

International Conference PhysicA.SPb/2021

Journal of Physics: Conference Series Volume 2103

St. Petersburg, Russia
18 – 22 October 2021

Part 1 of 2

ISBN: 978-1-7138-5074-8
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.

This work is licensed under a Creative Commons Attribution 3.0 International Licence.
Licence details: <http://creativecommons.org/licenses/by/3.0/>.

No changes have been made to the content of these proceedings. There may be changes to pagination and minor adjustments for aesthetics.

Printed with permission by Curran Associates, Inc. (2023)

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: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

PART 1

International Conference PhysicA.SPb/2021

Peer Review Declaration

Geant4 Simulation of the Tunka-Grande Experiment	1
<i>R Monkhoev, M Ternovoy, I Astapov, P Bezyazeekov, A Borodin, M Brueckner, N Budnev, A Chiavassa, A Dyachok, A Gafarov, A Garmash, V Grebenyuk, O Gress, T Gress, A Grinyuk, O Grishin, D Horns, A Igoshin, A Ivanova, Al Ivanova, N Kalmykov, V Kindin, S Kiryuhin, R Kokoulin, K Kompaniets, E Korosteleva, V Kozhin, E Kravchenko, A Kryukov, L Kuzmichev, A Lagutin, Y Lemeshov, B Lubsandorzhiev, N Lubsandorzhiev, D Lukyantsev, S Malakhov, R Mirgazov, R Mirzoyan, E Osipova, A Pakhorukov, L Pankov, A Petrukhin, I Poddubnyi, V Poleschuk, V Ponomareva, M Popesku, E Popova, A Porelli, E Postnikov, V Prosin, V Ptuskin, A Pushnin, R Raikin, G Rubtsov, E Ryabov, Y Sagan, V Samoliga, B Sabirov, A Silaev, A Sidorenkov, S Sinegovsky, A Skurikhin, V Slunecka, A Sokolov, Y Suvorkin, L Sveshnikova, V Tabolenko, B Tarashchansky, L Tkachev, M Tluczykont, A Tanaev, R Togoo, N Ushakov, A Vaidyanathan, P Volchugov, D Voronin, R Wischnewski, A Zagorodnikov, A Zhaglova, D Zhurov, I Yashin</i>	
Breaking Stress of Coulomb Crystals in the Neutron Star Crust.....	6
<i>A A Kozhberov</i>	
Investigation of Faddeev Variant of Embedding Theory	10
<i>S. S. Kuptsov, S. A. Paston</i>	
Non-Spherical Nucleon Clusters in the Mantle of a Neutron Star: CLDM Based on Skyrme-Type Forces	16
<i>N A Zemlyakov, A I Chugunov, N N Shchecchin</i>	
Detailed Study of the GRB 190114C Spectral Lags in the Energy Range of 5 keV – 2 MeV	21
<i>V A Dranevich, P B Dmitriev</i>	
A Search for Variability of Hard X-Ray Emission from the Vela Pulsar Wind Nebula	27
<i>A M Krassilchchikov, M S Pshirkov, A M Bykov</i>	
Reconstruction of Solar Activity Based on 14C and Other Isotope Profiles in Lunar Regolith	33
<i>D Frolov, A Pavlov, V Ostryakov, A Konstantinov, G Vasilyev, I Kudryavtsev, V Dergachev</i>	
Modeling of Cosmic Ray 22Ne-Enrichment in Compact Star Clusters	39
<i>M E Kalyashova, A M Bykov</i>	
On Electron Acceleration by Mildly-Relativistic Shocks: PIC Simulations.....	44
<i>V I Romansky, A M Bykov, S M Osipov</i>	
Influence of the Temperature of the Photosphere and Deeper Layers of the Sun on the Spectra of Gamma Quanta with Energies Above 511 keV During Solar Flares	49
<i>G I Vasilyev</i>	
Beryllium Isotopes in the PAMELA Experiment	54
<i>E A Bogomolov, G I Vasilyev, W Menn</i>	

The Candidates for Class I Methanol Masers.....	59
<i>A V Nesterenok</i>	
Wind of a Young Massive Star Colliding with a Supernova Remnant Shell	65
<i>D V Badmaev, A M Bykov</i>	
Self-Consistent Monte Carlo Model of Particle Acceleration by Relativistic Shocks	70
<i>S M Osipov, A M Bykov, M Lemoine</i>	
Interaction of Rotational Discontinuities with Energetic Ions in the Precursor of the Earth's Bow Shock.....	75
<i>Julia A Kropotina, Anton V. Artemyev, Andrei M. Bykov, Dmitri L. Vainchtein</i>	
Magnetic Turbulence in Supernova Remnants: Perspective for IXPE Polarimeter.....	81
<i>A M Bykov, Y A Uvarov</i>	
The Analysis of Titan's Physical Surface Using Multifractal Geometry Methods	87
<i>Carlos De La Morena, Y A Nefedyev, A O Andreev, E N Ahmedshina, A A Arkhipova, E V Kronrod, N Y Demina</i>	
Stochastic Analysis of Dynamic Processes in the Solar Activity.....	93
<i>E Y Kostina, E V Khusaenova, A O Andreev, R Hudec, Y A Nefedyev</i>	
Fundamental Parameters Modeling for the Lunar Telescope	99
<i>A O Andreev, N K Petrova, Y A Nefedyev, A A Zagidullin</i>	
Slow Motion Pulsar Wind Nebulae	105
<i>K P Levenfish, G A Ponomaryov, A E Petrov, A M Bykov, A M Krassilchikov</i>	
Jet and Counter-Jet in Transonic Pulsar Wind Nebulae.....	111
<i>G A Ponomaryov, K P Levenfish, A E Petrov</i>	
Structural Analysis of the Comet 45P/Honda Based on Isophote Modeling	117
<i>K O Churkin, A O Andreev, Y A Nefedyev, A A Arkhipova, N Y Demina</i>	
On the Possible Influence of Solar 11-Year Cycle on a Climate of Southern Fennoscandia	122
<i>M G Ogurtsov</i>	
Analysis of Modern Observations of Meteor Showers Based on PTM Methods	126
<i>A A Sharafutdinova, A O Andreev, Y A Nefedyev, R Hudec, N Y Demina</i>	
Changes in Solar Activity Based on Radiocarbon Data and Climate Variations in the Interval 8000 - 1000 BC.....	132
<i>V A Dergachev, I V Kudryavtsev</i>	
Development of Detector Pixels Based on Silicon Photomultipliers for the Cherenkov Gamma-Ray Telescope TAIGA-IACT	137
<i>A A Bogdanov, Yu V Tuboltsev, Yu V Chichagov, A M Krassilchikov</i>	
Unusual Asteroid 2020 SO: Astrometric Investigation of the American Rocket Booster that Returned to near-Earth Space	143
<i>S N Petrova, A V Devyatkin, D L Gorshanov, V N L'vov, S A Rusov</i>	
Constraints on the Temperature-Density Relation of the Intergalactic Medium with Non-Negligible Absorber Spatial Structure	147
<i>K N Telikova, P S Shternin, S A Balashev</i>	

