



Sumy State University  
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## Maksym M. Ivashchenko, Ph.D. in Devices Physics

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### Education

- Nov 2008 – Nov 2011* **Sumy State University**  
Ph.D. in Devices Physics, Physics of Devices, Elements and Systems  
Sumy, Ukraine
- Sep 2004 – Jul 2008* **Sumy State University**  
M.Sc., Electronic Devices  
Sumy, Ukraine
- Sep 2000 – Jun 2004* **Konotop Polytechnical School**  
B.Sc., Electronic Automation Tools  
Konotop, Ukraine

## Thesis

1. Structural, optical and electro-physical properties of CdSe,ZnSe films and heterojunctions on their base

(Ph.D. Thesis, Specialty - Physics of Devices, Elements and Systems, 2014)

2. Formation features and physical properties of Co- and Fe-based nanoparticles and their nanostructured interfaces

(M.Sc. Thesis, Specialty - Electronic Devices, 2008)

3. Physical features and appliance perspectives of GaAs quantum dots

(B.Sc. Thesis, Specialty - Electronic Devices, 2007)

4. Instrumentation of mining speakerphone: the gain and selection contacts device

(B.Sc. Thesis, Specialty - Electronic Automation Tools, 2004)

## Research Experience

*Apr 2015 – Feb 2016*    **Vice Dean of Scientific Research**  
Sumy State University, Department of Electronic Devices and Automation  
Sumy, Ukraine

*Oct 2011 – Oct 2012*    **Research Associate**  
Sumy State University, Department of Applied Physics  
Sumy, Ukraine

*Oct 2009 – Oct 2011*    **Research Associate**  
Sumy State University, Department of General and Theoretical Physics  
Sumy, Ukraine

## Statistics

*RG Score*    13.27

*Publications*    22

*Total Impact Points*    12.19

Reads 918

Citations 27

## Skills & Activities

*Skills* Material Characterization, Nanomaterials, Thin Film Deposition, Materials, Semiconductor Physics, Solar Cells, Solar Energy Materials, Optical Properties, Thermal Evaporation, Heterojunction, Semiconductor, Photoluminescence, Zinc Oxide, Thin Films, Thin Films and Nanotechnology, Semiconductor Device Physics, Thin Film Technology, Nanoelectronics, Thin Film Fabrication, Photovoltaics, Optoelectronics, Electrical Characterization, Chemical Bath Deposition, I-V, Materials Science, Solid State Physics, Nanoparticles, IR Spectra

*Languages* English, German, Hungarian, Russian, Ukrainian

*Scientific Memberships* Scientific Association of Students, Postgraduate Students, Doctors and Young Scientists of Sumy State University (Head of the Subdivision Association)

*Journal Referee* Applied Physics A, Materials Science in Semiconductor Processing, Solar Energy

## Publication Highlights

M.M. Ivashchenko, I.P. Buryk, V.M. Latyshev, A.O. Stepanenko, K.S. Levchenko: *Influence of substrate temperature on structural and optical properties of bismuth oxide thin films deposited by close-spaced vacuum sublimation*. Superlattices and Microstructures 12/2015; DOI:10.1016/j.spmi.2015.10.025

M.M. Ivashchenko, A.S. Opanasyuk, V.I. Perekrestov, V.V. Kosyak, Yuriy P. Gnatenko, V.M. Kolomiets: *Morphological, structural, compositional properties and IR-spectroscopy of CdSe films deposited by close-spaced vacuum sublimation*. Vacuum 05/2015; 119:81. DOI:10.1016/j.vacuum.2015.04.036

M.M. Ivashchenko, I.P. Buryk, A.S. Opanasyuk, D. Nam, H. Cheong, Ja.G. Vaziev, V.V. Bibyk: *Influence of deposition conditions on morphological, structural, optical and electro-physical properties of ZnSe films obtained by close-spaced vacuum sublimation*. Materials Science in Semiconductor Processing 03/2015; 36:13. DOI:10.1016/j.mssp.2015.03.020

Y.P. Gnatenko, A.S. Opanasyuk, M.M. Ivashchenko, P.M. Bukivskij, I.O. Faryna: *Study of the correlation between structural and photoluminescence properties of CdSe thin films deposited by close-spaced vacuum sublimation*. Materials Science in Semiconductor Processing 10/2014; 26:663-668. DOI:10.1016/j.mssp.2014.06.013

Y.P. Gnatenko, P.M. Bukivskij, I.O. Faryna, A.S. Opanasyuk, M.M. Ivashchenko: *Photoluminescence of high optical quality CdSe thin films deposited by close-spaced vacuum sublimation*. Journal of Luminescence 10/2014; 146(1):174-177. DOI:10.1016/j.jlumin.2013.09.070

