

16th Russian Youth Conference on Physics of Semiconductors and Nanostructures, Opto- and Nanoelectronics 2014

Journal of Physics: Conference Series Volume 586

**St. Petersburg, Russia
24 – 28 November 2014**

Editors:

R. A. Suris

L. E. Vorobjev

D. A. Firsov

ISBN: 978-1-63439-916-6

ISSN: 1742-6588

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© by the Institute of Physics
All rights reserved.

Printed by Curran Associates, Inc. (2015)

For permission requests, please contact the Institute of Physics
at the address below.

Institute of Physics
Dirac House, Temple Back
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481
Fax: 44 1 17 920 0979

techtracking@iop.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2634
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

MID-IRRED LIGHT ABSORPTION BY PHOTO-EXCITED CHARGE CARRIERS IN GE/SI QUANTUM DOTS	1
<i>L. Vorobjev, D. Firsov, V. Panevin, A. Sofronov, R. Balagula, A. Tonkikh</i>	
X-RAY RADIATION INFLUENCE ON PHOTOLUMINESCENCE SPECTRA OF COMPOSITE THIN FILMS BASED ON C₆₀<CDTE>	6
<i>M. Elistratova, I. Zakharova, N. Romanov</i>	
THE USE OF ASYMPTOTIC METHODS FOR MODELLING OF THE CARRIERS WAVE FUNCTIONS IN THE SI/SIGE HETEROSTRUCTURES WITH QUANTUM-CONFINED LAYERS	10
<i>A. Orlov, N. Levashova, T. Burbaev</i>	
FEATURES OF MICROSTRUCTURE OF INSB QUANTUM DOTS ON INAS SUBSTRATE	15
<i>N. Bert, V. Nevedomskiy, L. Sokura</i>	
TERAHERTZ REFLECTION AND EMISSION ASSOCIATED WITH NONEQUILIBRIUM SURFACE PLASMON POLARITONS IN N-GAN	21
<i>G. Melentyev, V. Shalygin, M. Moldavskaya, V. Panevin, L. Vorobjev, D. Firsov, H. Nykanen, L. Riuttanen, O. Svensk, S. Suihkonen</i>	
ANALYSIS OF ELECTRON ENERGY SPECTRUM IN TYPE II CORE/SHELL QUANTUM DOTS	27
<i>A. Karmanov, I. Pronin, N. Yakushova, S. Igoshina, I. Averin</i>	
THE ADSORPTION OF A HYDROGEN ATOM ON THE TWO TYPES OF BORON SHEETS SURFACE	30
<i>E. Boroznina, N. Borkhoeva, S. Boroznin</i>	
FORMATION OF ORDERED NANOSCALE CAPILLARY MEMBRANES BASED ON ANODIC ALUMINA	36
<i>V. Luchinin, V. Moshnikov, E. Muratova, R. Samigullin</i>	
ELECTROPHYSICAL PROPERTIES OF PCM-MATERIALS IN CRYSTALLINE AND AMORPHOUS STATES	40
<i>A. Gaydamaka, O. Martynova, E. Vladimirskaia, V. Gasumyants</i>	
RESEARCH OF VACANCY DEFECT FORMATION ON THE SURFACE OF TWO-DIMENSIONAL BORON SHEETS	45
<i>E. Boroznina, T. Zhiganova, S. Boroznin</i>	
STUDY OF TEMPERATURE AND PRESSURE DEPENDENCES OF ELECTRIC PROPERTIES OF AMORPHOUS AG-GE-AS-S CHALCOGENIDES CONTAINING CARBON NANOTUBES	50
<i>K. Kurochka, N. Melnikova, V. Zaikova, Y. Volkova</i>	
INTERSUBBAND ABSORPTION MODULATION IN THE GAAS/ALGAAS DOUBLE TUNNEL-COUPLED QUANTUM WELLS	56
<i>D. Rybalko, M. Vinnichenko, L. Vorobjev, D. Firsov, R. Balagula, M. Kulagina, A. Vasil'Yev</i>	
BORON TRICHLORIDE PLASMA TREATMENT EFFECT ON OHMIC CONTACT RESISTANCE FORMED ON GAN-BASED EPITAXIAL STRUCTURE	61
<i>A. Kobelev, Y. Barsukov, N. Andrianov, A. Smirnov</i>	
EXPERIMENTAL MODEL OF MULTI-JUNCTION SOLAR CELL: IV CURVE TAILORING AND PHOTORESponce ARTIFACT SIMULATION	65
<i>S. Kozhukhovskaia, E. Filimonov, M. Shvarts</i>	
DIFFUSION-DRIFT MODEL OF INJECTION LASERS WITH DOUBLE HETEROSTRUCTURE	69
<i>I. Pisarenko, E. Ryndin, M. Denisenko</i>	
RELAXATION PHENOMENA IN A NATURALLY DISORDERED PB₃O₄ SEMICONDUCTOR	75
<i>M. Sevryugina, N. Pshchelko, Y. Kadi</i>	
THE STUDY OF POROUS SILICON POWDERS BY CAPILLARY CONDENSATION	81
<i>A. Belorus, E. Maraeva, Y. Spivak, V. Moshnikov</i>	
ALGAAS/GAAS PHOTODETECTORS FOR DETECTION OF LUMINESCENT LIGHT FROM SCINTILLATORS	86
<i>M. Bazalevsky, S. Didenko, S. Yurchuk, S. Legotin, O. Rabinovich, T. Hrustaleva, T. Suvorova, I. Kazakov</i>	
Author Index	