Influence of Non-Gravitational Effects on the Centaur Upper Stage of the Surveyor 2 Spacecraft.....	153
<i>A A Martyusheva, A V Devyatkin</i>	
Analytic Approximations to Photoabsorption Cross Sections of Once-Ionized Helium in Magnetar Atmospheres	157
<i>I V Demidov, A Y Potekhin</i>	
Meteorite Hazard Model for a Space Mission to Mars.....	163
<i>N Y Demina, A O Andreev, Y A Nefedyev</i>	
Composition of the Lunar Mantle for Lower Mantle High-Velocity Seismic Model.....	170
<i>E V Kronrod, V A Kronrod, O L Kuskov, Y A Nefedyev, A O Andreev</i>	
3D Printing Technologies for Creating Models and Nozzles in an Aerodynamic Shock Tunnel Experiment	177
<i>M A Kotov, N A Monakhov, S A Poniaev, P A Popov, K V Tverdokhlebov</i>	
The Influence of Small-Scale Magnetic Field on the Heating of J0250+5854 Polar Cap	185
<i>D P Barsukov, A A Matevosyan, I K Morozov, A N Popov, M V Vorontsov</i>	
Studying the Fractal Properties of Ceres	191
<i>R R Mubarakshina, A O Andreev, Y A Nefedyev, A A Arkhipova, E V Kronrod, N Y Demina</i>	
Measurement of the Photon Detection Efficiency of Silicon Photomultipliers for the New Detector Cluster of the Cherenkov Gamma-Ray Telescope TAIGA-IACT Equipped with UV Filters	196
<i>D O Kuleshov, V A Simonyan, A A Bogdanov, E E Kholupenko, Yu V Tuboltsev, Yu V Chichagov, A M Krassilchchikov</i>	
Search for Possible Connections of the h-Virginids Meteor Shower with near-Earth Asteroids	200
<i>M V Sergienko, M G Sokolova, A O Andreev, Y A Nefedyev</i>	
Long-Term Evolution of Coronal Holes on the Sun and Occurrence Frequencies of Magnetic Storms with Gradual Commencements	207
<i>S Veretenenko, M Ogurtsov, V Obrikho, A Tlatov</i>	
Recent Acceleration of the Earth Rotation in the Summer of 2020: Possible Causes and Effects	213
<i>D A Trofimov, S D Petrov, P V Movsesyan, K V Zheltova, V I Kiyaev</i>	
Solar Coronal Rotation According to Soft X-Ray Solar Radiation During the 22nd, 23rd, and 24th Solar Cycles.....	219
<i>P B Dmitriev</i>	
Major Merging of Galaxies in Multicomponent Numerical Models: Mass Loss and Exchange	225
<i>Alexander Titov, Alexander Khoperskov, Sergey Khrapov</i>	
The Effect of Gamma Quanta Absorption Due to Interaction with Thermal Bremsstrahlung Photons of Hot Gas in Galaxy Clusters.....	231
<i>A N Popov, D P Barsukov, A V Ivanchik, S V Bobashev</i>	
Dynamics of Langmuir Waves Due to Induced Scattering on Thermal Electrons of Solar Plasma	237
<i>I V Kudryavtsev</i>	
The Search for Statistical Patterns of Pathological Activity in Human EEG Signals in Focal Epilepsy	241
<i>V A Yunusov, S A Demin, O Y Panischev, N Y Demina</i>	

The Impact of Laser-Induced Thermocoagulation Effects on the Optical Spectra of Brain Tissues	248
<i>E Kh Israpov, K M Giraev, N A Ashurbekov, K M Rabadanov, M A Magomedov</i>	
FNS-Parameterization of Human Magnetoencephalograms for the Diagnosis of Photosensitive Epilepsy.....	254
<i>R R Khairullina, S A Demin, V A Yunusov, O Y Panischev</i>	
The Use of the Formalism of the Complex Electrical Module in the Monitoring of Oncological Diseases.....	261
<i>Zh A Salnikova, R A Castro</i>	
Molecular Modeling of Post-Diffusion Stage of Biotissue Optical Clearing Under Effect of Iohexol Aqueous Solution	266
<i>I T Shagautdinova, A M Likhter, K V Berezin, K N Dvoretsky, V V Nечаев, V V Tuchin</i>	
Study of Low-Temperature Exposure on Biotissue Using an Elongated Cryoapplicator.....	271
<i>A V Pushkarev, N A Andreev</i>	
Comparative Analysis of the Secondary Structure of Non-Histone Chromatin Proteins HMGB1 and HMGB2.....	277
<i>E V Chikhirzhina, D N Osinnikova, A M Polyanichko</i>	
Surface Modification of Polyimide Film in the Barrier Discharge for Cellular Technologies	281
<i>A M Kamalov, K S Celujko, K A Kolbe, N V Smirnova, M E Borisova, P N Bondarenko, G V Vaganov, A L Didenko, V E Yudin</i>	
Analysis of Infrared Spectra of Blood Serum of Patients with Multiple Myeloma.....	287
<i>D A Chernyshev, E S Mikhalets, E A Telnaya, L V Plotnikova, A D Garifullin, A Y Kuvshinov, S V Voloshin, A M Polyanichko</i>	
Protein Secondary Structure Analysis of Serum from Patients with Oncohematological Diseases	292
<i>E S Mikhalets, D A Chernyshev, E A Telnaya, L V Plotnikova, A D Garifullin, A Y Kuvshinov, S V Voloshin, A M Polyanichko</i>	
Research of Replication Accuracy in Some Elastomer Materials with Different Young's Modulus	297
<i>N N Germash, N A Esikova, P K Afonicheva, A A Evstrapov</i>	
Possibility of Raman Spectroscopy Method Use for Evaluation of Periodontitis-Affected Tooth Enamel Before and After Open Curettage	303
<i>P E Timchenko, E V Timchenko, I V Bazhutova, O O Frolov, L T Volova, A Y Ionov</i>	
Physical Model for Effects of Microwaves on Nucleoids in Living Cells: Role of Carrier Frequency, Modulation and DC and AC Magnetic Field	309
<i>A Y Matronchik, I Y Belyaev</i>	
Analytical Determination of DNA Melting Characteristic Parameters Using the Optimal Degree Polynomial Regression Model.....	313
<i>D A Belov, A L Bulyanitsa, N A Korneva, A S Aldekeeva, Yu V Belov</i>	
New Possibilities of Collectors with Azimuthal Magnetic Field for Multistage Energy Recovery in Gyrotrons.....	319
<i>O I Louksha, P A Trofimov, B D Usherenko</i>	
Performance Characteristics of Bistable Active Ring Resonators Based on Ferrite Films.....	324
<i>V V Vitko, R V Haponchyk, A A Nikitin, A B Ustinov</i>	

