

# Semiconductor Physics Quantum Electronics & Optoelectronics



## MASTER ARTICLE CONTENT

Volume 27

2024



[Scimago Journal & Country Rank](#)

SPQEO has been selected for **List of Science qualified edition of Ukraine** by Ministry of Education and Science of Ukraine - **Level A**

[Top-10 Ukrainian Journals by h-index](#)

SPQEO has been selected for coverage in Clarivate Analytics products and services since **2018**

[Web of Science Core Collection: Emerging Sources Citation Index](#)

SPQEO has been accepted for coverage in selected Elsevier products starting with **2019**

[SCOPUS CiteScore](#)

OUCI

Clarivate  
Analytics

ELSEVIER  
SCOPUS

Registered by the National Council of Ukraine on Television and Radio Broadcasting #1670 by 23.05.2024

SPQEO published since 1998

[www.journal-spqeo.org.ua](http://www.journal-spqeo.org.ua)

E-mail: [journal@journal-spqeo.org.ua](mailto:journal@journal-spqeo.org.ua)  
[journal@isp.kiev.ua](mailto:journal@isp.kiev.ua)



**Editorial Board Address:**

41, prospect Nauky, 03028 Kyiv, Ukraine

Phone: +380 (44) 525 6497

© V. Lashkaryov Institute of Semiconductor Physics  
of the NAS of Ukraine

© Publisher PH "Akademperiodyka" of the NAS of  
Ukraine

## RUBRICATION

---

<b>EDITORIAL</b>	<b>3</b>
<b>SEMICONDUCTOR PHYSICS</b>	<b>3</b>
<b>HETERO- AND LOW-DIMENSIONAL STRUCTURES</b>	<b>6</b>
<b>OPTICS</b>	<b>6</b>
<b>OPTOELECTRONICS AND OPTOELECTRONIC DEVICES</b>	<b>7</b>
<b>SENSORS</b>	<b>8</b>
<b>AUTHORS INDEX</b>	<b>8</b>

---

**[Link of MASTER ARTICLE CONTENT 2023](#)**

*[http://journal-spqeo.org.ua/n4\\_2023/SPOEO\\_MAC\\_2023.pdf](http://journal-spqeo.org.ua/n4_2023/SPOEO_MAC_2023.pdf)*

**[Link of MASTER ARTICLE CONTENT 2022](#)**

*[http://journal-spqeo.org.ua/SPOEO\\_MAC\\_2022.pdf](http://journal-spqeo.org.ua/SPOEO_MAC_2022.pdf)*

**[Link of MASTER ARTICLE CONTENT 2021](#)**

*[http://journal-spqeo.org.ua/SPOEO\\_MAC\\_2021.pdf](http://journal-spqeo.org.ua/SPOEO_MAC_2021.pdf)*

**[Link of MASTER ARTICLE CONTENT 2020](#)**

*[http://journal-spqeo.org.ua/SPOEO\\_MAC\\_2020.pdf](http://journal-spqeo.org.ua/SPOEO_MAC_2020.pdf)*

**[Link of MASTER ARTICLE CONTENT 2018-2019](#)**

*[http://journal-spqeo.org.ua/SPOEO\\_MAC\\_2019.pdf](http://journal-spqeo.org.ua/SPOEO_MAC_2019.pdf)*

## EDITORIAL

Belyaev A.E., Smertenko P.S. (2024). **Science in 2025-2027 and the SPQEO journal.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(1), 004-009. <https://doi.org/10.15407/spqeo27.01.004>. Full text is Open Access

Belyaev A., Maksimenko Z. & Smertenko P. (2024). **Metal oxides for electronics and the SPQEO journal.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(2), 130-135. <https://doi.org/10.15407/spqeo27.02.130>. Full text is Open Access

Smertenko P., Pekur D., Sorokin V., Maksimenko Z. (2024). **Optoelectronics and the SPQEO journal.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(3), 256-260. <https://doi.org/10.15407/spqeo27.03.256>. Full text is Open Access

Tsybrii Z., Golenkov O., Maksimenko Z., Smertenko P. (2024). **Development of terahertz approaches for optoelectronics and the SPQEO journal.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(4), 384-388. <https://doi.org/10.15407/spqeo27.04.384>. Full text is Open Access

