

Poster Session II. April 24, 2019

1. Crystal growth and structural properties of semiconductor materials & nanostructures

Poster # 1-1

Quartz as an impurity source in HVPE growth of GaN: a thermodynamic calculation

Vladislav Voronenkov

St. Petersburg, Russian Federation

Poster # 1-2

Initial growth state MoS₂ thin film by magnetron sputtering

Kyaw Zinphyo

Moscow, Russian Federation

Poster # 1-3

Sensory properties of zinc oxide nanorods grown on glass

Alexandra Starnikova

Taganrog, Russian Federation

Poster # 1-4

Effect of morphology features of a patterned surface on the nucleation processes of In/GaAs nanostructures during droplet epitaxy

Natalia Chernenko

Taganrog, Russian Federation

Poster # 1-5

Estimation of particle size using Debye equation and Scherrer formula for polyphasic TiO₂ powder

Aleksandra Bokuniaeva

Ekaterinburg, Russian Federation

Poster # 1-6

Structural and phase transformations in ultrathin Au films during thermal-activated granulation

Olga Tomilina

Simferopol, Russian Federation

Poster # 1-7

Genetic algorithm application for solving inverse problems of X-ray diffraction on systems with quantum dots

Danil Sivkov

Syktvykar, Russian Federation

Poster # 1-8

The study on agglomerates of WC, TiC, TaC nanopowder mixtures obtained from hard-alloy waste products

Vladimir Gavrish

Sevastopol, Russian Federation

Poster # 1-9

Study of the mechanical characteristics of the Al₂O₃ film on the LiNbO₃ substrate

Aleksandr Shumilin

Saratov, Russian Federation

Poster # 1-10

Monoisotopic silicon-vacancy color centers in CVD single-crystal diamond films

Artem Martyanov

Moscow, Russian Federation

Poster # 1-11

New polymorphic varieties of fluorographene forming during fluorine functionalization of 4-8 graphene layers

Maxim Belenkov

Chelyabinsk, Russian Federation

Poster # 1-12

Biosensors based on nanowire field effect transistors with Schottky contacts

Tatyana Smolyarova

Krasnoyarsk, Russian Federation

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The influence of star-like palladium nanocrystallites on the gas transport parameters of modified palladium-containing membranes

Iliya Petriev

Krasnodar, Russian Federation

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Selective area epitaxy of n+-GaN layers on SiO₂ patterned GaN/c-Al₂O₃ templates by PA MBE

Kseniia Shubina

St. Petersburg, Russian Federation

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Cylindrical thermal invisibility cloak based on transformation thermodynamics

Victoria Soboleva

St. Petersburg, Russian Federation

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Structure and electronic properties of 4-8 and 4-6-12 layered varieties of boron nitride

Dmitry Ryashentsev

Chelyabinsk, Russian Federation

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Synthesis of FET based full-Heusler alloy thin films formed by rapid thermal annealing and transport properties

Anna Lukyanenko

Krasnoyarsk, Russian Federation

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Laser modification of high pressure high temperature nanodiamonds

Konstantin Mikheev

Izhevsk, Russian Federation

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Near Infrared-emitting PbS nanosheets and their lifecycle

Tatiana Kormilina

St. Petersburg, Russian Federation

Poster # 1-20

Synthesis and energy structure of optical transitions of the nitrogen and sulfur co-doped carbon dots

Pavel Khavlyuk

St. Petersburg, Russian Federation

Poster # 1-21

Low-dimensional heterostructures obtaining from an intelligent material and carbon material on a silicon

Sergey Gurin

Penza, Russian Federation

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Structure of V-defects in a-GaN films grown on r-sapphire substrate

Aleksandr Savchuk

Moscow, Russian Federation

Poster # 1-23

Atomic layer etching of Silicon Oxide

Vitaly Kuzmenko

Dolgoprudny, Russian Federation

Poster # 1-24

The effect of lead and nickel cations on AgInS₂/ZnS nanocrystals photoluminescence in aqueous solution

Oleg Korepanov

St. Petersburg, Russian Federation

Poster # 1-25

On the dendrite growth simulation during multitrack selective laser melting process

Alexander Dubrov

Shatura, Russian Federation

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The two-stage electrochemical deposition of a manganese-doped silicon-carbon film onto the silicon (100) substrate

Tatiana Mikhailova

Taganrog, Russian Federation

Poster # 1-27

Substrate-removed InAs/InAsSbP photodiode arrays

Aleksandr Klimov

St. Petersburg, Russian Federation

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In situ study of structural transformation of the (TeO)_x(Mo,V,Nb)O₁₄ nanocatalyst with a tunnel structure