Generation in the Regime with Three Resonance Frequencies	329
<i>Yu S Oparina, A V Savilov</i>	
Generation of Ultrashort Pulses in the THz Frequency Range	335
<i>Yu S Oparina, A V Savilov</i>	
Non-Equilibrium Methods for Synthesis and Modification of Gallium Oxide	341
<i>A A Nikolskaya, D S Korolev, A N Mikhaylov, T D Mullagaliev, Yu I Chigirinsky, A I Belov, A V Nezhdanov, V N Trushin, D E Nikolichev, A V Almaev, R Giulian, M Kumar, D I Tetelbaum</i>	
Parameterization of Charge Transport Process with Avalanche Multiplication in Irradiated Si P-I-N Structures at T = 1.9 K.....	346
<i>A S Shepelev, V K Eremin, E M Verbitskaya</i>	
Local Stress Fields in Solids Estimated by Acoustical Emission Method	352
<i>V L Hilarov, E E Damaskinskaya</i>	
Cathodoluminescence of Carbon-Related Defects in Hexagonal Boron Nitride.....	357
<i>Yu V Petrov, O F Vyvenko, O A Gogina, K Bolotin, S Kovalchuk, K Watanabe, T Taniguchi</i>	
In-Situ Estimation of Defect Volume from Parameters of Acoustic Emission Signals.....	363
<i>E E Damaskinskaya, V L Hilarov, I A Panteleev, D V Korost, K A Damaskinskii</i>	
Kelvin-Probe Microscopy as a Technique of Estimation of the Charge Traps Saturation Time.....	369
<i>P A Dementev, E V Dementeva</i>	
Prediction of Radiation Degradation of Si Detectors Irradiated by Relativistic Ions of Different Masses	374
<i>D Mitina, E Verbitskaya, I Eremin, N Fadeeva</i>	
Synthesis and Structural Characterization of Fe _{1-X} M _x BO ₃ (M _x = Al, Sc) Single Crystals.....	378
<i>Yu Mogilenev, K Seleznyova, S Yagupov, K Seleznev, I Nauhatsky, E Maksimova, M Strugatsky</i>	
Raman Scattering and Luminescence in Single Crystals of the Amino Acid Glycine C ₂ H ₅ NO ₂ with an Admixture of Croconic Acid C ₅ H ₂ O ₅	383
<i>E V Balashova, A N Smirnov, Yu V Davydov, B B Krichevskov, A N Starukhin</i>	
Interaction of Sulfur with Impurities in Bcc Iron	389
<i>A V Verkhovykh, A A Mirzoev, Yu K Okishev, N S Dyuryagina</i>	
Development and Synthesis of Orthophosphate Single Crystals of YPO ₄ and LuP ₄ Activated with Er ³⁺	394
<i>E A Silantieva, M V Zamoryanskaya, B E Burakov</i>	
Study of the Effect of Nitrogen and Hydrogen on the Structure and Magnetic Properties of (Sm, Er) ₂ Fe ₁₇ Alloys	399
<i>I S Tereshina, S V Veselova, O V Akimova, M A Paukov, A Yu Karpenkov, E V Argunov, V N Verbetsky</i>	
Photo-E.m.f. at a Metal/Layered n-InSe Semiconductor Contact Under Heating Conditions of Current Carriers by an Electric Field.....	405
<i>A S Abdinov, R F Babayeva</i>	
Low-Temperature Degradation Resistance and Plastic Deformation of ATZ Ceramics Stabilized by CaO.....	410
<i>AA Dmitrievskiy, DG Zhigacheva, VM Vasyukov, PN Ovchinnikov</i>	

Engineering of Defects in Fast Neutron Irradiated Synthetic Diamonds.....	415
<i>A A Khomich, A I Kovalev, R A Khmelnitsky, A V Khomich, A F Popovich, V G Ralchenko</i>	
On Quantum Analogue of Instable Oscillating States of an Inverted Oscillator in External Poly-Harmonic Field.....	421
<i>V Chistyakov</i>	
Regular Electrically Charged Objects in Nonlinear Electrodynamics Coupled to Gravity	426
<i>Irina Dymnikova, Evgeny Galaktionov</i>	
Stability of Supratransmission Waves in a Crystal of A3B Stoichiometry Upon Interaction with Single Dislocations.....	432
<i>I S Lutsenko, P V Zakharov, M D Starostenkov, S V Dmitriev, E A Korznikova</i>	
Application of the Liquid Bridges Theory to Find the Melt Menisci Shape When Growing Cylindrical Crystals.....	437
<i>E V Galaktionov, S I Bakholdin, N E Galaktionova, E A Tropp</i>	
Simulation of Pulse Wave Propagation Using One-Dimensional Models of Hemodynamics.....	443
<i>G V Krivovichev, N V Egorov</i>	
Magnetic Drive Micro/Nanomotor Model.....	450
<i>S I Martynov, L Y Tkach</i>	
Simulation of Heat Transfer Processes During the Growth of Crystals of the NiFeGaCo Alloy	457
<i>M G Vasil'ev, V M Krymov, Yu G Nosov, S I Bakholdin</i>	
The Deceleration of Small Charged Bodies in a Rarefied Plasma.....	463
<i>Yu F Gunko, N A Gunko</i>	
Measurements of Pyroelectric Coefficients of BT and BST Ceramics.....	469
<i>A P Burovikhin, I L Mylnikov, A I Dedyk, P Yu Belyavskiy, Yu V Pavlova, O V Pakhomov, A A Ivanov</i>	
The Dependence of Surface Morphology on the Growth Temperature of the Pb0.7Sn0.3Te/Si(111) Topological Insulator Thin Films	475
<i>A K Kaveev, D N Bondarenko, O E Tereshchenko</i>	
Peculiarities of the Memory State Formation in Thin Ge2Sb2Te5 Films.....	480
<i>S A Fefelov, L P Kazakova, N A Bogoslovskiy, A O Yakubov, A B Bylev</i>	
Investigation of Defects in Structures Based on BP/Si Heterojunction.....	484
<i>A A Maksimova, A I Baranov, A V Uvarov, D A Kudryashov, A S Gudovskikh</i>	
Critical Behavior of a Two-Dimensional Ferromagnetic Film on a Non-Magnetic Substrate.....	488
<i>S V Belim, I V Bychkov, I V Maltsev</i>	
Mechanical Frictional Scanning Probe Lithography of TMDCs	494
<i>B R Borodin, F A Benimetskiy, P A Alekseev</i>	
The Influence of Conformational Defects on the Development of Structural Phase Transition in Tetracosane C24H50	498
<i>S A Gureva, V A Marikhin, L P Myasnikova, B Z Volchek, D A Medvedeva</i>	
Study of Ga ₂ O ₃ Deposition by MOCVD.....	504
<i>W V Lundin, S N Rodin, A V Sakharov, M A Yagovkina, A N Smirnov, I A Eliseyev, V Yu Davydov, A F Tsatsulnikov</i>	

