2025 International Conference on Electrical Engineering and Photonics (EExPolytech 2025)

Saint Petersburg, Russia
16-17 October 2025

IEEE Catalog Number: CFP25R49-POD
ISBN: 979-8-3315-7123-8

****** This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP25R49-POD
ISBN (Print-On-Demand):	979-8-3315-7123-8
ISBN (Online):	979-8-3315-7122-1
ISSN:	2771-6988

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
E-mail: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

SECTION 1: CIRCUITS & SYSTEMS FOR TELECOMMUNICATIONS

Analysis and Experimental Validation of an Lshaped Slot in a T-Junction of Rectangular Waveguides Using Equivalent Circuit Modeling 5
Ha Nam Nguyen, Aleksander Sochava, Sergey Bogachev, Konstantin Greshnevikov, Andrey Cherepanov

Comparison of Designs of Cylindrical Antenna Elements for the Implementation of Cantennas 9
Evgeniy A. Ishchenko, Evgeniya D. Egorova, Anton Yu. Chernishev, Alexandr V. Ostankov

Evaluation of the Bearing Determination Stability of a Wideband Direction Finder Based on SDR 13
Evgeniy A. Ishchenko, Evgeniya D. Egorova, Sergey M. Fedorov, Aleksey V. Bashkirov

Design of a Filter Bank for Decimeter–Centimeter Bands 16
Alexander B. Nikitin, Alexander A. Stroganov, Ekaterina I. Khabitueva, Pavel E. Zhukov

Research on the Application of Wireless Charging Technology in Wearable Therapeutic Devices 20
Sente Ai, Yichen Liu, Yingguang Zhu, Haijun Yang, Hui Yang, Changyong Pan

Influence of 3D-Printing Materials on the Electrodynamic Parameters of Antennas 24
Mikhail A. Romashchenko, Roman S. Sukhomlinov, Dmitry V. Vasilchenko, Dmitry A. Pukhov, Evgeniy A. Ishchenko, Nataliia E. Samoilenko

Multiline Marchand Baluns Design Using GaAs pHEMT Technology 28
Alexander B. Nikitin, Alexander A. Stroganov, Ekaterina I. Khabitueva, Pavel E. Zhukov

Contactless Interlayer Transitions with the Possibility of Integrating Resonant Structures in Volumetric Microwave Circuits 32
Andrei Bocharov, Sergey Ermak

Design and Comparison of Matching Networks for 2.4-2.5 GHz Power Amplifier 36
Alexander Gubin, Evgenii Balashov

An Approach to Modeling Conducted Emissions in Flyback AC-DC Converters 40
Mikhail Romashchenko, Andrej Gudkov, Oleg Makarov, Marina Horoshaylova, Igor Bobylkin, Natalya Tsipina

Gallium Arsenide Operational Amplifier with Two High-Impedance Nodes for High-Temperature Applications 45
Marsel A. Sergeenko, Vladislav E. Chumakov, Nikolay N. Prokopenko, Dmitriy V. Kleimenkin

Enhancing the Sensitivity of Fiber-Optic Sensors for Deformation Measurements in Structural Reliability Assessment 48
Nurzhigit Smailov, Zhiger Zhanatayuly, Dmitry Kiesewetter, Syrym Koblanov, Ainur Kuttybayeva, Zhandos Dosbayev

A High-Linearity, Wide-Bandwidth Track-And-Hold Amplifier in SiGe BiCMOS Technology 52
Chengye Li, Jiacheng Wang, Lulu Guo, Shuo Li, Jun Wang, Jian Song

Physics-Based Compact Modeling of QuasiSaturation Effect in SJMOS 56
Ziyang Ji, Jiacheng Wang, Binbin Zhu, Rui Chen, Chijie Zhuang, Jian Song

Reflector Based on Ferroelectric Material for the Formation of Millimeter Waves with Electrically Tunable Orbital Angular Momentum 60
Alexey Sosunov, Andrey Altynnikov, Roman Platonov, Andrey Komlev