Elizaveta Derevyannikova

Novosibirsk, Russian Federation

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Study of oxygen content in amorphous silicon suboxide thin films

Irina Merkulova

Novosibirsk, Russian Federation

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Influence of two-stage growth during the formation of GaAs/Si heterostructures for the creation of optoelectronic devices

Andrei Geldash

Taganrog, Russian Federation

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Investigation of a new C24 cluster for obtaining diamond-like phases: first-principle calculations

Vladimir Greshyakov

Chelyabinsk, Russian Federation

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Study of hydrogen passivation regimes influence on electrical and spectral characteristics of GaN NWs / Si heterostructures

Konstantin Shugurov

St. Petersburg, Russian Federation

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Stress-free growth of ultra-thin GaN/AlN multi quantum well structures by plasma-assisted molecular beam epitaxy

Oleg Koshelev

St. Petersburg, Russian Federation

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Technology of receiving semiconductor structures SixGe_{1-x} the MBE method from separate linear sources

Elena Kochugova

Nizhny Novgorod, Russian Federation

Poster # 1-35

Crystal lattice tilt analysis in gradient composition layers by electron and X-ray diffraction

Leonid Snigirev

St. Petersburg, Russian Federation

Poster # 1-36

Formation peculiarities of silver dendritic structures for photocatalysts of the visible radiation range

Alexander Sigaev

Penza, Russian Federation

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Critical pressure during the formation of carbon nanotubes by the method of plasma chemical vapor deposition

Julia Morozova

Taganrog, Russian Federation

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Effect of plasma source power on the formation of A₃B₅-based bulk nano-sized structures

Victor Klimin

Taganrog, Russian Federation

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Mechanism of formation of light-emitting hexagonal phase 9R-Si

Alena Nikolskaya

Nizhny Novgorod, Russian Federation

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Optically transparent conductive layer based on oriented metal networks

Irek Nizameev

Kazan, Russian Federation

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Growth of a multicomponent crystal by Chernov's mechanism

Alexey Redkov

St. Petersburg, Russian Federation

Poster # 1-43

Investigation of the local ion-induced deposition of carbon for fabrication of probes for nanodiagnostics

Alexey Kolomiyytsev

Taganrog, Russian Federation

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Monolith GaAsP/Si dual-junction solar cells grown by MBE

Maxim Sobolev

St. Petersburg, Russian Federation

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Application of the atomic layer etching technique for the formation of SiC-based field emitters

Alexey Rezvan

Taganrog, Russian Federation

Poster # 1-46

Formation of a masking coating on the silicon surface using the method of focused ion beams for nanoelectronics

Ivan Kots

Taganrog, Russian Federation

Poster # 1-47

Study of the ITO sublayer influence on the tubular carbon nanostructures formation

Nikolay Rudyk

Taganrog, Russian Federation

Poster # 1-48

Chemical synthesis and optical properties of composite materials containing PbI₂ nanoparticles

Anastasia Kulagina

St. Petersburg, Russian Federation

Poster # 1-49

XPS analysis of metallic wetting layer in In/GaAs system obtained at different growth temperatures

Mikhail Eremenko

Taganrog, Russian Federation

Poster # 1-50

On the growth mechanism of GaN thin films on Si(111)

Aleksandr Koryakin

St. Petersburg, Russian Federation

Poster # 1-51

Combined scanning probe nanolithography and liquid etching techniques for nanoprofiled structures formation

Victoria Polykova

Taganrog, Russian Federation

Poster # 1-52

Investigation of indium antimonide nanoparticles, obtained by the method of liquid chemical etching

Maksim Gavrikov

Saratov, Russian Federation

Poster # 1-53

The model for in-plane and out-of-plane growth regimes of III-V nanowires

Yury Berdnikov

St. Petersburg, Russian Federation

Poster # 1-54

Dissociation and synthesis of target components during laser ablation of LiNbO₃

Zakhar Vakulov

Taganrog, Russian Federation

Poster # 1-55

Arsenic background pressure effect on In droplet morphology

Ilya Mikhaylin

Taganrog, Russian Federation

Poster # 1-56

MBE Growth and Properties of InGaN Nanowires and Nanoflowers on Si substrate

Rodion Reznik

St. Petersburg, Russian Federation

Poster # 1-57

Fabrication and luminescent properties of (In,Fe)Sb/GaAs/InGaAs diodes

Mikhail Ved

Nizhny Novgorod, Russian Federation

Poster # 1-58

ZnO thin films synthesis by RF magnetron sputtering deposition

Vladislav Gridchin

St. Petersburg, Russian Federation

Poster # 1-59

Simulation of AlGaAs-heterostructures CVC kinetic due to degradation

Evgeny Kuimov

Moscow, Russian Federation

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Optical activity and SEM of chiral chitosan ascorbates