Raman Studies of Amorphous Nanocarbon Obtained by Laser Sputtering.....	508
<i>I A Eliseyev, A N Smirnov, V Yu Davydov, A V Platonov, D A Yavsin, S A Gurevich</i>	
Thermal Conductivity of PCM Materials Based on a Composite Consisting of N-Alkane and Nanoscale Additives	514
<i>A K Borisov, V M Egorov, V A Marikhin, L P Myasnikova</i>	
The Nanostructuring of Ultra-High-Molecular-Weight Polyethylene in Thermal and Mechanical Fields as Revealed by DSC	519
<i>L P Myasnikova, A K Borisov, Yu M Boiko, A P Borsenko, V F Drobot'ko, V M Egorov, E M Ivankova, E I Radovanova, V A Marikhin</i>	
Method for Critical Current Angular Dependencies Analysis of Superconducting Tapes.....	525
<i>V V Guryev, S V Shavkin, V S Kruglov</i>	
Structure of GaN Grown from Vapour Phase on a Seeded Layer of Gallium Melt Formed on a Boron Nitride Ceramic Substrate	531
<i>M G Myntbaeva</i>	
Effect of Wet KOH Etching on Structural Properties of GaN Nanowires Grown on Patterned SiO _x /Si Substrates.....	535
<i>V V Lendyashova, K P Kotlyar, V O Gridchin, R R Reznik, A I Lihachev, I P Soshnikov, G E Cirlin</i>	
Effect of SFE on the Evolution of Crystallographic Texture in Cu-Zn Alloys Subjected to Severe Plastic Deformation	539
<i>L I Zaynullina, V D Situdikov, G F Situdikova, I V Alexandrov</i>	
Cyanate Ester Resin/Silica Subnanocomposites and Their Superiority Over Nanocomposites Due to Fundamental Role of Constrained Interfacial Dynamics.....	544
<i>V A Bershtein, A M Fainleib, D A Kirilenko, P N Yakushev</i>	
Study of Elastic Deformations in Tapered Nanowires.....	550
<i>M S Dunaevskiy, P A Alekseev</i>	
Spectroscopic Evidence of Tunnel Coupling Between CdTe Quantum Wells in the CdTe/ZnTe Heterostructures.....	554
<i>V Agekyan, N Filosofov, G Karczewski, A Serov, I Shtrom, A Reznitsky</i>	
Investigation of Electrolysis-Related Modification of Graphene Films in Biosensors.....	559
<i>I A Eliseyev, A S Usikov, S P Lebedev, A D Roenkov, M V Puzyk, Yu M Makarov, E V Gushchina, G A Oganesyan, A A Voronina, E I Shabunina, N M Shmidt</i>	
The Study of the Charge Relaxation Kinetics in Polyethylene with Nanofillers.....	566
<i>A A Pavlov, A M Kamalov, M E Borisova, G V Greshnyakov, G V Vaganov</i>	
Investigation of HIT Solar Cells Low Frequency Noise Characteristics	572
<i>A V Ermachikhin, Y V Vorobiov, E P Trusov, V G Litvinov</i>	
Study of the Optical Properties of a NiO/AuNP/NiO Nanocomposite Film Transferred onto a Transparent Flexible Substrate	579
<i>Y Enns, A Kondrateva, I Komarevtsev, A Kazakin, E Vyacheslavova, A Kuznetsov, V D Andreeva, M Mishin</i>	
Wafer Fusion Technique Features for near-IR Laser Sources.....	584
<i>S S Rochas, I I Novikov, L Ya Karachinsky, A V Babichev, S A Blokhin, V N Nevedomskii, K O Voropaev, A Yu Egorov</i>	

Influence of the Magnetic Field on the Formation and Properties of Polyvinyl Alcohol - Multi-Walled Carbon Nanotube Nanocomposites	588
<i>S V Vasin, M S Efimov, A M Nizametdinov, V A Sergeev</i>	
Clustering in Thin Silver Films Upon Heating	592
<i>V A Kazakov, A G Razina, A V Smirnov, A I Vasilev</i>	
Fabrication and Complex Investigation of LAFE Based on CNT by PECVD with Island Catalyst	597
<i>M A Chumak, A A Rokacheva, L A Filatov, A G Kolosko, S V Filippov, E O Popov</i>	
Construction of Barrier Heterostructures Based on Carbon and Organometallic Compounds.....	604
<i>A S Mazinov, V S Gurchenko, A S Tyutyunik, V Y Ilina, A I Dmitriev</i>	
Creation of Micro-And Nanochannels on the Surface of Silicon Chips by Lithography Methods and Investigation of Ion Transport in Channel	610
<i>Polina Afonicheva, Denis Lebedev, Anton Bukatin, Ivan Mukhin, Anatoly Evstrapov</i>	
Ultra-Heat Resistant Nanocomposites Based on Heterocyclic Networks: Structure, Properties, Origin of Thermal Stability	616
<i>P N Yakushev, V A Bershtein, A M Fainleib, D A Kirilenko, O G Melnychuk</i>	
Study of Optical and Luminescent Properties of the Epitaxial Garnet Films Doped with Ce ³⁺	622
<i>N V Vasil'eva, D A Spassky, Sh Kurosawa, S I Omelkov, V V Kochurikhin, D A Vasil'ev</i>	
Study of the Titanium VT1-0 Surface Degradation After Cyclic Loading in Different Structural States, Including Ones When Coatings Are Formed by Micro-Arc Oxidation.....	628
<i>M V Narykova, A G Kadomtsev, V I Betekhtin, Yu R Kolobov, J Dvorak, V Sklenicka</i>	
Methods for Measuring the Local Emission Characteristics of CNT Based Multi-Tip Emitters	633
<i>E O Popov, A G Kolosko, S V Filippov, S A Ponyaev</i>	
Composition Modulation in the Ga _x In _{1-x} As _{1-y} -InP Heterostructure During Spinodal Decomposition Under the Conditions of Internal Energy Resonance	639
<i>V V Kuznetsov, P P Moskvin, S I Skurativskyi</i>	

PART 2

Effect of Heat Treatment on the Galvanomagnetic Properties of Bulk Nanostructured Samples of Bi ₈₅ Sb ₁₅ Solid Solution	645
<i>M M Tagiyev, G D Abdinova, I A Abdullayeva</i>	
Study of Nonlinear Optical Phenomena in Silicone Films Encapsulated with SiO ₂ and Si/SiO ₂ Spherical Particles	652
<i>V Mastalieva, A Nikolaeva, V Neplokh, D Eurov, S Makarov, D Kurdyukov, E Stoypiaga, V Golubev, I Mukhin</i>	
Development of Techniques for the Formation of a Planar Electric Vacuum Diode Based on an Array of CNTs Synthesized at the Edge of the Co-Nb-N-(O) Film.....	657
<i>G S Eritsan, D G Gromov, S V Dubkov, E P Kitsyuk, A I Savitskiy, A A Dudin</i>	
III-V Nanostructures with Different Dimensionality on Silicon.....	662
<i>R R Reznik, K P Kotlyar, V O Gridchin, I V Ilkiv, A I Khrebtov, Yu B Samsonenko, I P Soshnikov, N V Kryzhanovskaya, L Leandro, N Akopian, G E Cirlin</i>	

