

Web of Science

Search

Search Results

My Tools

Search History

Marked List

[Look Up Full Text](#)


Save to EndNote online

Add to Marked List

135 of 449

Studies of photosensitivity and photo-induced negative differential resistance (NDR) of TIPS-pentacene-poly(3-hexyl)thiophene blend organic thin film transistor

By: Mansouri, S (Mansouri, S.)^[1]; Jouili, A (Jouili, A.)^[1]; El Mir, L (El Mir, L.)^[1,2]; Al-Ghamdi, AA (Al-Ghamdi, Ahmed A.)^[3]; Yakuphanoglu, F (Yakuphanoglu, F.)^[3,4]

[View ResearcherID and ORCID](#)

SYNTHETIC METALS

Volume: 207 Pages: 1-12

DOI: 10.1016/j.synthmet.2015.05.016

Published: SEP 2015

[View Journal Impact](#)

Abstract

We have simulated the experimental characteristics of the organic thin film transistor to reproduce the transfer and output characteristics in saturation regime. The photoresponse and gate field dependence of the charge transport characteristics of the TFTs were studied. The threshold voltage exhibited a positive shift from 0.34V in darkness to 5.18 V under illumination, which can be attributed to the well-known photovoltaic effect resulting from the transport of photogenerated holes and trappings of photogenerated electrons near the source electrode in organic phototransistors. When white light irradiated the organic TFTs, a negative differential resistance (NDR) behavior appears in the saturation region of output characteristics. This NDR behavior in TFTs can be explained in terms of trappings and releasing mechanism of the mobile charges in the interface between the electrodes (source and drain) and the organic layer. (C) 2015 Elsevier B.V. All rights reserved.

Keywords

Author Keywords: TIPS:P3HT-TFF; Photoresponse; Electrical properties; NDR effect

KeyWords Plus: FUNCTIONALIZED PENTACENE; CHARGE-TRANSPORT; PERFORMANCE; LAYER; PHOTOVOLTAICS; MODEL; PHOTOTRANSISTORS; OCTITHIOPHENE; DERIVATIVES; DIODES

Author Information

Reprint Address: Mansouri, S (reprint author)

- + Gabes Univ, Fac Sci Gabes, Lab Phys Mat & Nanomat Appl Environm LaphyMNE, Zrig 6072, Gabes, Tunisia.

Addresses:

- + [1] Gabes Univ, Fac Sci Gabes, Lab Phys Mat & Nanomat Appl Environm LaphyMNE, Zrig 6072, Gabes, Tunisia
- [2] Al Imam Mohammad Ibn Saud Islamic Univ IMSIU, Coll Sci, Dept Phys, Riyadh 11623, Saudi Arabia
- + [3] King Abdulaziz Univ, Fac Sci, Dept Phys, Jeddah 21589, Saudi Arabia
- + [4] Firat Univ, Dept Phys, Fac Sci, TR-23169 Elazig, Turkey

E-mail Addresses: mansourislah@gmail.com

Funding

Funding Agency	Grant Number
Tunisian Ministry of High Education	

[View funding text](#)

Publisher

Citation Network

2 Times Cited

51 Cited References

[View Related Records](#)



[Create Citation Alert](#)

(data from Web of Science Core Collection)

All Times Cited Counts

2 in All Databases

2 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: 6

Since 2013: 52

[Learn more](#)

Most Recent Citation

Ruzgar, Serif. Modification of gate dielectric on the performance of copper (II) phthalocyanine based on organic field effect transistors . OPTIK, 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](#).

ELSEVIER SCIENCE SA, PO BOX 564, 1001 LAUSANNE, SWITZERLAND

Categories / Classification

Research Areas: Materials Science; Physics; Polymer Science

Web of Science Categories: Materials Science, Multidisciplinary; Physics, Condensed Matter; Polymer Science

Document Information

Document Type: Article

Language: English

Accession Number: WOS:000359502900001

ISSN: 0379-6779

Journal Information

Table of Contents: [Current Contents Connect](#)

Impact Factor: [Journal Citation Reports](#)

Other Information

IDS Number: CO9NQ

Cited References in Web of Science Core Collection: **51**

Times Cited in Web of Science Core Collection: **2**

135 of 449