Olga Malinkina

Saratov, Russian Federation

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Transmission electron microscopy of crystallization centers in antimony thin films with the use of the bend-contour atlas

Aleksandra Bokuniaeva

Ekaterinburg, Russian Federation

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Influence of elastic stresses on the formation of axial heterostructures in catalytic ternary III-V nanowires

Egor Leshchenko

St. Petersburg, Russian Federation

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Role of the wetting layer in the crystallization stage during droplet epitaxy of InAs/GaAs nanostructures

Sergey Balakirev

Taganrog, Russian Federation

Poster # 1-65

Quantifying absorption and scattering contributions to light attenuation by nanodiamonds

Nadezhda Besedina

St. Petersburg, Russian Federation

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Surface Fermi level pinning in GaP nanowires

Vladislav Sharov

St. Petersburg, Russian Federation

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Formation of two-dimensional nanostructures (closed hollow shells) at laser ablation of sapphire

Ilya Stepanov

Moscow, Russian Federation

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MISFIT STRESS RELAXATION BY DISLOCATION LOOPS IN CORE-SHELL NANOWIRES

Anton Chernakov

St. Petersburg, Russian Federation

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Laser-induced modification and formation of periodic surface structures of amorphous Ge₂Sb₂Te₅ thin films

Petr Lazarenko

Zelenograd, Russian Federation

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Modelling growth of catalyst-free InAs_{1-x}Sb_x nanowires

Andrei Sokolovskii

St. Petersburg, Russian Federation

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Photovoltaic properties of InP NWs/p-Si heterostructure

Konstantin Kotlyar

St. Petersburg, Russian Federation

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Raman analysis of graphene on SiC

Andrey Babichev

St. Petersburg, Russian Federation

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Synthesis of zinc oxide nanowires using cetyltrimethylammonium bromide

Anton Bobkov

St. Petersburg, Russian Federation

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On the band structure of disclinated graphene

Mikhail Rozhkov

St. Petersburg, Russian Federation

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Tensile Growth Stress in HVPE GaN films

Andrey Leonidov

St. Petersburg, Russian Federation

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Synthesis of inorganic mixed-halide perovskites by a chemical vapour anion exchange method

Tatiana Liashenko

St. Petersburg, Russian Federation

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Structural And Optical Properties Algaas Nanowires Grown By Mbe On Si(111) Substrate

Andrew Vershinin

St. Petersburg, Russian Federation

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Investigation of the Mechanisms of Functioning and the Methods of Creating Memristor Structures Based on Nanocrystalline ZnO Films

Michael Ivonin

Moscow, Russian Federation

Poster # 1-79

Terahertz radiation generated by layered transition metal dichalcogenides MoS₂, WS₂ and their alloy

Mo_{0,5}W_{0,5}S₂

Anastasia Gorbatova

Moscow, Russian Federation

Poster # 1-80

Graphene and 2D Materials Production at University of Exeter Centre for Graphene Science

Ineta Grikalaite

Exeter, UK

2. Nanobiotechnology, Biophysics and Biophotonics

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Two-photon fluorescence anisotropy in tryptophan in solutions with different viscosity and polarity

Nikolay Bezverkhni

St. Petersburg, Russian Federation

Poster # 2-2

The method of intracellular tracking particle in vivo creation with femtosecond laser pulses

Alina Osychenko

Moscow, Russian Federation

Poster # 2-3

Reduced graphene oxide based nanobiocomposite as basis for flexible biosensors

Ivan Komarov

Moscow, Russian Federation

Poster # 2-4

Dynamic characteristics of totally glycosylated human glucocerebrosidase carrying N370S substitution

Aleksandr Cheblov

St. Petersburg, Russian Federation

Poster # 2-5

Nondestructive 3D-evaluation of human dentin by microtomography using synchrotron radiation

Zhanna Gudkina

St. Petersburg, Russian Federation

Poster # 2-6

A new method for monitoring the health condition based on nondestructive signals of laser radiation absorption and scattering

Roman Davydov

St. Petersburg, Russian Federation

Poster # 2-7

Improvement of properties of cellulose dielectrics by their structure modification with nanocellulose produced of wastes of agricultural crops