Plasma Enhanced Chemical Vapor Deposition of Gallium Phosphide at Low Temperature	667
<i>A V Uvarov, I A Morozov, A I Baranov, A A Maximova, E A Vyacheslavova, D A Kudryashov, A S Gudovskikh</i>	
Aluminum Diffusion During Laser-Stimulated Crystallization of Thin Silicon Films.....	671
<i>S O Solodovnikova, L D Volkovoynova, A A Serdobintsev, A V Starodubov, I O Kozhevnikov, A M Pavlov</i>	
New Sorbents for Electrochromatography Based on Polymer-Inorganic Dielectric Composites.....	675
<i>A Y Shmykov, S V Mjakin, N A Bubis, L M Kuztetsov, N A Esikova, A A Fedorov, V E Kurochkin</i>	
Thin Nanocrystalline Semiconductor Films as Selective Chemical Sensors for Ammonia, Acetone and Other Donors	680
<i>V Chistyakov, S Kazakov, M Grevtsev, S Solov'yov</i>	
Influence of Plasmon Resonance on the Luminescence of Titanium Dioxide Thin Films Doped with Rare Earth Ions	686
<i>M Łapński, J Czubek, K Drozdowska, W Sadowski, V V Kuznetsov, N Charykov, B Koscielska</i>	
Processes of Formation of Epitaxial Arrays of Self-Catalytic GaP Nanowires on Si (111).....	691
<i>S V Fedina, V V Fedorov, Yu S Berdnikov, G A Sapunov, I S Mukhin</i>	
Development of Self-Cleaning SERS-Active Nanostructures Based on ZnO Nanorods and Ag Nanoparticles.....	696
<i>D V Novikov, N S Malakhov, A M Tarasov, A I Savitskiy, S V Dubkov, D G Gromov, E M Eganova</i>	
Study of Electric Parameters of Thin Porous Anodic Alumina Layers.....	702
<i>E N Muratova, S S Nalimova, A A Bobkov, V A Moshnikov</i>	
Multiphoton Intersubband Transitions in an Armchair Graphene Nanoribbon	707
<i>B S Monozon, T A Fedorova, P Schmelcher</i>	
Average SWCNT Bundle Length Estimated by Resistance Measurement.....	712
<i>D M Mitin, A.A. Vorobyev, Y S Berdnikov, A M Mozharov, A G Nasibulin, I S Mukhin</i>	
Study of the Electrophysical and Gas-Sensitive Properties of Thin ZnO-SnO ₂ Films Formed by the Sol-Gel Method	716
<i>A P Starnikova, I A Gulyaeva, V Yu Storozhenko, M G Volkova, E M Bayan, V V Petrov</i>	
Elliptic Flow for ϕ -Mesons in Cu+Au and U+U Collisions	721
<i>Iu M Mitranyov, E V Bannikov, A Ya Berdnikov, Ya A Berdnikov, D O Kotov</i>	
Comparative Analysis of Strange Meson Production in Heavy Ion Collisions	727
<i>V S Borisov, A Ya Berdnikov, Ya A Berdnikov, D O Kotov, Iu M Mitranyov</i>	
Model Calculations of ϕ -Meson Production in Small Collision Systems	732
<i>M M Mitranyova, A Ya Berdnikov, Ya A Berdnikov, D O Kotov, Iu M Mitranyov</i>	
Charged Pion, Kaon, Proton and Antiproton Production in Large Collision Systems.....	737
<i>D M Larionova, A Ya Berdnikov, Ya A Berdnikov, D O Kotov, Iu M Mitranyov</i>	
Method and Stabilization System of Position-Sensitive Spectrometer Based on Semiconductor Strip Detector	742
<i>Yu V Tuboltsev, I V Eremin, A A Bogdanov, Yu V Chichagov, V K Eremin, E M Verbitskaya</i>	

Degradation of Silicon Detectors Under Long-Term Irradiation by ^{252}Cf Fission Products.....	746
<i>S V Bakhlanov, A V Derbin, I S Drachnev, O I Konkov, I M Kotina, A M Kuzmichev, I S Lomskaya, M S Mikulich, V N Muratova, N V Niyazova, D A Semenov, M V Trushin, E V Unzhakov</i>	
Influence of α -Particles Irradiation on the Properties and Performance of Silicon Semiconductor Detectors.....	751
<i>S V Bakhlanov, N V Bazlov, I D Chernobrovkin, A V Derbin, I S Drachnev, I M Kotina, O I Konkov, A M Kuzmichev, M S Mikulich, V N Muratova, M V Trushin, E V Unzhakov</i>	
Properties of $p(770)0$, $K^*(892)$, $\phi(1020)$, $\Sigma(1385)\pm$, $\Lambda(1520)$ and $\Xi(1530)0$ Resonances in Heavy-Ion Collisions at a Center of Mass Energy of and Their Reconstruction Using the MPD Detector at NICA	757
<i>D A Ivanishchev, D O Kotov, E L Kryshen, M V Malaev, V G Riabov, Yu. Riabov</i>	
144Ce - 144Pr Spectrum Measurement with 4π Semiconductor β -Spectrometer	763
<i>I E Alekseev, S V Bakhlanov, A V Derbin, I S Drachnev, I M Kotina, I S Lomskaya, M S Mikulich, V N Muratova, N V Niyazova, D A Semenov, M V Trushin, E V Unzhakov</i>	
A New Limit on the Resonant Absorption of Solar Axions Obtained Via ^{169}Tm -Containing Bolometer	768
<i>A H Abdelhameed, S V Bakhlanov, P Bauer, A Bento, E Bertoldo, L Canonica, A V Derbin, I S Drachnev, N Ferreira Iachellini, D Fuchs, D Hauff, A M Kuzmichev, M Laubenstein, D A Lis, I S Lomskaya, M Mancuso, V N Muratova, S Nagorny, S Nisi, F Petricca, F Proebst, J Rothe, V V Ryabchenkov, S E Sarkisov, D A Semenov, K A Subbotin, M V Trushin, E V Unzhakov, E V Zharikov</i>	
Production of the Isotope Copper-64 by Using Natural Nickel Target with Proton Energy 17 MeV and Beam Current 10 μA at Cyclotron	774
<i>A Tiba, Ya A Berdnikov, Yu A Egorov</i>	
New Measurement of the β -Spectrum of ^{210}Bi with a Silicon $4\pi\beta$ -Spectrometer.....	778
<i>I E Alekseev, S V Bakhlanov, A V Derbin, I S Drachnev, I M Kotina, A M Kuzmichev, I S Lomskaya, M S Mikulich, V N Muratova, N V Niyazova, D A Semenov, M V Trushin, E V Unzhakov</i>	
Laue Diffraction of X-Ray Microbeams by Multilayers	782
<i>V I Punegov</i>	
Spectral Studies of Bismuth-Containing Pyrochlores	786
<i>S V Nekipelov, N A Zhuk, O V Petrova, D V Sivkov, K A Bakina, D V Bogachuk, R A Skandakov, V N Sivkov</i>	
Analysis of the Sharpness of Interfaces in Short-Period GaN/AlN Superlattices Using Raman Spectroscopy Data	791
<i>Yu V Davydov, E M Roginskii, Yu E Kitaev, A N Smirnov, I A Eliseyev, S N Rodin, E E Zavarin, W V Lundin, D V Nechaev, V N Jmerik, M B Smirnov</i>	
Optical and Structural Studies of $\text{Hg}0.7\text{Cd}0.3\text{Te}$ Samples Grown by Various Methods	798
<i>D A Andryushchenko, M S Ruzhevich, A M Smirnov, N L Bazhenov, K D Mynbaev</i>	
Influence of Attenuation on the Generation of Optical Vortices in Multihelicoidal Optical Fibers.....	802
<i>C N Alexeyev, S S Alieva, E V Barshak, B P Lapin, M A Yavorsky</i>	
Effect of Quantum Fluctuations on Soliton Regimes in Microlasers	808
<i>S V Fedorov, N N Rosanov, N A Veretenov</i>	

