## **Accepted Manuscript**

Mechanical properties of  $Al_XIn_{1-X}Sb$  ternary alloys under the effect of pressure and temperature

A.R. Degheidy, E.B. Elkenany, O.A. Alfrnwani

PII: S2352-2143(17)30253-8

DOI: 10.1016/j.cocom.2017.12.002

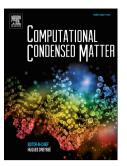
Reference: COCOM 116

To appear in: Computational Condensed Matter

Received Date: 4 November 2017
Revised Date: 3 December 2017
Accepted Date: 4 December 2017

Please cite this article as: A.R. Degheidy, E.B. Elkenany, O.A. Alfrnwani, Mechanical properties of Al<sub>x</sub>In<sub>1-x</sub>Sb ternary alloys under the effect of pressure and temperature, *Computational Condensed Matter* (2018), doi: 10.1016/j.cocom.2017.12.002.

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



ACCEPTED MANUSCRIPT

Mechanical properties of Al<sub>x</sub>In<sub>1-x</sub>Sb ternary alloys under the effect of

pressure and temperature

A. R. Degheidy, E. B. Elkenany\*, O. A. Alfrnwani

Department of Physics, Faculty of Science, Mansoura University, P. O. Box: 35516, Mansoura, Egypt

ABSTRACT

The pseudo-potential method (EPM) within the virtual crystal approximation

(VCA) including disorder effect was used to determine the mechanical properties

of Al<sub>x</sub>In<sub>1-x</sub>Sb alloys in zinc-blende structure. The studied properties as elastic

constants and their related quantities as bulk, shear and Young moduli are

calculated and compared with the published data and showed generally good

agreement. Other related quantities are also successfully studied. The variation of

all studied quantities with composition, pressure and temperature has been

examined. Most of our results can give an important reference especially in the

region of high pressure and temperature.

Keywords:

Mechanical properties

Pressure

Temperature

Composition

\*Corresponding author.

E-mail address: kena@mans.edu.eg.

1

## Download English Version:

## https://daneshyari.com/en/article/7956596

Download Persian Version:

https://daneshyari.com/article/7956596

<u>Daneshyari.com</u>