

Ֆիզիկայի գիտահետազոտական ինստիտուտ

Առաջադեմ ֆունկցիոնալ մատերիալների լաբորատորիա
Գիտական աշխատող

📖 Հրապարակումներ

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In-Plane Directional MoS₂ Emitter Employing Dielectric Nanowire Cavity

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Small Structures 2025 2400476

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Leveraging Femtosecond Laser Ablation for Tunable Near-Infrared Optical Properties in MoS₂-Gold Nanocomposites

Aleksey V. Arsenin, Alexey D. Bolshakov, Ilya A. Zavidovskiy, Ilya V. Martynov, Daniil I. Tselikov,
Alexander V. Syuy, Anton A. Popov, Sergey M. Novikov, Andrei V. Kabashin, Gleb I. Tselikov,
Valentyn S. Volkov
Nanomaterials 2024 1961

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Elastic Gallium Phosphide Nanowire Optical Waveguides—Versatile Subwavelength Platform for Integrated Photonics

Alexey Kuznetsov, Eduard Moiseev, Artem N. Abramov, Nikita Fominykh, Vladislav A. Sharov,
Valeriy M. Kondratev, Ivan I. Shishkin, Konstantin P. Kotlyar, Demid A. Kirilenko, Vladimir V. Fedorov,
Svetlana A. Kadinskaya, Alexandr A. Vorobyev, Ivan S. Mukhin, Aleksey V. Arsenin, Valentyn S. Volkov,
Vasily Kravtsov, Alexey D. Bolshakov
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Self-assembled photonic structure: a Ga optical antenna on GaP nanowires

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Alexandr A. Vorobyev, Konstantin P. Kotlyar, Evgeniy V. Ubyivovk, Vladimir V. Fedorov, George E. Cirlin,
Ivan S. Mukhin, Aleksey V. Arsenin, Valentyn S. Volkov, Alexey D. Bolshakov
Nanoscale 2023 2332 - 2339

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Numerical Study of GaP Nanowires: Individual and Coupled Optical Waveguides and Resonant Phenomena

Maria A. Anikina, Prithu Roy, Svetlana A. Kadinskaya, Alexey Kuznetsov, Valeriy M. Kondratev,
Alexey D. Bolshakov

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Deep-Level Emission Tailoring in ZnO Nanostructures Grown via Hydrothermal Synthesis

Alexey D. Bolshakov, Svetlana A. Kadinskaya, Valeriy M. Kondratev, Ivan K. Kindyushov, Olga Yu. Koval, Dmitry I. Yakubovsky, Alexey Kusnetsov, Alexey I. Lihachev, Alexey V. Nashchekin, Irina Kh. Akopyan, Alexey Yu. Serov, Mariana E. Labzovskaya, Sergey V. Mikushev, Boris V. Novikov, Igor V. Shtrom
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Photoluminescence anisotropy in hybrid nanostructures based on gallium phosphide nanowire and 2D transition metal dichalcogenides

MA Anikina, A Kuznetsov, AN Toksumakov, VV Dremov, DA Ghazaryan, VV Fedorov, AV Arsenin, VS Volkov, AD Bolshakov
St. Petersburg State Polytechnical University Journal: Physics and Mathematics 2023 3.2

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Si Nanowire-Based Schottky Sensors for Selective Sensing of NH₃ and HCl via Impedance Spectroscopy

Valeriy M. Kondratev, Ekaterina A. Vyacheslavova, Talgat Shugabaev, Demid A. Kirilenko, Alexey Kuznetsov, Svetlana A. Kadinskaya, Zamir V. Shomakhov, Artem I. Baranov, Svetlana S. Nalimova, Vyacheslav A. Moshnikov, Alexander S. Gudovskikh, Alexey D. Bolshakov
ACS Applied Nano Materials 2023 11513 - 11523

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Single GaP nanowire nonlinear characterization with the aid of an optical trap

Alexey D. Bolshakov, Ivan Shishkin, Andrey Machnev, Mihail Petrov, Demid A. Kirilenko, Vladimir V. Fedorov, Ivan S. Mukhin, Pavel Ginzburg
Nanoscale 2022 993 - 1000

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Anisotropic Radiation in Heterostructured “Emitter in a Cavity” Nanowire

Alexey D. Bolshakov, Alexey Kuznetsov, Prithu Roy, Valeriy M. Kondratev, Vladimir V. Fedorov, Konstantin P. Kotlyar, Rodion R. Reznik, Alexander A. Vorobyev, Ivan S. Mukhin, George E. Cirlin
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Silicon Nanowire-Based Room-Temperature Multi-environment Ammonia Detection

Alexey D. Bolshakov, Valeriy M. Kondratev, Ivan A. Morozov, Ekaterina A. Vyacheslavova, Demid A. Kirilenko, Alexey Kuznetsov, Svetlana A. Kadinskaya, Vyacheslav A. Moshnikov, Alexander S. Gudovskikh, Svetlana S. Nalimova
ACS Applied Nano Materials 2022 9940 - 9949

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XRD Evaluation of Wurtzite Phase in MBE Grown Self-Catalyzed GaP Nanowires

Alexey D. Bolshakov, Olga Yu. Koval, Vladimir V. Fedorov, Igor E. Eliseev, Sergey V. Fedina, Georgiy A. Sapunov, Stanislav A. Udovenko, Liliia N. Dvoretckaja, Demid A. Kirilenko, Roman G. Burkovsky, Ivan S. Mukhin

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Work function tailoring in gallium phosphide nanowires

Alexey Bolshakov, Vladislav Sharov, Prokhor Alekseev, Vladimir Fedorov, Mikhail Nestoklon,
Alexander Ankudinov, Demid Kirilenko, Georgy Sapunov, Olga Koval, George Cirlin, Ivan Mukhin
Applied Surface Science 2021 150018

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Tailoring Morphology and Vertical Yield of Self-Catalyzed GaP Nanowires on Template-Free Si Substrates

Alexey D. Bolshakov, Vladimir V. Fedorov, Yury Berdnikov, Nickolay V. Sibirev, Sergey V. Fedina,
Georgiy A. Sapunov, Liliia N. Dvoretckaia, George Cirlin, Demid A. Kirilenko, Maria Tchernycheva,
Ivan S. Mukhin
Nanomaterials 2021 1949

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Gallium Phosphide Nanowires in a Free-Standing, Flexible, and Semitransparent Membrane for Large-Scale Infrared-to-Visible Light Conversion

Alexey Bolshakov, Vladimir V. Fedorov, Sergey V. Makarov, Olga Sergaeva, Vladimir Neplokh,
Daria Markina, Stephanie Bruyere, Grégoire Saerens, Mihail I. Petrov, Rachel Grange, Maria Timofeeva,
Ivan S. Mukhin
ACS Nano 2020 10624 - 10632

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Perovskite-Gallium Phosphide Platform for Reconfigurable Visible-Light Nanophotonic Chip

Alexey Bolshakov, Pavel Trofimov, Anatoly P. Pushkarev, Ivan S. Sinev, Vladimir V. Fedorov,
Stéphanie Bruyère, Ivan S. Mukhin, Sergey V. Makarov
ACS Nano 2020 8126 - 8134