The Impact of the Capacitance-Voltage Dependence on the Performance of Switched-Mode Power Amplifiers..... 64
Pham Huu Duc, Vladimir Sorotsky, Roman Zudov, Nikita Treimut, Aleksey Pergushev, Doan Van Tung

Induced Attack Analysis and Design on Network Control System with Prescribed Trajectory 67
Tran Huy Khanh, Duong Chinh Cuong, Thiem V. Pham

Design of an FPGA-Based Wideband FrequencyTunable Generator for RF Jammer Systems..... 71
Tigran Manukyan, Harutyun Hambardzumyan, Hrachya Stepanyan, Gagik Sughyan, Suren Eyramjyan, Aharon Aharonyan, Billi Minasyan

Evaluation of Parasitic Parameters Effect on Losses in Antenna Matching Devices 75
Andrey Davydov, Nikolay Kulikov, Vladimir Sorotsky

Methods for Reducing Power Consumption in Hardware Implemented Neural Networks..... 79
Danil I. Skrebenkov, Dmitry O. Budanov

Omnidirectional Waveguide Slot Antennas on the Mode E_{01} 83
Anahit Nersisyan, Hrachya Stepanyan, Ruben Davtyan, Sergey Volvenko, Aharon Aharonyan, Vahan Avetisyan

A Novel 6G Broadcasting System Based on MU-MIMO and Layer Division Multiplexing 86
Jizheng Sun, Chao Zhang, Kewu Peng, Jian Song

A Research Toolkit for Biomolecular Components in Post-CMOS Electronics..... 90
Maksim Baranov, Faridoddin Shariaty, Ekaterina Medvedeva, Andrey Musorin, Arseniy Alekseev, Mikhail Popov, Oleg Tsybin

A Wideband Low Phase Noise Amplifier on GaAs Technology 94
Alexander V. Usanov, Evgeniy V. Balashov

Linux SPI Device Driver for a Smart Temperature and Pressure Sensor 98
Daniil Shaposhnikov, Dmitry O. Budanov

FPGA Implementation of High-Throughput Pipelined Decoders for Reed-Solomon Codes 102
Thuan Van Le, Nam Van Dinh, Dac Cu Nguyen

Pseudo Resistors in 180 nm CMOS Technology..... 107
Artem A. Pyatlin, Dmitry V. Morozov

Self-Biased Nagata Current Source Using 180 nm CMOS Process 111
Kirill A. Mironov, Dmitry V. Morozov

The Use of a Voltage-To-Current Converter in the Development of an ADC Based on VCO 114
Vitaly D. Bystrov, Dmitry V. Morozov

Systematic Error Compensation by Switching-Based Calibration of DAC with Elements Redundancy 118
Natalya V. Kvashina, Mikhail S. Yenuchenko

The Method of Rational Interpolation in the Problem of Synthesizing a Prototype of a Frequency-Selective Circuit with a Fractional Order Transfer Function 122
Alexander Korotkov, Alexander Kavruk

SECTION 2: ALGORITHMS & SIGNAL PROCESSING

5G NR MBS Mobility Reception Performance Trials 127
Xiangjun Liang, Changyong Pan, Qingjun Zeng

Study of the Accuracy of Determining Parameters of Radar LFM Signals in the Autocorrelation Processing Device of Radio Monitoring Systems 131
Quan Trong, Nguyen Trong Nhan

Physics Model Based Novel LED Pre-Compensation Method for Next-Generation OWC Systems 135
Jiacheng Wang, Ziyang Ji, Binbin Zhu, Jun Wang, Xun Zhang, Jian Song

Comparative Analysis of Classification Algorithms in the Task of Breast Cancer Diagnosis 139
Elena Yu. Savchenko, Ekaterina A. Medvedeva

Single Station Large-Scale Coverage Scheme and Field Testing of DTMB-A at Islamabad 142
Lu Tong, Ke Mao, Haidong Fang, Siyuan Li, Hailong Wen, Changyong Pan

Low-Complexity FPGA Implementation of Median Filter with Single Clock Cycle Latency 147
Pavel Bondarev, Andrey Rashich