Tubular Topological Bright-Dark and Dark Laser Solitons.....	814
<i>N N Rosanov, N A Veretenov, S V Fedorov</i>	
Influence of Small Additives of Germanium on the Physical Properties of Chalcogenide Glasses Based on Composition As30.5S44.5I25	819
<i>V A Klinkov</i>	
NEXAFS Study of Carbonate Substituted Bioapatite	826
<i>O V Petrova, K A Bakina, H Ehrlich</i>	
Experimental Study of the Influence of Laser Radiation Power on the Reflection Coefficient of Germanium and Silicon at a Wavelength of 355 nm	830
<i>T V Malinskiy, V Yu Zhelezнов, V E Rogalin, I A Kaplunov</i>	
A Study of the Influence of Copper Sulfate on the Spectral Properties of Common Buckwheat (Fagopyrum Esculentum)	835
<i>V S Goryainov, A A Buznikov</i>	
Interaction of an Electromagnetic E-Wave with a Thin Conducting Film Between Two Dielectric Media in the Case of an Anisotropic Isoenergetic Surface and Impurity Scattering	841
<i>I A Kuznetsova, D N Romanov, A A Yushkanov</i>	
The Rayleigh Wave Scattering on a Rectangular Lattice of the Solid Roughness Discontinuities.....	847
<i>Vitalii N. Chukov</i>	
Regime of Small Number of Photons in the Cavity for a Singleemitter Laser.....	853
<i>N V Larionov</i>	
Development of a Method for Quantitative Comparison of the Luminance of Self-Glowing Crystals – the Basic Elements of a Low Current Source	859
<i>M K Mjagkikh, P A Dementev, M V Zamoryanskaya</i>	
Spectral Analysis of Juvenile Dentin Biomaterials.....	864
<i>P E Timchenko, E V Timchenko, L T Volova, O O Frolov, M Y Vlasov, S S Shipko</i>	
The Raman Spectroscopy Method for Evaluation of Structural Changes in Hard Tissues of Teeth After In-Office Whitening	869
<i>E V Timchenko, P E Timchenko, O O Frolov, O A Magsumova, L T Volova, M A Postnikov, T V Kozlova</i>	
Energy Flows in Tight Focus of Optical Vortices	875
<i>S S Stafeev, V V Kotlyar</i>	
Nonstationary Holographic Currents in a β -Ga ₂ O ₃ Crystal at Wavelength $\lambda = 457$ nm	879
<i>M A Bryushinin, I A Sokolov</i>	
Tight Focusing of Circularly Polarized Light Limited by Semicircular Aperture	885
<i>V D Zaitsev, S S Stafeev, V V Kotlyar</i>	
The Research of the Composition of Mineral Component of Compact Bone Tissue After Flow Delipidation Using the Optic Method.....	892
<i>P E Timchenko, E V Timchenko, E V Pisareva, M Y Vlasov, O O Frolov, L T Volova, R T Samigullin, S S Sergeeva</i>	
Determination of the Refractive Index Profile and Surface Topography of Optically Smooth Objects Using Interference of Optical Vortices	897
<i>B V Sokolenko, N V Shostka, D A Poletaev</i>	

Influence of the Aluminum Content on the Luminescent and Electronic Properties of β -Ga ₂ O ₃	905
<i>E V Dementeva, P A Dementev, A V Kremleva, D Y Panov, A E Romanov, V E Bugrov, M V Zamoryanskaya</i>	
Fullerite C60 Optical Constants in the C 1s NEXAFS Region	910
<i>D V Sivkov, S V Nekipelov, O V Petrova, D V Bogachuk, R N Skandakov, V N Sivkov</i>	
Subcarrier Wave Quantum Key Distribution System with Gaussian Modulation	916
<i>R Goncharov, E Samsonov, A D Kiselev</i>	
Modeling of Plasmon Resonance of Silver Nanoparticles on a Silicon Surface	922
<i>V O Bolshakov, A A Ermina, Yu A Zharova, V A Tolmachev</i>	
X-Ray Spectral Diagnostics of the Local Environment of Zinc in the Arachidic Acid Layers	926
<i>M A Kremennaya, V Yu Lysenko, N N Novikova, S N Yakunin, A V Rogachev, G E Yalovega</i>	
Investigation of Spectral Properties of Potassium-Aluminum-Borate Glass with CuCl - CuBr Nanocrystals	930
<i>A N Babkina, K S Zyryanova, Y B Egorova, A S Kulagina, R R Gavrilov, A A Monogarova</i>	
Spectral Fourier-Microscopy of the Periodic Structures Based on Ge ₂ Sb ₂ Te ₅	935
<i>A I Solomonov, S I Pavlov, P I Lazarenko, V V Kovalyuk, A D Golikov, A I Prokhotdtsov, G N Goltzman, S A Kozyukhin, S A Dyakov, N A Gippius, S G Tikhodeev, A B Pevtsov</i>	
Numerical Simulation of a Plasmonic Lens for Laser Light Focusing	940
<i>E S Kozlova, V V Kotlyar</i>	
Comparison of the Focused Optical Vortices Produced by High-Aperture Phase Conventional and Spiral Zone Plates.....	946
<i>A A Savelyeva, E S Kozlova, V V Kotlyar</i>	
Vertical Cavity Surface Emitting Lasers of 1.3 μ m Spectral Range Based on the InGaAs/InGaAlAs Superlattice	952
<i>S S Rochas, L Karachinsky Ya, A V Babichev, I I Novikov, A G Gladyshev, E S Kolodeznyi, P E Kopytov, V E Bougov, S A Blokhin, A A Blokhin, K O Voropaev, A Yu Egorov</i>	
The Model of Degradation of an InGaN/GaN LED During Current Tests Taking into Account the Inhomogeneous Distribution of the Defects Density in the Heterostructure	956
<i>I V Frolov, A M Hodakov, V A Sergeev, O A Radaev</i>	
Light-Emitting P-I-N GaP/GaPAs NW Encapsulated in a Flexible PDMS Membrane.....	962
<i>S M Mukhangali, V Neplokh, F M Kochetkov, E I Moiseev, A S Miroshnichenko, K B Deriabin, A G Nasibulin, R M Islamova, I S Mukhin</i>	
Induced Electronic Phenomena in Crystals of p-GaSe Semiconductor Promising for Optoelectronics.....	966
<i>R F Babayeva</i>	
Multijunction Solar Cell Spectral Response Determination at Radiation Damage Study	971
<i>S Levina, V Emelyanov, M Mintairov, M Nakhimovich, M Shvarts</i>	
Design of Electrically Driven Single-Photon Source Based on Intra-Cavity Contacted Microcavity with Oxide-Confining Optical Apertures Emitting at 1.3 μ m	976
<i>S A Blokhin, M A Bobrov, N A Maleev, A A Blokhin, A P Vasylyev, A G Kuzmenkov, V A Shchukin, N N Ledentsov, S Reitzenstein, V M Ustinov</i>	