## Journal Publications

- M.M.Ivashchenko, I.P.Buryk, V.M.Latyshhev, A.O.Stepanenko, K.S.Levchenko: *Influence of substrate temperature on structural and optical properties of bismuth oxide thin films deposited by close-spaced vacuum sublimation*. Superlattices and Microstructures 12/2015; DOI:10.1016/j.spmi.2015.10.025
- M.M.Ivashchenko, A.S. Opanasyuk, I.P.Buryk, V.A. Moroz: *Моделювання робочих характеристик сонячного елементу р-CuO/p-ZnTe/n-CdSe/n-MoSe<sub>2</sub>/Mo*.
- M.M.Ivashchenko, A.S. Opanasyuk, V.I. Perekrestov, V.V. Kosyak, Yuriy P. Gnatenko, V.M. Kolomiets: *Morphological, structural, compositional properties and IR-spectroscopy of CdSe films deposited by close-spaced vacuum sublimation*. Vacuum 05/2015; 119:81. DOI:10.1016/j.vacuum.2015.04.036
- M.M.Ivashchenko, I.P.Buryk, A S Opanasyuk, D. Nam, H. Cheong, Ja.G. Vaziev, V.V.Biby: *Influence of deposition conditions on morphological, structural, optical and electro-physical properties of ZnSe films obtained by close-spaced vacuum sublimation*. Materials Science in Semiconductor Processing 03/2015; 36:13. DOI:10.1016/j.mssp.2015.03.020
- A.S. Opanasyuk, M.M. Ivashchenko, I.P. Buryk, V.A. Moroz: *Working characteristics simulation of p+-CuO / p-ZnTe / n-CdSe / n-MoSe<sub>2</sub> / mo solar cell*. Journal of Nano- and Electronic Physics 01/2015; 7(2):1-5.
- Y.P. Gnatenko, A.S. Opanasyuk, M.M. Ivashchenko, P.M. Bukivskij, I.O. Faryna: *Study of the correlation between structural and photoluminescence properties of CdSe thin films deposited by close-spaced vacuum sublimation*. Materials Science in Semiconductor Processing 10/2014; 26:663-668. DOI:10.1016/j.mssp.2014.06.013
- Y.P. Gnatenko, P.M. Bukivskij, I.O. Faryna, A.S. Opanasyuk, M.M. Ivashchenko: *Photoluminescence of high optical quality CdSe thin films deposited by close-spaced vacuum sublimation*. Journal of Luminescence 10/2014; 146(1):174-177. DOI:10.1016/j.jlumin.2013.09.070
- M.M.Ivashchenko, A.D. Pogrebnjak, A.K.M. Muhammed, N.M. Opanasyuk, I.V. Sudzhanskaya: *Структурные исследования пленок оксидации и нитрида алюминия, полученных методами CVD и магнетронного распыления*.
- M.M.Ivashchenko: *Structural investigations of zinc oxide and nitride aluminum films obtained by CVD and magnetron sputtering methods*.
- A.S.Opanasyuk, D.I.Kurbatov, M.M.Ivashchenko, I.Yu.Protsenko, H. Cheong: *Properties of the window layers for the CZTSe and CZTS based solar cells*. Journal of Nano- and Electronic Physics 01/2012; 4(1-1):1-3.
- M.M. Ivashchenko: *Structural and optical characteristics of ZnSe and CdSe films condensed on non-oriented substrates*.
- M.M.Ivashchenko, A.S.Opanasyuk, S.N. Danilchenko: *Structure and substructure of zinc selenide films*. Functional Materials Letters 03/2011; 18(1):18.
- M.M.Ivashchenko: *Structural and substructural characteristics of cadmium selenide thin films*.
- V.V. Starikov, M.M. Ivashchenko, A.S. Opanasyuk, V.L. Perevertaylo: *Surface morphology and optical properties of cdse films, obtained by close-spaced sublimation method*. Journal of Nano- and Electronic Physics 01/2009; 1(4):100-109.

M.M. Ivashchenko, A.S. Opanasyuk, N.M. Opanasyuk, S.M. Danilchenko, V.V.Starikov: *Structural and optical characteristics of ZnSe and CdSe films condensed on non-oriented substrates.*

## Conference Proceedings

I.P. Buryk, M.M. Ivashchenko, L.A.Sheshenia: *Structural and Electro-physical Properties of Heterogenous Film Materials Based on Refractory Metals.* NAP-2014; 09/2014

A.S. Opanasyuk, M.M. Ivashchenko: *MODELING OF THE MAIN WORKING PARAMETERS OF SOLAR CELLS BASED ON ZnTe/CdSe AND ZnSe/CdSe HETEROJUNCTIONS. SCIENTIFIC RESEARCH AND THEIR PRACTICAL APPLICATION. MODERN STATE AND WAYS OF DEVELOPMENT* '2013; 10/2013

H. Cheong, D. Nam, A.S. Opanasyuk, M.M. Ivashchenko, D.I. Kurbatov, M.M. Kolesnyk, O.V. Klymov: *Raman Investigation on ZnS, ZnSe, ZnTe Thin Films Obtained by CSVS Technique.* International Conference "Nanomaterials, Application and Properties NAP-2012"; 09/2012

N.Y. Jamil, S.N. Abdulla, A.A. K. Muhammed, A.D.Pogrebnyak, M.M.Ivashchenko: *Design and Fabrication Heterojunction Solarcell of Si-CdS-ZnO Thin Film.* NAP-2012; 09/2012

M. Ivashchenko: *Surface morphology of nanostructured ZnO and ZnSe films.* 22nd Int. Crimean Conference "Microwave & Telecommunication Technology" (CriMiCo'2012), Alushta, Crimea, Ukraine; 09/2012