

Transformations on the surface of indium arsenide in nitric acid

© Oksana N. Zarubina,⁺ Liubov V. Maliy, and Gennady M. Mokrousov*

Department of Chemistry. Tomsk State University.

Lenin Pr., 36. Tomsk, 634050. Russia. Phone: +7 (3822) 42-07-83.

*E-mail: zagtsuru@gmail.com⁺, NaumovaLB@mail.ru**

*Supervising author; ⁺Corresponding author

Keywords: *indium arsenide, interphase transformations, surface, etching, diagram of potential – pH.*

Abstract

The conditions of formation of dense phase layer consisting mainly of arsenic and small amount of its oxide on the *n*-InAs surface in concentrated nitric acid are founded. With the use of thermodynamic concepts (diagram potential of InAs – pH) the possible mechanism of reactions at the interface and the formation of arsenic phase was considered. Phase and elemental composition, morphology of formed surfaces are investigated by Raman spectroscopy, solid-state voltammetry, scanning electron microscopy, X-ray diffraction and EDX analysis.