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## Photo-induced effects on electrical properties of Ga15Se81Ag4 chalcogenide thin films

By: Alvi, MA (Alvi, M. A.)<sup>[1]</sup>; Khan, SA (Khan, Shamshad A.)<sup>[2]</sup>; Al-Ghamdi, AA (Al-Ghamdi, A. A.)<sup>[1]</sup>

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### MATERIALS LETTERS

Volume: 66 Issue: 1 Pages: 273-275

DOI: 10.1016/j.matlet.2011.08.083

Published: JAN 2012

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### Abstract

The present work deals with the study of photo-induced crystallization on thermally evaporated Ga15Se81Ag4 chalcogenide thin films. It has been achieved by shining white light using 1500W tungsten lamp. The ambient temperature during illumination process was controlled and kept at 75 degrees C, which is in between the glass transition and crystallization temperature of Ga15Se81Ag4 glasses. The exposure time was experimentally established for different illumination times from 0 to 120 min. After various exposure times, thin films were characterized by XRD and SEM. The dc conductivities and activation energies of these thin films were measured in temperature range of 303-403 K. It is found that the activation energy in Ga15Se81Ag4 chalcogenide thin films decreases with increasing the exposure time whereas the dc conductivity increases at each temperature by increasing the illumination time. (C) 2011 Elsevier B.V. All rights reserved.

### Keywords

**Author Keywords:** Amorphous materials; Thin films; Electrical properties; X-ray techniques; Photo-induced crystallization

**KeyWords Plus:** PULSED-LASER DEPOSITION; AMORPHOUS FILMS; CRYSTALLIZATION; CONDUCTION; GLASS

### Author Information

**Reprint Address:** Alvi, MA (reprint author)

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

#### Addresses:

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

[ 2 ] Sr Andrews Coll, Dept Phys, Gorakhpur 273001, Uttar Pradesh, India

**E-mail Addresses:** [alveema@hotmail.com](mailto:alveema@hotmail.com)

### Funding

Funding Agency	Grant Number
King Abdul Aziz University, Jeddah, KSA	1431/130/12

[View funding text](#)

### Publisher

ELSEVIER SCIENCE BV, PO BOX 211, 1000 AE AMSTERDAM, NETHERLANDS

### Categories / Classification

**Research Areas:** Materials Science; Physics

**Web of Science Categories:** Materials Science, Multidisciplinary; Physics, Applied

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