Intensity Noise Characteristics of Intracavity Contacted VCSELs with Rhomboidal Oxide Current Aperture for the Magnetometric Sensor with Cs133 Vapor Cell Used in Magnetoencephalography.....	982
<i>M A Bobrov, S A Blokhin, N A Maleev, A A Blokhin, A P Vasylyev, A G Kuzmenkov, V M Ustinov, I I Novikov, L Ya Karachinskii</i>	
Phase-Sensitive Amplification Based on Gradient Er:PPLN.....	987
<i>V V Galutskiy, K V Puzanovskiy, S A Shmargilov, E V Stroganova</i>	
Zn Diffusion Technology for InP-InGaAs Avalanche Photodiodes.....	993
<i>V V Andryushkin, A G Gladyshev, A V Babichev, E S Kolodeznyi, I I Novikov, L Ya Karachinsky, N A Maleev, V P Khvostikov, B Ya Ber, A G Kuzmenkov, S S Kizhaev, V E Bougrov</i>	
Specific Features of the Formation of Optical Waveguides, Contact Pads and Electrical Interconnections on Lithium Tantalate Substrates	998
<i>I V Konyaev, I I Borodkin, E N Bormontov</i>	
Study of Power Limitation of AlGaN LEDs in Pulse Regime at High Current	1004
<i>A V Aladov, A E Chernyakov, A E Ivanov, A L Zakgeim</i>	
Plasma Semiconductor Antenna	1008
<i>A S Brusentsev, N N Bogachev, S G Dogaev, S Yu Kazantsev, A I Sattarova, P A Titovets</i>	
Microfabrication of Alkali Vapor MEMS Cells for Chip-Scale Atomic Clock	1013
<i>A Kazakin, R Kleimanov, I Komarevtsev, A Kondrateva, Y Enns, A Shashkin, A Glukhovskoy</i>	
Study of Characteristics of LEDs Based on InGaN/GaN Quantum Wells Under Short Electric Impacts Accompanied by Joule Heating.....	1019
<i>A M Ivanov, A V Klochkov</i>	
Piezostack Deformable Mirror with High Technological Effectiveness.....	1025
<i>V V Toporovsky, A V Kudryashov, V V Samarkin, A A Panich, A I Sokallo, A Yu Malykhin</i>	
Four-Terminal Perovskite-Silicon Tandem Solar Cells for Low Light Applications.....	1032
<i>A B Nikolskaia, S S Kozlov, M F Vildanova, O K Karyagina, O I Shevaleevskiy</i>	
Influence of QD Array Positioning in GaAs Solar Cell P-N Junction on Their Photoelectric Characteristics	1038
<i>R A Salii, M A Mintairov, S A Mintairov, M V Nakhimovich, M Z Shvarts, N A Kalyuzhnyy</i>	
Synthesis and Study of the Electrical Conductive Properties of Cs ₂ Fe ₂ TiO ₁₆ in Various Gas Atmospheres.....	1042
<i>D A Rogova, O Yu Sinel'shchikova, N V Besprozvannykh, N A Morozov</i>	
Current—voltage Characteristics of Connecting Tunnel Diodes at Temperature Heating Up to 80°C	1047
<i>E V Kontrosh, G V Klimko, V S Kalinovskii, V S Yuferev, N V Vaulin, B Ya Ber</i>	
Investigation of the Characteristics of a Radioisotope Source Based on a (Y)PO ₄ /(238Pu) Self-Glowing Crystal and an Al _x Ga _{1-x} As/GaAs Photovoltaic Converter	1053
<i>K K Prudchenko, I A Tolkachev, E A Silantieva, E V Kontrosh</i>	
Effect of Nd, Pr Substitutional Atoms on the Magnetic and Magnetostrictive Properties in (Tb-Dy)(Fe-Co) ₂ Laves Phases.....	1059
<i>G A Politova, M A Ganin, A B Mikhailova, D A Morozov, K E Pankov, D G Dankin, I S Tereshina</i>	

New Parametrization for the $^3\text{He}(\text{d}, \text{P})^4\text{He}$ Fusion Reaction Rate and Refinement of the Lawson Criterion for d- ^3He Thermonuclear Reactors	1065
<i>I B Alper, A I Godes, V L Shablov</i>	
Dielectric and Thermal Properties of Organic Ferroelectric (R)-3-Quinuclidinol in Porous Glass.....	1071
<i>A Yu Milinskiy, S V Baryshnikov, E V Charnaya, N I Uskova</i>	
Magnetic and Resonance Properties of the $\text{Y}_0.5\text{Sr}_0.5\text{Cr}_0.5\text{Mn}_0.5\text{O}_3$ Polycrystal	1076
<i>G S Patrin, M M Mataev, K Zh Seitbekova, Ya G Shiyani, V G Plekhanov</i>	
Do We Need a Non-Perturbative Theory of Bose-Einstein Condensation?.....	1081
<i>K G Zloshchastiev</i>	
Quasistationary States in a Quantum Dot Formed at the Edge of a Topological Insulator by Magnetic Barriers with Finite Transparency	1086
<i>D V Khomitsky, E A Lavrukhina</i>	
Influence of AlN/GaN Interfacial Non-Idealities on the Properties of Two-Dimensional Electron Gas in AlGaN/AlN/GaN Heterostructures.....	1092
<i>D S Arteev, A V Sakharov, W V Lundin, E E Zavarin, A F Tsatsulnikov</i>	
RANS-Based Design of Experimental Flow Model for Investigation of Complex Curved Turbulent Wakes Subjected to Adverse Pressure Gradient	1099
<i>E K Guseva, D A Nikulin, A K Travin, R Radespiel, P Scholz</i>	
Stability Features of Steady-State Solutions for a Diode with Electron and Ion Counter-Streams	1105
<i>L A Bakaleinikov, V I Kuznetsov, E Yu Flegontova</i>	
Detection of Oscillatory Solutions in a Vacuum Diode with Total Electron Reflection	1111
<i>V I Kuznetsov, I K Morozov</i>	
Features of Flow Around Transport Aircraft Model with Running Propellers by Modelled Engine Failure in Wind Tunnel.....	1117
<i>V I Chernousov, A A Krutov, E A Pigusov</i>	
Numerical Analysis of the Flow in the Model of a Venous Valve: Normal and Surgical Corrected.....	1123
<i>Y A Gataulin, A D Yakhnev, D A Rosukhovskiy</i>	
Instability of Local Supersonic Regions Over a Flat-Sided Airfoil with a Blunt Trailing Edge.....	1129
<i>A. Kuzmin</i>	
Influence of the Femoral Artery-Graft Junction Patient-Specific Geometry on Blood Flow Structure and Wall Shear Stress	1135
<i>Y F Ivanova, L G Tikhomolova, A D Yakhnev, E M Smirnov, R V Kalmikova, A N Morozov, A A Suprunovich, A A Vrabiy, G G Khubulava, V N Vavilov</i>	
Spectral and Correlation Analysis of Microturbulences in the Spherical Globus-M/M2 Tokamaks	1141
<i>A M Ponomarenko, V V Bulanin, V K Gusev, V B Minaev, A V Petrov, Yu V Petrov, A Yu Yashin</i>	
Gas Discharge Sustained by Powerful THz and sub-THz Gyrotrons in the Mixtures of Noble Gases with Nitrogen.....	1147
<i>A V Sidorov, A P Veselov, S V Razin, T V Barmashova, A V Vodopyanov, A G Luchinin, A A Orlovskiy, M Yu Glyavin</i>	
On Mesh Requirements for Large Eddy Simulation with Wall Functions.....	1152
<i>Dmitry K. Kolmogorov, Florian Menter, Andrey V. Garbaruk</i>	