Error Oriented Tau Method for Systems of Linear Ordinary Differential Equations with Polynomial Coefficients 151
Alexander Berdnikov, Anton Bulyanitsa, Anatoly Evstrapov, Nadezhda Krasnova, Konstantin Solovyev

SIMO TDS-OFDM Integrated Sensing and Communication: Modeling and Performance Evaluation 155
Jiangsu Du, Chao Zhang

A Digital-Domain Nonlinear Calibration Algorithm for Ultra-Wideband Track-And-Hold Amplifier 159
Shuo Li, Jiacheng Wang, Chengye Li, Chao Zhang, Jun Wang, Jian Song

The Approximate Universality of LTE-Turbo, NR-LDPC, and SC-LDPC Codes 163
Xiaohan Zhou, Kewu Peng, Dmitry A. Tkachenko, Eugene A. Popov, Sergey B. Makarov, Jian Song

SPECTRUM: Synergistic Precision Extraction and Chart Transformation Tool for Robust Unified Power SeMiconductor (IGBT) Datasheet 167
Jinyu Wang, Haoning Jiang, Jiachen Wang, Rui Chen, Chijie Zhuang, Jian Song

Stealthy Attack Design Against Network Control System 171
Quynh T. Thanh Nguyen, Duong Chinh Cuong, Nam Dinh Van

Bispectrum-Based Signal Processing Using Waterfall Features 175
Eduard Sivolenko, Mane Harutyunyan, Sergey Makarov, Naira Gasparyan, Hayk Martirosyan, Arsen Hakhoumian

Autocorrelation-Driven TX/RX Synchronization and Fingerprinting of Unknown Transmitters Using Zadoff-Chu Sequences 178
Eduard Sivolenko

Transmitter and Receiver Architecture for Human Presence and Movement Detection 181
Eduard Sivolenko, Aram Antonyan, Naira Gasparyan, Sergey Makarov, Hayk Martirosyan

Optimized Parameter Configuration for Multi- Channel Direction-Finding in the 1–6 GHz Band 184
Tigran Manukyan, Harutyun Hambardzumyan, Hrachya Stepanyan, Gagik Sughyan, Suren Eyramjyan, Aharon Aharonyan, Billi Minasyan

Algorithm for Detecting, Recognizing the Type and Parameters of Defects in Glass Parts of High-Voltage Insulators 188
Anton Korzhov, Vladimir Surin, Petr Lonzinger, Valery Safonov, Yaroslav Bushmelev, Kirill Belov

Bispectral Analysis as a Diagnostic Tool for Nonlinearities in RF Signal Transmission Using a Modular USRP-LabVIEW Framework 192
Naira Gasparyan

Numerical Analysis of the Probability of V2V Link in C-V2X System Under Lomax Fading..... 195
Aleksey S. Gvozdarev, Tatiana K. Artemova, Andrey A. Veselkov, Roman Yu. Manakhov

CAST-E2E: Enhancing Robustness of Pilot-Free E2E Systems with Channel-Aware Encoding and Feature Shuffling 199
Yalong Guo, Jingbo Tan, Rui Zeng, Sufang Yang, Jintao Wang, Changyong Pan

Comparative Analysis of Multi-Modal Feature Fusion Strategies for Non-Invasive EGFR and KRAS Mutation Classification in NSCLC Using Radiomics and Deep Learning 203
Faridoddin Shariaty, Vitalii Pavlov

Detection of Phase Coupling in Radio Frequency Signals Using Bispectral Analysis..... 207
Babken Hovhannisyan, Eduard Sivolenko, Andrey Rashich, Alex Mkoyan, Vanand Mkhoyan, Anna Vardanyan

Experimental Verification of Brain-Origin RadioFrequency Emissions in an RF-Isolated Environment 210
Babken Hovhannisyan, Eduard Sivolenko, Andrey Rashich, Alex Mkoyan, Vanand Mkhoyan, Anna Vardanyan

Simulation of a Magnetic Induction Communication System for Tunnel Collapse Scenarios 213
Feng Wu, Hui Yang, Changyong Pan, Kaifeng Wang