## SEMICONDUCTOR PHYSICS

Sachenko A.V., Kostylyov V.P., Evstigneev M. (2024). **Space charge region recombination in highly efficient silicon solar cells.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(1), 010-027. <https://doi.org/10.15407/spqeo27.01.010>. Full text is Open Access

Efremov A.A., Romaniuk B.M., Melnyk V.P., Stadnik O.A., Sabov T.M., Kulbachinskiy O.A., Dubikovskiy O.V. (2024). **Study of fractality nature in VO<sub>2</sub> films and its influence on metal-insulator phase transition.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(1), 028-039. <https://doi.org/10.15407/spqeo27.01.028>. Full text is Open Access

Malakhovska T.O., Pogodin A.I., Filep M.J., Mariychuk R., Pop M.M., Studenyak Ya.I., Vakulchak V.V., Komanicky V., Vorobiov S., Sabov M.Yu. (2024). **Structure and optical characterization of chitosan-chitin/Ag nanocomposite thin films.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(1), 040-053. <https://doi.org/10.15407/spqeo27.01.040>. Full text is Open Access

Lukianov A.M., Dusheiko M.G., Lozinskii V.B., Temchenko V.P., Dikusha V.N., Klyui N.I. (2024). **Effect of annealing in air on the properties of carbon-rich amorphous silicon carbide films.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(1), 054-063. <https://doi.org/10.15407/spqeo27.01.054>. Full text is Open Access

Vella Durai S.C., Kumar E., Indira R. (2024). **Green route to prepare zinc oxide nanoparticles using *Moringa oleifera* leaf extracts and their structural, optical and impedance spectral properties.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(1), 064-069. <https://doi.org/10.15407/spqeo27.01.064>. Full text is Open Access

Korsunskaya N.O., Polishchuk Yu.O., Markevich I.V., Kozoriz K.O., Ponomaryov S.S., Melnichuk O.V., Stara T.R., Melnichuk L.Yu., Khomenkova L.Yu. (2024). **The dependence of electrical conductivity of Mg<sub>x</sub>Zn<sub>1-x</sub>O ceramics on phase composition.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(1), 070-078. <https://doi.org/10.15407/spqeo27.01.070>. Full text is Open Access

Valakh M.Ya., Yukhymchuk V.O., Dzhagan V.M., Isaieva O.F., Yefanov V.S., Romanyuk B.M. (2024). **Variation of the metal-insulator phase transition temperature in VO<sub>2</sub>: An overview of some possible implementation methods.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(2), 136-150. <https://doi.org/10.15407/spqeo27.02.136>. Full text is Open Access