Anna Stolpner

St. Petersburg, Russian Federation

Poster # 2-8

Synthesis of glycidoxy spacer on the surface of magnetic nanoparticles and immobilization of albumin

Vitaly Zorin

St. Petersburg, Russian Federation

Poster # 2-9

CeO₂ Nanoparticles as prooxidant nanozyme

Madina Sozarukova

Moscow, Russian Federation

Poster # 2-10

Study of refractive index of human stomach cancer tissue in THz frequency range

Anna Kuzikova

St. Petersburg, Russian Federation

Poster # 2-11

Highly hydrophilic and stable polylactic acid surface achieved by argon plasma treatment

Yury Polikarpov

Moscow, Russian Federation

Poster # 2-12

Optical spectral sensor for the assessment of uric acid kinetics during hemodialysis treatment

Oxana Stepanova

St. Petersburg, Russian Federation

Poster # 2-13

Age and gender recognition from speech signals

Ara Assim

St. Petersburg, Russian Federation

Poster # 2-14

Shellac hologram

Alexandra Toropova

St. Petersburg, Russian Federation

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Automated pulmonary nodule detection system in computed tomography images based on Active-contour and SVM classification algorithm

Faridoddin Shariaty

St. Petersburg, Russian Federation

Poster # 2-16

The development of microfluidics-assisted fabrication of cell culture droplet platform

Olga Tapinova

St. Petersburg, Russian Federation

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Synthesis and study of the optical properties of archeorodopsin-3 (Arch3) and its mutants in various detergents

Vasily Akulov

St. Petersburg, Russian Federation

Poster # 2-18

Study of human skin radiation in the terahertz frequency range

Kseniya Baksheeva

Moscow, Russian Federation

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Semiconductor resonant all-optical temperature sensor and thermal release trigger of encapsulated anti-cancer drugs for in vitro studies

George Zograf

St. Petersburg, Russian Federation

Poster # 2-20

Development of a measuring device for the study of thermal processes during the polymerase chain reaction

Vladislav Reznik

St. Petersburg, Russian Federation

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Fluorescent detection upon droplet amplification of nucleic acids

Aleksandra Tupik

St. Petersburg, Russian Federation

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Infection of aerosol concentration on the radon decay products fractions

Hyam Khalaf

Ekaterinburg, Egypt

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Test object as a subject of biometric studies of eye reaction

Narkiza Bikberdina

Khanty-Mansiysk, Russian Federation

Poster # 2-24

The empowerment of biometric systems of psychophysical research

Daria Bobrova

Khanty-Mansiysk, Russian Federation

Poster # 2-25

Cell-Substrate Lift-Off Lithography

Daniil Stupin

St. Petersburg, Russian Federation

Poster # 2-26

Formation of Structurally Ordered Nanoscale Complexes of DNA with Nuclear Proteins HMGB₁ and H₁

Nikolay Romanov

St. Petersburg, Russian Federation

3. Lasers, solar cells and other optoelectronic devices

Poster # 3-1

Polarization sensitivity of ZnSe single crystals based structures

Igor Zharikov

St. Petersburg, Russian Federation

Poster # 3-2

Semiconductor InAs/InGaAs p-doped and undoped quantum dot (QD) lasers of various geometries

Vladimir Korenev

St. Petersburg, Russian Federation

Poster # 3-3

Simulation of a THz radiation source on AlGaAs/GaAs superlattices

Alexander Dashkov

St. Petersburg, Russian Federation

Poster # 3-4

Spectral-luminescent properties of CaF₂-SrF₂: Er and CaF₂-SrF₂: Ho single crystals

Alexander Ermakov

Saransk, Russian Federation

Poster # 3-5

Memristive properties of solar cells based on perovskite-polymer composite

Mikhail Masharin

St. Petersburg, Russian Federation

Poster # 3-6

Ultraviolet cathodoluminescence of pure zinc aluminate ZnAl₂O₄

Stepan Lisovskii

Dolgoprudny, Russian Federation

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The study of the optical properties of transparent conductive oxides SnO₂: Sb, obtained by spray pyrolysis

Kirill Nikolaev

Penza, Russian Federation

Poster # 3-8

Design and investigation of GaPAsN/Si light-emitting diode

Aleksandra Lazarenko

St. Petersburg, Russian Federation

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Measurement and analysis of the recombination coefficients distribution on the area of light-emitting InGaN/GaN heterostructures

Ilya Frolov

Ulyanovsk, Russian Federation

Poster # 3-10

Nanosphere lithography on silicon oxide for high aspect ratio cryo etching of vertically-align silicon structures

Ivan Morozov

St. Petersburg, Russian Federation

Poster # 3-11

Performance of InGaAs metamorphic laser power converters at different conditions

Nikolay Kalyuzhnyy

St. Petersburg, Russian Federation

Poster # 3-12

Spectral method for determining quantum wells thickness and the composition in strained heterostructures GaAs/InGaAs

Nikolay Pavlov

St. Petersburg, Russian Federation

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Simulation of current-voltage and power- voltage characteristics of «space» porous silicon solar cells

Ivan Shishkin

Samara, Russian Federation

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Relation between energy gap and saturation currents in GaInAs homo p-n junctions.