Euler Criterion for Discretely Homogeneous Functions Used as a Basis for the Principle of Limited Similarity of Trajectories 217
Nadezhda Krasnova, Konstantin Solovyev, Alexander Berdnikov, Anton Bulyanitsa, Sergey Masyukevich, Igor Kurnin

Hyper-Rayleigh Analysis of the Modified Fluctuating Nakagami-M Fading Model 221
Aleksey S. Gvozdarev, Tatiana K. Artemova, Oksana A. Antipaeva, Ivan A. Panov

GraphSAGE on Superpixel Graphs for Aerial Agricultural Anomaly Analysis 225
Nikolay Alisultanov, Eugene Popov, Dmitry Tkachenko

Adaptive Operating Baseline Selection and Estimate Fusion in a TDOA Direction Finding System Based on Local Uncertainty 228
Artem A. Mardiev, Vladimir D. Kuptsov

Beyond DVB-S2X: Optimal Signals for High-Throughput CubeSat Communications..... 232
Sergey Zavjalov, Anna Orlova, Ilya Lavrenyuk, Sergey Makarov, Alexandra Kuznetsova, Sergey Volvenko

Application of the Compensation Method to Reduce the Effect of Amplitude Spectrum Leakage..... 236
Alsu I. Nurtdinova, Elizaveta A. Budkina, Ekaterina A. Dolgacheva, Alexander A. Shatokhin, Nikolay A. Serov, Andrey N. Serov

Power Allocation with Limited Feedback for Underwater Acoustic OFDM Communication Systems..... 240
Artem Chilingarov, Aleksandr Gelgor

Assessment of ADC Instrumental Error Components Influence on Frequency Measurement Accuracy Using Amplitude Spectrum Analysis..... 244
Sergey A. Podobuev, Viktor D. Kacharsky, Angelina A. Chirkova, Petr K. Makarychev, Nikolay A. Serov, Andrey N. Serov

BioResNet-18: A Deep Learning Framework for Quantitative Analysis of Biomolecular Film Microstructures..... 248
Faridoddin Shariaty, Oleg Tsybin, Vitalii Pavlov, Maksim Baranov

Performance Evaluation of GBI-Based Interleavers for Serially Block Concatenated Codes..... 252
Van Dung Hoang, Xuan Nghia Pham, Thi Hong Nhung Nguyen, Bang Khuc, Aleksandr Gelgor

Reducing Out-Of-Band Emissions of ContinuousPhase Modulation by Employing Long-Duration Phase Pulses 256
Sergey Melnikov, Sergey Makarov

Perspective Systems for Mobile Broadcasting 260
Dmitry Tkachenko, Eugene Popov, Victor Vargauzin, Anatoly Ulanov

Possible Outlines of 5G Broadcasting Pilot Area 264
Dmitry Tkachenko, Eugene Popov, Victor Vargauzin, Anatoly Ulanov

LTE SDR-Based Signal Analyzer with Panoramic Scanning Module Based on Machine Learning..... 268
Vsevolod Tsap, Grigoriy Fokin

Software Defined Radio Implementation of OCDM Wireless System..... 272
Sophia Belkova, Georgy Teterin, Ilya Lavrenyuk

A Comparative Analysis of Adaptive Phase Noise Compensation Methods in LTE Uplink 276
Vladimir Matveev, Ilya Lavrenyuk

SECTION 3: MATERIALS & NANOSCIENCE

Stand and Method for Conducting Electromagnetic Studies at Elevated Temperatures..... 281
Igor O. Testov, Elizaveta S. Gavrishko, Andrey V. Korlyakov, Oleg A. Testov, Ivan K. Khmelnitskiy

The Experimental Study of Carbon Micro-Nano-Layer Deposition on a Metal Substrate Fabricated by the Ion-Plasma Technology 284
Anna S. Petrovskaya, Alexander B. Tsyganov

Simulation of Dynamic Processes in Gyrotron Electron Beams with Reflection of Electrons from a Magnetic Mirror 288
Oleg Louksha, Alexander Malkin, Bogdan Apanevich