Large Eddy Simulation with Wall Functions of Ahmed Body	1158
<i>Dmitry K. Kolmogorov, Andreas Hüppe, Florian Menter, Andrey V. Garbaruk</i>	
Direct Numerical Simulation of Separated Turbulent Flow in Axisymmetric Diffuser.....	1164
<i>A S Stabnikov, D K Kolmogorov, A V Garbaruk, F R Menter</i>	
Analysis of the Applicability of the One-Dimensional Model for Calculating Thermal and Thermoelectric Processes in Anisotropic Bismuth Thermoelements.....	1170
<i>P A Popov</i>	
S-, P- And R-Striations as Attractors for Electron Phase Trajectories in Spatially Periodic Resonance Fields.....	1175
<i>Yuri Golubovskii, Tatiana Gurkova, Sergei Valin</i>	
Modeling of Weak Shock Waves Propagation in Aqueous Foam Layer.....	1181
<i>R Kh Bolotnova, E F Gainullina</i>	
The Analysis of Applicability of Thermoelectric Radiation Detectors for Heat Flux Measurements Behind a Reflected Shock Wave.....	1187
<i>M A Kotov, A N Shemyakin, N G Solovyov, Yakimov M Yu, V N Glebov, G A Dubrova, A M Malyutin, P A Popov, S A Poniaev, T A Lapushkina, N A Monakhov, V A Sakharov</i>	
Analysis the Dynamics Formation of a Vapor Supersonic Jet Under Outflow from Thin Nozzle.....	1193
<i>R Kh Bolotnova, V A Korobchinskaya, E A Faizullina</i>	
Influence of Contraction of a Cesium Pulse-Periodic Discharge on Its Luminous Efficacy and Spectral Properties.....	1199
<i>A A Bogdanov, S V Gavrilish, A M Martsinovsky, I I Stolyarov</i>	
Experimental Study of the Flow in the Elastic Model of the Abdominal Aortic Bifurcation	1205
<i>D E Sinitina, D K Zaitsev</i>	
Double-Well Trap for Charged Microparticles	1211
<i>Olga Kokorina, Vadim Rybin, Semyon Rudyi</i>	
Study of Color Centers in Radiation-Modified Diamonds	1217
<i>M V Kozlova, A A Khomich, R A Khmelnitsky, A A Averin, A I Kovalev, O N Poklonskaya, I I Vlasov, A V Khomich, V G Ralchenko</i>	
Suppression of Relaxation of Higher Polarization Moments of Alkali Atoms in Superfrequent Spin-Exchange Collisions	1223
<i>A I Okunovich</i>	
Nonlinear Optical Dynamics of Two-Dimensional Super-Lattices of Quantum V-Emitters	1231
<i>Davut Ya. Bayramdurdiyev, Ramil F. Malikov, Igor V. Ryzhov, Victor A. Malyshev</i>	
Nonlinear Optical Dynamics of 2D Super-Crystals of Quantum Λ-Emitters	1235
<i>Igor V. Ryzhov, Ramil F. Malikov, Andrey V. Malyshev, Victor A. Malyshev</i>	
Molecular Mobility in Bulk and in Near-Surface Nano-Layers of Ultra-High-Molecular-Weight Polyethylene	1239
<i>V I Siklitsky, A K Gladkov, E M Ivan'kova, D V Lebedev, L P Myasnikova, V A Marikhin, O Yu Solov'eva</i>	
Effect of Doping Atoms in the Surface Morphology of Dense Palladium-Based Diffusion Membrane-Filters	1245
<i>O V Akimova, I S Tereshina, T P Kaminskaya</i>	

Silicon Nanowires Based Adsorption Sensors for CO and NH ₃ Detection.....	1251
<i>V M Kondratev, I A Morozov, E A Vyacheslavova, A S Gudovskikh, S S Nalimova, V A Moshnikov, A D Bolshakov</i>	
Influence of Roughness Parameters of Surface on the Emissivity of Germanium Single Crystals.....	1257
<i>S A Tretiakov, S V Molchanov, I A Kaplunov, A I Ivanova</i>	
Work Function of Polytypic Gallium Phosphide Nanowires.....	1263
<i>V A Sharov, P A Alekseev, V V Fedorov, A V Ankudinov, I S Mukhin</i>	
Investigation Influence of Switching Tests Coatings of Magnetically Controlled Contacts on the Surface Structure	1267
<i>D S Loginov, A V Baskakova, V G Litvinov, T A Kholomina, N B Rybin, E P Trusov</i>	
Pulsating Fields of a Thin Film in a Static Magnetic Field Under Vertical Vibrations.....	1273
<i>I V Volodin, A A Alabuzhev</i>	
Electronic Structure of Thermally Oxidized Tungsten	1279
<i>S N Timoshnev, P A Dementev, E V Dementeva, M N Lapushkin, D A Smirnov</i>	
Schottky Diodes Based on 4H-SiC Epitaxial Layers.....	1285
<i>A M Strel'chuk, E V Kalinina</i>	
Study of Adsorption Effect on Orientational and Relaxation Properties of Finite Polymer Chains Near the Solid Surface.....	1291
<i>O G Maksimova, A V Maksimov, V V Smirnov, V I Egorov, S V Osipov, E V Menshikov</i>	

Author Index