

Contents

Vol. 53, No. 2, 2017

A simultaneous English language translation of this journal is available from Allerton Press, Inc.,

Distributed worldwide by Springer. *Optoelectronics, Instrumentation and Data Processing* ISSN 8756-6990.

Optical Information Technologies

- Spatio-Temporal Generation Regimes in Fiber Laser Systems (Review)
D. V. Churkin, S. K. Khorev, and I. D. Vatnik 103
- Evaluation of the Maximum Speed of Layer-by-Layer Heterodyne Analysis
of Light Scattering Characteristics in Volume Optical Media
P. E. Tverdokhleba and Yu. A. Shchepetkin 114
- Alignment of the Writing Beam with the Diffractive Structure Rotation Axis
in Synthesis of Diffractive Optical Elements in a Polar Coordinate System
R. V. Shimanskii, A. G. Poleshchuk, V. P. Korolkov, and V. V. Cherkashin 123
- Dynamics of the Crystallization Front Induced by the Temperature Gradient
at the Upper Boundary of a Horizontal Layer of a Fluid
*V. A. Arbuzov, E. V. Arbuzov, Yu. N. Dubnishchev, V. S. Berdnikov,
and O. S. Melekhina* 131
- Electronic Structure of Atoms Information System: Current Status and Development Trends
V. V. Kazakov, V. G. Kazakov, V. S. Kovalev, O. I. Meshkov, and A. S. Yatsenko 136
-

Analysis and Synthesis of Signals and Images

- High-Speed Processing of Phase Images with Parallel Computations
S. V. Dvoinishnikov, V. G. Meledin, and V. A. Pavlov 145
- Nonlinear Robust Control System for an Unsteady Nonaffine Dynamic Plant with a Delay
E. L. Eremin and E. A. Shelenok 151
- Detection of Suspicious Objects on the Basis of Analysis of Human X-ray Images
D. V. Svitov, V. A. Kulikov, and V. P. Kosykh 159
- Neural Network Classification of Hyperspectral Images on the Basis of the Hilbert–Huang
Transform
E. S. Nezhevenko, A. S. Feoktistov, and O. Yu. Dashevskii 165
- Analysis of Elevation Interpolation Methods for Creating Digital Elevation Models
A. I. Pavlova 171
-

Physical and Engineering Fundamentals of Microelectronics and Optoelectronics

- Hybrid Microcavity for Superminiature Single Quantum Dot Based Emitters
*V. A. Gaisler, I. A. Derebezov, A. V. Gaisler, D. V. Dmitriev, A. I. Toropov,
S. Fischbach, A. Schlehahn, A. Kaganskiy, T. Heindel, S. Bounouar, S. Rodt,
and S. Reitzenstein* 178

Charge Transport in Thin Hafnium and Zirconium Oxide Films <i>D. R. Islamov, V. A. Gritsenko, and A. Chin</i>	184
Development of a High-Voltage Waveguide Photodetector Comprised of Schottky Diodes and Based on the Ge-Si Structure with Ge Quantum Dots for Portable Thermophotovoltaic Converters <i>N. A. Pakhanov, O. P. Pchelyakov, A. I. Yakimov, and A. V. Voitsekhovskii</i>	190
Stochastic Simulation of Electron-Hole Recombination in Two-Dimensional and Three-Dimensional Inhomogeneous Semiconductors. Part II. Simulation Results <i>K. K. Sabelfeld and A. E. Kireeva</i>	197