Study of Thermoelectric Effect in Nanocontacts with the Use of an Atomic Force Microscope 292
Alexander Arkhipov, Van Tu Anh Nguyen, Felix Zaseev, Pavel Gabdullin

Composite Film Materials Based on Polyvinyl Alcohol and Polyaniline 296
Liubov Starkova, Viktoria Kapralova, Nikolay Sudar

Brief Guide into Surface Composition Analysis Methods in MD Simulations 300
Kirill Karasev, Denis Strizhkin, Platon Karaseov

Magnetron-Sputtered Ni and ZrTiNiSn Thin Films on Si-Substrate: Thickness Influence on Structural Property and Electrical Conductivity 303
Van Tu Anh Nguyen, Svetlana P. Smirnova, Dmitrii A. Savin, Sun Haichao, Bui Cong Doan, Alexandr V. Arkhipov, Pavel G. Gabdullin

Using a Linear Combination of Powers of LaplaceTransformed Functions to Approximate the (0+1) Dimensional Inhomogeneous Sine-Gordon Equation 307
Evgeny Apushkinskiy, Vadim Kozhevnikov

Investigation of the Electrophysical Properties of Electrical Insulating Paper Made from Hogweed Sosnowski Cellulose Modified with Bacterial Cellulose 310
Dmitry Kiesewetter, Albert Khripunov, Alexandra Migunova

Development of Hollow Microneedle Structures Using High-Resolution LCD 3D Printing 313
Antonina D. Bobrovskaya, Aleksandr V. Butochnikov, Stepan E. Parfenovich, Ivan K. Khmelnitskiy, Maksim O. Palamarchuk, Nikita O. Sitkov, Oleg A. Testov

Surface Morphology of Ni/GaAs Thin Films Produced by Ion-Plasma Method 316
Kuvondik Dovranov, Shakhnoza Jurayeva, Muradulla Normuradov, Dilnavoz Normuminova, Ilkhom Bekpulatov, Furqat Egamurotov, Maksim Vinnichenko, Vera Loboda, Hikmat Turakulov

Electrophysical Properties and Surface Characteristics of $BaTiO_3$ Thin Films Produced by Ion-Plasma Method 319
Kuvondik Dovranov, Muradulla Normuradov, Ilkhom Bekpulatov, Muzaffar Davlatov, Khujamkul Davranov, Nodirabegim Kuziboyeva, Vera Loboda, Valentina Zhurikhina, Maksim Vinnichenko

Biocompatible Eco-Friendly Conductive Ink for Printed Electronics and Implantable Sensors 322
Stepan E. Parfenovich, Sviatoslav V. Studenovskii, Ivan K. Khmelnitskiy, Alexey A. Anisimov, Oleg S. Bokhov

Features of the Energy Analyzer Application for Studying the Fermi Quasi-Levels of the Prototype Low-Voltage Field-Emission Cathode 326
Svetlana P. Smirnova, Rostislav S. Smerdov, Sergey N. Davydov

Numerical Study of Second Harmonic Generation in Spherical Mesoporous Si/SiO_2 Nanoparticles 330
Anastasia Funtikova, Alexey Mozharov, Vladimir Fedorov, Vladislav Sharov

Synthesizing Ta-Doped Titanium Oxide Thin Films Utilizing DC/RF Magnetron Co-Sputtering Technique for Resistive Switching Application 334
Disha Yadav, R. Sai Prasad Goud, S. V. S Nageswara Rao, Amit Krishna Dwivedi, Devesh Kumar Avasthi

Crystallization Time Control by In-Situ Impedance Spectroscopy for Solid Electrolyte System LAGP Doped with Te 337
Viktor Markov, Vladislav Chernyavsky, Ksenia Kiseleva, Denis Olkhovskii, Pavel Vishnyakov, Maxim Maximov

Photoelectric Properties of $Si(p)/C_{60}$/Au Structures in an External Electric Field 340
Egor D. Letkiman, Dmitry I. Dolzhenko

Colloidal Carbon Spheres Derived from Dilute Solutions of Polysaccharides..... 344
Alexandra Sitnikova, Ekaterina Gasilova, Natalia Saprykina

