

Ֆիզիկայի գիտահետազոտական ինստիտուտ

Առաջադեմ ֆունկցիոնալ մատերիալների լաբորատորիա
Գիտական աշխատող

📖 Հրատարակումներ

Հոդված

Topographically-guided van der Waals epitaxy: Selective growth of AlN nanowalls on h-BN step edges

Albert M. Dautov, Vladimir G. Dubrovskii, Talgat Shugabaev, Vera V. Lendyashova, Konstantin P. Kotlyar, Alexey Kuznetsov, Prokhor A. Alekseev, Mikhail E. Popov, Igor V. Shtrom, Adilet Toksumakov, Davit Ghazaryan, Alesya V. Parfeneva, Aleksey V. Arsenin, Alexey D. Bolshakov, George E. Cirlin, Vladislav O. Gridchin
Materials Science in Semiconductor Processing 2026 110293

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In-Plane Directional MoS2 Emitter Employing Dielectric Nanowire Cavity

Alexey Kuznetsov, Maria Aleksandrovna Anikina, Adilet Nurlanbekovich Toksumakov, Artem Nikolaevich Abramov, Vyacheslav Vsevolodovich Dremov, Eseniya Zavyalova, Valeriy Mikhailovich Kondratev, Vladimir Victorovich Federov, Ivan Sergeevich Mukhin, Vasily Kravtsov, Kostya Sergeevich Novoselov, Aleksey Vladimirovich Arsenin, Valentyn Sergeevich Volkov, Davit Armenovich Ghazaryan, Alexey Dmitrievich Bolshakov
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Epitaxial Growth of AlN Nanowires on Two-Dimensional h-BN Flakes Transferred Onto SiO2/Si Substrate

Albert Dautov, Talgat Shugabaev, Alexey Kuznetsov, Konstantin Kotlyar, Davit Ghazaryan, Adilet Toksumakov, Alexey Bolshakov, Alesya Parfeneva, George Cirlin, Vladislav Gridchin
International Conference of Young Specialists on Micro/Nanotechnologies and Electron Devices, EDM 2025 100-103

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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
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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

Alexey Kuznetsov, Prithu Roy, Dmitry V. Grudinin, Valeriy M. Kondratev, Svetlana A. Kadinskaya,
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

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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,

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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 Kuznetsov, 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

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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. Dvoretckaia, Demid A. Kirilenko, Roman G. Burkovsky, Ivan S. Mukhin
Nanomaterials 2021 960

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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
