

**INFORMATION FOR CONTRIBUTORS to  
SEMICONDUCTOR PHYSICS, QUANTUM ELECTRONICS AND OPTOELECTRONICS**

*Semiconductor Physics, Quantum Electronics and Optoelectronics* is an international scientific journal publishing fundamental and applied papers (up to 15 pages) and short notes (up to 3 pages) in the area of:

- **semiconductor physics;**
- **hetero- and low-dimensional structures;**
- **physics of microelectronic devices;**
- **linear and nonlinear solid-state optics;**
- **optical storage and holography;**
- **optoelectronics and optoelectronic devices;**
- **quantum electronics;**
- **sensors.**

The journal accepts also advertisements and announcements of conferences as well as publications on related topics.

*Semiconductor Physics, Quantum Electronics and Optoelectronics* is published quarterly. Subscription requests should be sent to the Editorial Office.

Manuscripts should be submitted in duplicate in English and supplemented with a text file and figures on a diskette. An electronic copy may be submitted by e-mail.

The rules for submission of electronic copies are as follows:

1. An electronic copy should be submitted on a diskette or by e-mail simultaneously with sending a hard copy of the manuscript.
2. Acceptable text formats: plain text (.txt), rich text format (.rtf), tagged text (ASCII), MultiEdit (.txt), WordPerfect, MS Word (.rtf, .doc), PageMaker (.rtf, .pm).
3. Acceptable graphic formats for figures: EPS, TIFF, BMP, PCX, CDR, WMF, MS Word and MS Graf, MicroCalc Origin (opj), JPG. Figures created using software for mathematical and statistical calculations should be converted to one of these formats.

Manuscripts should be sent to:

**Editorial Board of Semiconductor Physics, Quantum Electronics and Optoelectronics**

Institute of Semiconductor Physics, NAS of Ukraine,  
41, prospect Nauky, 03028 Kyiv, Ukraine  
Phone: +380 (44) 525 6205, Fax: +380 (44) 525 5430  
E-mail: journal@isp.kiev.ua

**Manuscript preparation rules:**

*Manuscript submission forms* are available on the Internet:  
[www.journal-spqeo.org.ua](http://www.journal-spqeo.org.ua)

Manuscripts should be supplemented with:

*Official letter* signed by a chief manager of the institution where the work was performed. This rule does not apply to papers submitted by international groups of authors.

*Publication permission:* conclusion of a commission authorized to permit open publication of the paper (only for authors from Ukraine and other FSU countries).

*Agreement on copyright transfer* to the Publisher. Copyright transfer forms may be obtained from the Editorial Office. These are accessible on the Internet page above.

*Title Page:*

1. PACS and Universal Decimal Classification code (for authors from FSU). Several comma-separated codes are allowed. If no classification codes are indicated, the code(s) will be assigned by the Editorial Board.

2. Title of the paper and name(s) of the author(s).

3. Name of affiliated institution, full address, telephone and fax numbers, e-mail addresses (if available) for each author.

*Abstract:* up to 200 words, must be presented in English, Ukrainian and Russian. Before the abstract text one should indicate in the same language: the paper title, surnames and initials of all authors.

*Keywords:* their amount must not exceed eight word units. In the specific cases it is acceptable to use two- or three-word terms. These words must be placed under the abstract and written in the same language.

*Text* should be printed double-spaced on white paper (A4 format) with a 12-point font. Titles of the paper and sections should be typed with bold capitals.

*Equations* should be entered using MS Equation Editor. Papers with handwritten equations are not accepted. Notations should be defined when first appearing in the text.

*Tables* should be submitted on separate pages in the format of appropriate text processors (see above), or in the text format (with columns separated by periods, commas, semicolons, or tabulation characters). Use of pseudo-graphic characters is not allowed.

*List of references* should be double-spaced, with references numbered in order of their appearance in the text.

The format for references is as follows:

*Books:* Author(s) (initials, then last names), book title (in italics), publishers, city and year of publishing. (If reference is made to a particular chapter, indicate chapter title, book title in italics, and page numbers). Example: J. A. Hall, Imaging tubes, Chap. 14 in *The Infrared Handbook*, Eds. W. W. Wolfe, G. J. Zissis, pp. 132–176, ERIM, Ann Arbor, MI (1978).

*Journals:* Author(s) (initials, then last names), paper title, journal name in italics (use abbreviated names only for well-known journals), volume and issue numbers, page numbers, year of publishing. Example: N. Blutzer and A. S. Jensen, Current readout of infrared detectors // *Opt. Eng.* **26**(3), pp. 241–248 (1987).

*Captions for figures and tables* should be printed in the manuscript double-spaced after the list of references.

*Footnotes* should be avoided if possible.

*Pictures* will be scanned for digital reproduction. Only high-quality pictures can be accepted. Inscriptions and symbols should be printed inside. Negatives, slides, and transparencies are not accepted.

