studied diode is higher than that of conventional Al/p-Si Schottky diode. This indicates that barrier height could be increased by using CuPc phthalocynine organic layer on p-type silicon by changing the space charge region of p-type silicon. The photovoltaic parameters of the diode were found to be Voc=0.25 and J(sc)=607.2 mu A under AM1.5. The obtained results indicate that the barrier height of conventional Al/p-Si Schottky diode can be increased by organic modification and metal/nanostructure CuPc/semiconductor diode can be used for optoelectronic device applications as a photosensor.

Keywords

Author Keywords: Organic-inorganic diodes; Photosensor; CuPc phthalocynine

KeyWords Plus: CURRENT-VOLTAGE CHARACTERISTICS; SCHOTTKY DIODE; SERIES RESISTANCE; INTERFACIAL LAYER; CONTACTS; BARRIER; STATES

Author Information

Reprint Address: Yakuphanoglu, F (reprint author)

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

Addresses:

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

+ [2] Firat Univ, Maden Higher Vocat Sch, TR-23169 Elazig, Turkey

+ [3] Dicle Univ, Dept Phys, TR-21280 Diyarbakir, Turkey

[4] Tabuk Univ, Dept Phys, Fac Sci, Tabuk 71491, Saudi Arabia

+ [5] Suez Canal Univ, Dept Phys, Fac Sci, Ismailia, Egypt

+ [6] Firat Univ, Dept Phys, Fac Sci, TR-23169 Elazig, Turkey

E-mail Addresses: fyhanoglu@firat.edu.tr

Funding

Funding Agency	Grant Number
Firat University, Elazig, Turkey	4/1433

[View funding text](#)

Publisher

NATL INST OPTOELECTRONICS, 1 ATOMISTILOR ST, PO BOX MG-5, BUCHAREST-MAGURELE 76900, ROMANIA

Citation Network

1 Times Cited
24 Cited References
[View Related Records](#)

[Create Citation Alert](#)

(data from Web of Science Core Collection)

All Times Cited Counts

1 in All Databases
1 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: 7
[Learn more](#)

Most Recent Citation

Hendi, A. A. [Electrical characterization of n-Si/Copper phthalocyanine based on photodiode](#) . JOURNAL OF OPTOELECTRONICS AND ADVANCED MATERIALS, SEP-OCT 2014.

[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](#).

Categories / Classification**Research Areas:** Materials Science; Optics; Physics**Web of Science Categories:** Materials Science, Multidisciplinary; Optics; Physics, Applied**Document Information****Document Type:** Article**Language:** English**Accession Number:** WOS:000310498600016**ISSN:** 1454-4164**Journal Information****Table of Contents:** [Current Contents Connect](#)**Impact Factor:** [Journal Citation Reports](#)**Other Information****IDS Number:** 029MA**Cited References in Web of Science Core Collection:** **24****Times Cited in Web of Science Core Collection:** **1**