Multi-Electrode Emitters Based on Carbon Nanotubes..... 348
Victor Zaytsev, Ivars Rozhleys, Sergey G. Moiseev, Dmitry Sannikov

N -Shaped Current-Voltage Characteristics of an Array of Disordered Carbon Nanotubes 351
Sergey Afanas'Ev, Sergey Moiseev, Dmitry Sannikov, Mikhail Saurov, Artem Sysa, Yuri Shaman

Current Characteristics of a Multi-Tip Cathode for Ribbon Electron Beam Formation..... 354
Evgeny Taradaev, Sergei Taradaev, Gennadii Sominskii, Mikhail Givargizov, Anna Rukavitsyna, Anastasia Egorova

Magnetostriction in Tb-Dy-Gd-Co RapidlyQuenched Alloy with Laves Phase Structure 357
Abdu-Rahman A. Aleroev, Tatiana P. Kaminskaya, Nikolay Yu. Pankratov, Irina S. Tereshina, Alexey Yu. Karpenkov, Alexey V. Filimonov

Effect of Mechanical Stress on Fatigue Characteristics of Lead Zirconate Titanate-Based Thin Films..... 361
Maria Kniazeva, Natalia Zhukova, Alexander Vakulenko

Pulse-Synchronized Complex for Microwave Diagnostics of Low-Temperature Atmospheric Plasma Jets 364
Aleksandr Astafiev, Aleksandr Altmark, Nikita Lesiv

Percolation Behavior of Carbon Nanotube-Based Polymer Composites..... 368
Dmitry Tonkov, Vitaliy Gasumyants, Nataliya Grozova, Ilya Kobykhno, Oleg Tolochko

Luminescent Properties and Phase Composition of $Y_{2.9}Al_5O_{12}:Ce_{0.1}$ Synthesized by Wet Chemistry Methods..... 371
Anastasia Shirobokova, Tatyana Sedegova, Victor Klinkov, Zakhar Patrakov, Valentina Andreeva, Alexander Semencha

Smart Nose System Based on Single MEMS NiO Gas Sensor 375
Anastasia Kondrateva, Ilya Lazdin, Yakov Enns, Alexey Kazakin, Denis Strizhkin, Kirill Karasev, Ivan Komarevtsev, Maxim Mishin, Platon Karaseov

SECTION 4: PHOTONICS

Performance Analysis of Fiber-Optic Gyroscopes Under Vibration and Temperature Effects..... 379
Nurzhigit Smailov, Yerlan Tashtay, Akezhan Sabibolda, Ainur Kuttybayeva, Moldir Baigulbayeva, Yerzhan Nussupov

Theoretical Realization of a Coherent Ising Machine: Splitting Complex Optimization Problems into Sub-Problems for Enhanced Solving..... 383
Yasmeen Ismail, Nikolai Ushakov

Long-Range Interpulse Attraction in Soliton Fiber Laser..... 387
Dmitry A. Korobko, Valeria A. Ribenek, Pavel A. Itrin, Maxim V. Pribylov, Aleksei V. Tregubov, Andrei A. Fotiadi

Typical Spectral Features of Multi-Soliton Complexes in Fiber Laser..... 391
Dmitry A. Korobko, Valeria A. Ribenek, Pavel A. Itrin, Galina V. Tertyshnikova, Andrei A. Fotiadi

The Specifics of Measuring the Amount of Deformation at Pulsed Mechanical Action on the Object 395
Dmitry Kiesewetter, Sergey Krivosheev, Sergey Magazinov, Ivan Kuznetsov, Victor Malyugin

Modeing Passive Magnetic Shielding in Nuclear Magnetic Resonance Gyroscopes 398
Timur Maksutov, Sergey Ermak

Electric Field Induced Polarization Anisotropy of Terahertz Absorption in n-InSb 401
Danila Karaulov, Ilya Norvatov, Ratmir Ustimenko, Maksim Vinnichenko, Grigorii Melentev, David Hayrapetyan, Evgeniy Volinsky, Alexey Adler, Dmitry Firsov