*Figures:* each figure should be printed on a separate page of the manuscript and have a size not exceeding 160×200 mm. For text in figures, use 10-point fonts. Measurement units should be indicated after a comma (not in parentheses). All figures are to be numbered in order of their appearance in the text, with sections denoted as (a), (b), etc. Placing figure numbers and captions inside figures is not allowed. On the back side, write with a pencil the paper title, author(s) name(s) and figure number, and mark the top side with an arrow.

*Photographs* should be submitted as original prints.

Color printing is possible if its cost is covered by the authors or their sponsors. For information about the rules and costs, contact the Executive Secretary.

## Contents

**1-8 Lowering the density of dislocations in heteroepitaxial III-nitride layers: Effect of sapphire substrate treatment (review)**

*P.V. Parphenyuk, A.A. Evtukh*

**9-13 Electron transport through nanocomposite SiO<sub>2</sub>(Si) films containing Si nanocrystals**

*O.L. Bratus, A.A. Evtukh, O.V. Steblova, V.M. Prokopchuk*

**14-22 Physical mechanisms and models of the long-term transformations in radiative recombination observed in *n*-GaAs under microwave irradiation**

*G.V. Milenin, R.A. Redko*

**23-27 Automated method for determining the etch pits density on crystallographic planes of large semiconductor crystals**

*G.S. Pekar, A.A. Singaevsky, A.F. Singaevsky*

**28-33 Search of mode wavelengths in planar waveguides by using the wave equation Fourier transform method**

*V.M. Fitio, V.V. Romakh, Ya.V. Bobitski*

**34-38 Acoustic-stimulated relaxation of GaAs<sub>1-x</sub>P<sub>x</sub> LEDs electroluminescence intensity**

*O.V. Konoreva, M.V. Lytovchenko, Ye.V. Malyi, Ya.M. Olikh, I.V. Petrenko, M.B. Pinkovska, V.P. Tartachnyk*

**39-43 Features of tensorresistance in single crystals of germanium and silicon with different dopants**

*P.I. Baranskii, G.P. Gaidar*

**44-46 Temperature effect on light polarization in uniaxial crystals**

*M.R. Kulish, V.M. Litvinova, M.I. Malysh, I.O. Sokolovskyi*

**47-51 Speckle pattern formation in spatially limited optical systems**

*M.M. Kotov, V.N. Kurashov, A.A. Goloborodko*

**52-56 Increasing the specularly of surface scattering of conduction electrons caused by adsorption of a hydrogen monolayer on the W(110) surface**

*S.V. Sologub, I.V. Bordenyuk, O.V. Kanash, R.H. Amirov*

**57-61 Optical properties of graphene film growing on a thin copper layer**

*T.S. Rozouvan, L.V. Poperenko, V.G. Kravets, I.A. Shaykevich*

**62-66 Peculiarities of photoluminescence spectra behavior in SiC crystals and films during phase transformations**

*S.I. Vlaskina, G.N. Mishinova, V.I. Vlaskin, V.E. Rodionov, G.S. Svechnikov*

**67-74 Analysis of the silicon solar cells efficiency. Type of doping and level optimization**

*A.V. Sachenko, V.P. Kostylyov, M.V. Gerasymenko, R.M. Korkishko, M.R. Kulish, M.I. Slipchenko, I.O. Sokolovskyi, V.V. Chernenko*

**75-78 Thermally stimulated conductivity in InGaAs/GaAs quantum wire heterostructures**

*S.A. Iliash, S.V. Kondratenko, A.S. Yakovliev, Vas.P. Kunets, Yu.I. Mazur, G.J. Salamo*

**79-83 Electrical and optical parameters of Cu<sub>6</sub>PS<sub>5</sub>I-based thin films deposited using magnetron sputtering**

*I.P. Studenyak, A.V. Bendak, V.Yu. Izai, P.P. Guranich, P. Kúš, M. Mikula, B. Grančič, M. Zahoran, J. Greguš, A. Vincze, T. Roch, T. Plecenik*

**84-89 Optimization of surface plasmon resonance based biosensor for clinical diagnosis of the Epstein–Barr herpes virus disease**

*R.V. Khrystosenko*

**90-97 Microanalysis of magnetic structure of yttrium-iron garnet films by scanning probe microscopy methods**

*O.I. Synhaivska, P.M. Lytvyn, I.P. Yaremiy, A.O. Kotsyubynsky, V.V. Kozub, V.S. Solnsteu, I.V. Prokopenko*

**98-108 Electronic structure of 2H-SnSe<sub>2</sub>: *ab initio* modeling and comparison with experiment**

*D.I. Bletska, K.E. Glukhov, V.V. Frolova*

**109-115 Carbon ceramics from plants: Graphitization of biomorphic matrixes**

*D.A. Iarmolenko, A.E. Belyaev, V.S.Kiselov*

**116-123 The charge trapping/emission processes in silicon nanocrystalline nonvolatile memory assisted by electric field and elevated temperatures**

*V.A. Ievtukh, V.V. Ulyanov, A.N. Nazarov*

**124 Information for contributors**

**125-126 Contents**

**127 Publication Ethics and Publication Malpractice Statement**