Mikhail Mintairov

St. Petersburg, Russian Federation

Poster # 3-15

On-off keying modulation based wireless data transmission VLC network via LED illuminator and mobile device

Alexey Borodkin

St. Petersburg, Russian Federation

Poster # 3-16

In_{0.8}Ga_{0.2}As quantum dots in GaAs photovoltaic convertors: characterization of optical and physical properties

Roman Salii

St. Petersburg, Russian Federation

Poster # 3-17

Experimental study of power-limiting factors of 1.1 μm range edge-emitting lasers based on InGaAs/GaAs quantum well-dot nanostructures

Artem Serin

St. Petersburg, Russian Federation

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Development of antireflective coatings based on SiO₂/Si₃N₄ on textured silicon for heterojunction solar cells

Yury Nevenchanny

St. Petersburg, Russian Federation

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Experimental study of self-induced transparency mode- locking in Ti:sapphire laser

Rostislav Arkhipov

St. Petersburg, Russian Federation

Poster # 3-20

The influence of the method of applying a smearing layer on the surface characteristics of steel X₁₂CrNiTi₁₈₋₁₀ after laser alloying

Vitaly Proskuryakov

Saratov, Russian Federation

Poster # 3-21

Temperature performance of InGaAs/InGaAlAs laser diodes with PhT⁶-doping active region

Stanislav Rochas

St. Petersburg, Russian Federation

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The effect of pretreatment of X12CrNiTi18-10 steel on surface characteristics as a result of laser hardening

Nikolay Makhov

Saratov, Russian Federation

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Thermal stability of single-walled carbon nanotubes saturable absorber for a fiber laser

Diana Galiakhmetova

Moscow, Russian Federation

Poster # 3-24

NdYAG surface modification of ZnO for solar cells

Lada Ignateva

St. Petersburg, Russian Federation

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AlGaAs/GaAs solar cell with CNT transport layer: numerical simulation and experimental approach

Sergei Raudik

St. Petersburg, Russian Federation

Poster # 3-26

Φ-OTDR based on tunable Yb-Er:phosphate glass laser

Tatyana Choban

Moscow, Russian Federation

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Stabilizing effect of injection in broad-area lasers

Elizaveta Yarunova

Samara, Russian Federation

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Investigation of ITO magnetron deposition effect on carrier lifetime degradation in silicon wafer

Dmitrii Kudriashov

St. Petersburg, Russian Federation

Poster # 3-29

Investigation of cryogenic dry etching of silicon on I-V curves of Schottky diodes

Alina Maximova

St. Petersburg, Russian Federation

Poster # 3-30

Shapes of polarization sensitive photocurrent pulses in Ag/Pd nanocomposite films: influence of burning temperature

Aleksandr Saushin

Izhevsk, Russian Federation

Poster # 3-31

New optical method for studying a magnetic track from a moving object

Semen Logunov

St. Petersburg, Russian Federation

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Direct GaInP-to-Ge optical interaction in 3J solar cell with thinned intermediate GaAs subcell

Svetlana Levina

St. Petersburg, Russian Federation

Poster # 3-33

Maria Muretova

St. Petersburg, Russian Federation

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Organic light-emitting diodes with colloidal quantum dots in the active layer

Alexander Degterev

St. Petersburg, Russian Federation

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Transverse mode switching in quantum well-dot lasers triggered by gain saturation

Anton Kharchenko

St. Petersburg, Russian Federation

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Investigation of the efficiency of microlasers based on quantum dots

Eduard Moiseev

St. Petersburg, Russian Federation

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Capacitance characterization of GaP/Si superlattice grown by time-modulated PECVD

Artem Baranov

St. Petersburg, Russian Federation

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Current induced mode competition in microdisk lasers

Ivan Boikov

St. Petersburg, Russian Federation

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Specific contact resistance measurements of the screen-printed front side Ag contacts for GaP/Si heterostructures by TLM method

Kirill Zelentsov

St. Petersburg, Russian Federation