- Savchenko D.V., Ivanchenko I.V., Popenko N.A., Bekirov B.E., Kalabukhova E.N. (2024). **Electronic and magnetic properties of  $Zn_{1-x}Mn_xSe:Fe^{2+},Cr^{2+}$  ( $x = 0.3$ ) single crystals.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(2), 151-156.  
<https://doi.org/10.15407/spqeo27.02.151>. Full text is Open Access
- Milenin G.V., Redko R.A. (2024). **Quantum features of low-energy photoluminescence of aluminum nitride films.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(2), 157-161.  
<https://doi.org/10.15407/spqeo27.02.157>. Full text is Open Access
- Amrin M.I., Roshan M.M., SaiGowri R., Vella Durai S.C. (2024). **Green synthesis of silver oxide nanoparticles using *Trigonella foenum-graecum* leaf extract and their characterization.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(2), 162-168.  
<https://doi.org/10.15407/spqeo27.02.162>. Full text is Open Access
- Shender I.O., Pogodin A.I., Filep M.J., Malakhovska T.O., Kokhan O.P., Bilanych V.S., Babuka T.Ya., Izai V.Yu. (2024). **Microhardness of single-crystal samples of  $Ag_{7+x}(P_{1-x}Ge_x)S_6$  solid solutions.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(2), 169-175.  
<https://doi.org/10.15407/spqeo27.02.169>. Full text is Open Access
- Rose M.M., Christy R.S., Benitta T.A., Kumaran J.T.T. (2024). **Phase transition and comparative study of  $Cu_xCd_{1-x}S$  ( $x = 0.8, 0.6, 0.4,$  and  $0.2$ ) nanoparticle system.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(2), 176-183.  
<https://doi.org/10.15407/spqeo27.02.176>. Full text is Open Access
- Kazimov M.V., Ibragimov G.B. (2024). **Fabrication and performance characterization of  $Sb_2Se_3$ -GaSe eutectic systems.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(2), 184-188.  
<https://doi.org/10.15407/spqeo27.02.184>. Full text is Open Access
- Niftiyev N.N., Dachdemirov A.O., Mammadov F.M., Muradov M.B. (2024). **Frequency dispersion of dielectric coefficients of  $MnGaInTe_4$  crystals.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(2), 189-193.  
<https://doi.org/10.15407/spqeo27.02.189>. Full text is Open Access
- Dmytruk I.M., Berezovska N.I., Hrabovskyi Ye.S., Pundyk I.P., Mamykin S.V., Romanyuk V.R., Dmytruk A.M. (2024). **The influence of ultrafast laser processing on morphology and optical properties of Au-GaAs composite structure.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(3), 261-268.  
<https://doi.org/10.15407/spqeo27.03.261>. Full text is Open Access
- Milenin G.V., Redko R.A. (2024). **Analysis of the transformation of radiative recombination spectra of  $n$ -GaN after magnetic field treatments based on the queueing theories concept.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(3), 269-273.  
<https://doi.org/10.15407/spqeo27.03.269>. Full text is Open Access
- Okhrimenko O.B., Bacherikov Yu.Yu., Kolomys O.F., Maziar D.M., Strelchuk V.V., Lytvyn V.K., Konakova R.V. (2024). **Redistribution of radiative recombination centers in the SiC/por-SiC/ $Dy_2O_3$  structure under the influence of athermal microwave irradiation.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(3), 274-279.  
<https://doi.org/10.15407/spqeo27.03.274>. Full text is Open Access
- Pogodin A.I., Shender I.O., Pop M.M., Filep M.J., Malakhovska T.O., Kokhan O.P., Izai V.Yu., Mariychuk R. (2024). **Particularities of optical behavior of  $Ag_8SiS_6$  single crystal.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(3), 280-286.  
<https://doi.org/10.15407/spqeo27.03.280>. Full text is Open Access

Dharmarajan P., Sathishkumar P., Gracelin Juliana S., Ramanathan G., Vella Durai S.C. (2024). **Phytosynthesis of titanium dioxide nanoparticles using *Cynodon dactylon* leaf extract and their antibacterial activity.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(3), 287-293. <https://doi.org/10.15407/spqeo27.03.287>. [Full text is Open Access](#)

Ismaylov B.K., Zikrillayev N.F., Ismailov K.A., Kenzhaev Z.T. (2024). **Physical mechanism of gettering of impurity Ni atom clusters in Si lattice.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(3), 294-297. <https://doi.org/10.15407/spqeo27.03.294>. [Full text is Open Access](#)

Gochuyeva A.F. (2024). **Thermophysical properties of manganese ferrite nanoparticles and manganese ferrite samples irradiated with  $\gamma$ -rays.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(3), 298-301. <https://doi.org/10.15407/spqeo27.03.298>. [Full text is Open Access](#)

Parchinskiy P.B., Gazizulina A.S., Nasirov A.A., Yuldashev Sh.U. (2024). **Anisotropic magnetoresistance of GaMnAs:Be.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(3), 302-307. <https://doi.org/10.15407/spqeo27.03.302>. [Full text is Open Access](#)

Shmahlii S. and Sarikov A. (2024). **Influence of extended defects on melting behavior of 3C-SiC by molecular dynamics simulations.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(4), 389-396. <https://doi.org/10.15407/spqeo27.04.389>. [Full text is Open Access](#)

Melezhyk Ye.O., Tsybrii Z.F., Zabudsky V.V., Kukhtaruk N.I., Strelchuk V.V., Nikolenko A.S., Kolomys O.F., Popenko V.I., Maziar D.M., Alieksandrov M.A., Lytvyn P.M. (2024). **Numerical estimations of the maximal distance of target detection in the IR spectrum with decreasing the target-background temperature contrast.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(4), 397-403. <https://doi.org/10.15407/spqeo27.04.397>. [Full text is Open Access](#)