Magnetometer Without "Dead Zones" for Receiving Magnetic Induction Signals 404
Sergey Ermak, Roman Kuzmin, Olga Ermak, Eduard Sagitov

Selection of an Invariant Measure for Pattern Recognition in the IR Band Under the Influence of Climatic Factors 408
Anton V. Kvasnov

Integration of GNSS and Fiber-Optic Gyroscope: Improving Navigation Robustness Under Satellite Signal Loss 412
Yerlan Tashtay, Nurzhigit Smailov, Kalmukhamed Tazhen, Akezhan Sabibolda, Aruzhan Nazarova, Aidana Bazarbay

Generation of Picosecond Laser Pulses with Sub THz Tunable Frequency in Modlock Configuration with an Active Bragg Gratings 416
Aleksei Abramov, Dmitry Korobko, Viktor Lapin, Andrei Fotiadi

A 500 M 1 Mbps Line-Of-Sight Ultraviolet Communication System Based on a LED Array 420
Donghui She, Mingyang Wang, Hongming Zhang, Jian Song

Two-Wave Mixing in a Bidirectional Rare-Earth-Doped Fiber Amplifier 424
Dmitry A. Korobko, Aleksey V. Tregubov, Daniil A. Kachalkin, Igor O. Yavtushenko, Aleksei A. Abanin, Andrei A. Fotiadi

The Use of Optical Fibers with Ultra-High Numerical Aperture and Fiber Microlenses for Introducing Radiation into Photonic Integrated Circuit Chips 428
Anatoliy S. Pankov, Roman S. Ponomarev

Bystander-Like Effect Triggered by 1265 nm Continuous-Wave Laser Radiation in Normal and Cancer Cell Cultures 431
Anna Khokhlova, Yury Saenko, Sergei Sokolovski, Aigul Gilmutdinova, Dmitrii Stoliarov, Edik Rafailov, Valeria Ribenek, Dmitriy Korobko, Andrei Fotiadi

Effects of Thermal Exposure on Fiber-Optic Polarization Interferometer Performance 434
Andrey Golovchenko, Aleksandr Petrov, Arseniy Archelkov, Valentina Temkina, Oleg Kotov

Light Absorption by an Array of Graphene Particles 438
Igor A. Glukhov, Sergey G. Moiseev

Numerical Modeling of Resonant Amplification of Slow Surface Plasmon Polaritons by Drift Current 441
Alexey Kadochkin, Sergey G. Moiseev, Evgeny Kitsyuk

Measurement of Group Delay and Chromatic Dispersion of Single-Mode Optical Fiber in Microwave Photonic Transmission Link Using Vector Network Analyzer 445
Sergei Ivanov, Alexander Lavrov

Common-Path Spectral-Domain OCT System with Multiplexed Probes and Modulation-Division Multiplexing 449
Zoja Erovenko, Maksim Makarenko, Ulyana Makarenko, Aleksandr Markvart, Leonid Liokumovich, Nikolai Ushakov

Speckle Patterns in Real Fiber Optic Axisymmetric Cascade Structures 453
Liubov Zavalishina, Aleksandr Markvart, Olesia Bobyleva, Angelina Grazhdian, Vladimir Filonov, Nikolai Ushakov

Algorithmic Errors in Determining the Cavity Length of an External Fiber-Optic Fabry-Perot Interferometer Using the Discrete Fourier Transform 457
Nikita Sedov, Aleksandr Markvart, Leonid Liokumovich, Nikolai Ushakov

Free Running Single Photon Detector 461
Andrei A. Belov, Artemy S. Kozlov, Pavel A. Krinsky, Andrei V. Medvedev, Aleksandr V. Petrov, Sergey V. Rozov, Nikolai A. Ushakov

Cold Test Microcirculation Monitoring with a Miniature Optical Sensor 465
Ekaterina A. Medvedeva, Anvar A. Beisembaev

Experimental Setup for Studying the Scattering of Polychromatic Light by Optically Inhomogeneous Objects 469
Dmitry Kiesewetter, Alexandr Korotkov, Victor Malyugin, Leonid Sverdlik

Author Index