Stronski A.V., Shportko K.V., Kochubei H.K., Popovych M.V., Lotnyk A.A. (2024). **X-ray diffraction and Raman spectroscopy studies of Ga-Ge-Te alloys.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(4), 404-411. <https://doi.org/10.15407/spqeo27.04.404>. [Full text is Open Access](#)

Yukhymchuk V.O., Gudymenko O.Yo., Sabov T.M., Dubikovskiy O.V., Mazur N.V., Yefanov V.S., Kosulya O.V., Oberemok O.S., Romanyuk B.M. (2024). **Formation and properties of GeSn:C films on silicon substrates.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(4), 412-417. <https://doi.org/10.15407/spqeo27.04.412>. [Full text is Open Access](#)

Ievtushenko A.I., Karpyna V.A., Kolomys O.F., Mamykin S.V., Lytvyn P.M., Bykov O.I., Korchovyi A.A., Starik S.P., Bilorusets V.V., Popenko V.I., Strelchuk V.V., Baturin V.A., Karpenko O.Y. (2024). **The effect of substrate bias voltage on the properties of Al-doped ZnO films deposited by magnetron sputtering.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(4), 418-426. <https://doi.org/10.15407/spqeo27.04.418>. [Full text is Open Access](#)

Ahmad B.M., Abulla H.T., Rammoo M.N.S. (2024). **Theoretical calculations of the properties of the binary compound semiconductor GaSb.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(4), 427-435. <https://doi.org/10.15407/spqeo27.04.427>. [Full text is Open Access](#)



Voronov S.O., Kazmirenko V.A., Poplavko Yu.M. (2024). **Thermoelastic polarization and other effects in polar semiconductors.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(4), 436-443.  
<https://doi.org/10.15407/spqeo27.04.436>. Full text is Open Access

#### HETERO- AND LOW-DIMENSIONAL STRUCTURES

Datsenko O.I., Kravchenko V.M., Golovynskyi S. (2024). **Electron levels of defects in In(Ga)As/(In)GaAs nanostructures: A review.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(2), 194-207.  
<https://doi.org/10.15407/spqeo27.02.194>. Full text is Open Access

Pylypova O.V., Korbutyak D.V., Tokarev V.S., Pylypov A., Evtukh A.A. (2024). **Composite polymer films with semiconductor nanocrystals for organic electronics and optoelectronics.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*. 27(2), 208-215.  
<https://doi.org/10.15407/spqeo27.02.208>. Full text is Open Access

Kovalchuk O.V., Prochazkova J., Kolanowska A., Boncel S., Mariano J., Zolochesvska K., Kovalchuk T.M., Kopčanský P., Safarik I. (2024). **Effect of modification of nonwoven textiles with biochar and multi-walled carbon nanotubes on their dielectric properties.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*. 27(3). 308-314.  
<https://doi.org/10.15407/spqeo27.03.308>. Full text is Open Access

#### OPTICS

Nasieka Iu.M., Strelnitskij V.E., Opalev O.A., Gritsina V.I., Koshevyi K.I., Horobei O.Ya., Lementaryov V.V., Trokhaniak V.I., Boyko M.I. (2024). **Difference in the structure and morphology of CVD diamond films grown on negatively charged and grounded substrate holders: Optical study.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(1), 079-089. <https://doi.org/10.15407/spqeo27.01.079>. Full text is Open Access

Ilchenko S.G., Taranenko V.B. (2024). **Asymmetry of resonant forward/backward reflectivity of metal – multilayer-dielectric nanostructure.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(1), 090-094.  
<https://doi.org/10.15407/spqeo27.01.090>. Full text is Open Access

Kovanzhi P.O., Hyrman I.H., Kravets V.G., Kondratenko O.S., Poperenko L.V. (2024). **The conductivity effect of the top coating on optical properties of thin Cu(Ag)-layered structures.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(1), 095-108.  
<https://doi.org/10.15407/spqeo27.01.095>. Full text is Open Access

Hudzenko I.I., Lopatynskyi A.M., Lytvyn V.K., and Chegel V.I. (2024). **Concentration-dependent spectral rearrangement of photoluminescence in the nanocomposite material “polycarbonate matrix – gold nanostructures – multidomain HTH dye”.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(3), 315-319.  
<https://doi.org/10.15407/spqeo27.03.315>. Full text is Open Access

Yalçınkaya A., Çetin A. (2024). **Characteristic frequencies of transverse electric modes in a double negative slab waveguide with Kerr-type nonlinearity.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(3), 320-327.  
<https://doi.org/10.15407/spqeo27.03.320>. Full text is Open Access

Malakhovska T.O., Pogodin A.I., Filep M.J., Studenyak Ya.I., Kokhan O.P., Izai V.Yu., Mariychuk R. (2024). **Optical characteristics of microcrystalline powders of  $\text{Ag}_{7+x}(\text{P}_{1-x}\text{Si}_x)\text{S}_6$  solid solutions.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(4), 444-449. <https://doi.org/10.15407/spqeo27.04.444>. Full text is Open Access

Yavorskyi P.V., Pop O.M., Maslyuk V.T. (2024). **Sensory properties of dosimetric materials under conditions of parameter fluctuations: Monte Carlo method.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(4), 450-456.  
<https://doi.org/10.15407/spqeo27.04.450>. [Full text is Open Access](#)

## OPTOELECTRONICS AND OPTOELECTRONIC DEVICES

Baki A.Q., Tawfeeq S.K. (2024). **Numerical study of single-layer and interlayer grating polarizers based on metasurface structures for quantum key distribution systems.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(1), 109-116.  
<https://doi.org/10.15407/spqeo27.01.109>. [Full text is Open Access](#)

Degtyarev A.V., Dubinin M.M., Gurin O.V., Maslov V.O., Muntean K.I., Ryabykh V.N., Senyuta V.S., Svystunov O.O. (2024). **Properties of focused combined modes of terahertz laser.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(2), 216-223.  
<https://doi.org/10.15407/spqeo27.02.216>. [Full text is Open Access](#)

Bouزيد F., Kayahan E., Saeed M.A., Babes B., Ghoneim S.S.M., Pezzimenti F. (2024). **Modeling and simulation of a high power InGaP/GaAs heterojunction alphavoltaic battery irradiated by americium-241.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(2), 224-234. <https://doi.org/10.15407/spqeo27.02.224>. [Full text is Open Access](#)

Budnyk O.P., Chumak M.E., Stratilat D.P., Tartachnyk V.P. (2024). **Spectral features of pristine and irradiated white emitting InGaN LEDs with quantum wells.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(2), 235-241.  
<https://doi.org/10.15407/spqeo27.02.235>. [Full text is Open Access](#)

Kornaga V.I., Pekur D.V., Kolomzarov Yu.V., Minyaylo M.A., Sorokin V.M. (2024). **Design of powerful high-performance drivers for special-purpose LED lighting systems.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(2), 242-249.  
<https://doi.org/10.15407/spqeo27.02.242>. [Full text is Open Access](#)

Degtyarev A.V., Dubinin M.M., Maslov V.O., Muntean K.I., Svystunov O.O. (2024). **Tight focusing of terahertz vortex beams formed by laser dielectric resonator.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(3), 328-336.  
<https://doi.org/10.15407/spqeo27.03.328>. [Full text is Open Access](#)

Fatihi D., Bhandari M.P., Golovynskyi S., Abderrafi K., Adhiri R. (2024). **Increasing the efficiency of CIGS solar cells due to the reduced graphene oxide field layer of the back surface.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(3), 337-347.  
<https://doi.org/10.15407/spqeo27.03.337>. [Full text is Open Access](#)

Kornaga V.I., Pekur D.V., Kolomzarov Yu.V., Chernenko V.V., Korkishko R.M., Dvernikov B.F., Snopok B.A., Sorokin V.M. (2024). **LED lighting systems for special applications with a wide range of supply voltages.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(3), 348-355.  
<https://doi.org/10.15407/spqeo27.03.348>. [Full text is Open Access](#)

Sapon S.V., Boltovets M.S., Kulbachynskyi O.A., Zabudsky V.V., Golenkov O.G., Korotyeyev V.V., Efremov A.A. (2024). **Properties of InSb photodiodes fabricated by ion implantation.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(3), 356-365.  
<https://doi.org/10.15407/spqeo27.03.356>. [Full text is Open Access](#)

Sapon S.V., Romaniuk B.M., Melnik V.P., Dubikovskiy O.V., Kulbachynskiy O.A., Oberemok O.S., Maksimenko Z.V., Kosulya O.V., Korotyeyev V.V., Sokolov V.N., Bychok A.V. (2024). **Si-based  $n^{++}-p^{-}-p^{+}-p^{-}-p^{++}$  avalanche diode: Self-consistent modeling for infrared optoelectronic applications.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(4), 457-465. <https://doi.org/10.15407/spqeo27.04.457>. [Full text is Open Access](#)

Mamykin S.V., Romanyuk V.R., Mynko V.I., Indutnyi I.Z., Redko R.A., Dusheyko M.G., Mamontova I.B., Lyaschuk Yu.M., Savchuk Ye.M., Shtykalo O.V., Tochkovyi V.O., Semikina T.V., Kuznetsova D.A. (2024). **Dust-insensitive smoke detector based on plasmon-polariton photodetector.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(4), 466-471. <https://doi.org/10.15407/spqeo27.04.466>. [Full text is Open Access](#)

Borkovska L.V., Kyslyi V.P., Morozhenko V.O., Soloviev E.O., Serozkin Yu.G., Nastych V.M. (2024). **Detection of buried mines and other explosive devices using a single-beam laser Doppler vibrometer.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(4), 472-477. <https://doi.org/10.15407/spqeo27.04.472>. [Full text is Open Access](#)

## SENSORS

Fedorenko A.V., Bozhko K.M., Kachur N.V., Kosiakovskiy A.V., Maslov V.P. (2024). **Optical and electrical properties of zinc oxide nanofilms deposited using the sol-gel method.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(1), 117-123. <https://doi.org/10.15407/spqeo27.01.117>. [Full text is Open Access](#)

Kiv A.E., Soloviev V.N., Bielinskiy A.O., Slusarenko M.A., Kavetsky T.S., Šauša O., Švajdlenková H., Donchev I.I., Hoivanovych N.K., Pankiv L.I., Nykolaishyn O.V., Mushynska O.R., Zubrytska O.V., Tuzhykov A.V., Kushniyazova M. (2024). **Multifractal signatures of light-driven self-organization in acrylated epoxidized soybean oil polymers.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(3), 366-377. <https://doi.org/10.15407/spqeo27.03.366>. [Full text is Open Access](#)

Kukla O.L., Shirshov Yu.M., Biletskiy A.I., Fedchenko O.N. (2024). **Spectral SPR effect in thin films of high-conductive metals and features of SPR-biosensors implementation in chromatic mode.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(4), 478-488. <https://doi.org/10.15407/spqeo27.04.478>. [Full text is Open Access](#)

Redko R.A., Mamykin S.V., Kondratenko O.S., Savchuk Ye.M. (2024). **Magnetic field induced anomalous shift of plasmon resonance peak in Al-based plasmon-polariton photodetectors.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(4), 489-494. <https://doi.org/10.15407/spqeo27.04.489>. [Full text is Open Access](#)

Bacherikov Yu.Yu., Okhrimenko O.B., Pekur D.V., Ponomarenko V.V., Sadigov A., Lyubchik S.B., Lyubchik S.I. (2024). **Multifunctional spectrophotometric sensor based on photosensitive capacitor.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(4), 495-501. <https://doi.org/10.15407/spqeo27.04.495>. [Full text is Open Access](#)

Samoylov A.V., Khristosenko R.V., Gridina N.Ya., Dorozinsky G.V., Romanchuk V.V., Khomenkova L.Yu. (2024). **Dual-channel SPR biosensor for enhanced glioma relapse diagnostics: Blood cell aggregation as a biomarker for tumor malignancy.** *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(4), 502-508. <https://doi.org/10.15407/spqeo27.04.502>. [Full text is Open Access](#)

---

## AUTHORS INDEX

**Authors index 2024.** (2024). *Semiconductor Physics, Quantum Electronics and Optoelectronics*, 27(4), 509-515. [Full text is Open Access.](#)