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Language skills

English Русский

Publications

Article
Inelastic resonant tunnelling through adjacent localised electronic states in van der Waals heterostructures
E. E. Vdovin, K. Kapralov, Yu. N. Khanin, A. Margaryan, K. Watanabe, T. Taniguchi, C. Yang, S. V. Morozov, D. A. Svintsov, K. S. Novoselov, D. A. Ghazaryan
npj 2D Materials and Applications 2025 7

Article
Artificial intelligence guided search for van der Waals materials with high optical anisotropy
Liudmila A. Bereznikova, Ivan A. Kruglov, Georgy A. Ermolaev, Ivan Trofimov, Congwei Xie, Arslan Mazitov, Gleb Tselikov, Anton Minnekhanov, Alexey P. Tsapenko, Maxim Povolotsky, Davit A. Ghazaryan, Aleksey V. Arsenin, Valentyn S. Volkov, Kostya S. Novoselov
Materials Horizons 2025 1953 - 1961

Article
Optical Properties of Biaxial van der Waals Crystals for Photonic Applications
A. Slavich, G. Ermolaev, I. Zavidovskiy, D. Grudinin, M. Tatmyshevskiy, A. Toksumakov, A. Syuy, A. Vyshnevyy, D. Yakubovsky, S. Novikov, D. Ghazaryan, A. Arsenin, V. Volkov
Bulletin of the Russian Academy of Sciences: Physics 2025 S433 - S438

Article
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
Small Structures 2025 2400476

Article
E-beam induced micropattern generation and amorphization of L-cysteine-functionalized graphene oxide nano-composites
Y. Melikyan, H. Gharagulyan, A. Vasil'ev, V. Hayrapetyan, M. Zhezhu, A. Simonyan, D.A. Ghazaryan, M.S. Torosyan, A. kharatyan, J. Michalicka, M. Yeranosyan

Colloids and Interface Science Communications 2024 100766-7

Article

Exploring van der Waals materials with high anisotropy: geometrical and optical approaches
Aleksandr S Slavich, Georgy A Ermolaev, Mikhail K Tatmyshevskiy, Adilet N Toksumakov,

Olga G Matveeva, Dmitriy V Grudinin, Kirill V Voronin, Arslan Mazitov, Konstantin V Kravtsov,

Alexander V Syuy, Dmitry M Tsymbarenko, Mikhail S Mironov, Sergey M Novikov, Ivan Kruglov,

Davit A Ghazaryan, Andrey A Vyshnevyy, Aleksey V Arsenin, Valentyn S Volkov, Kostya S Novoselov

Light: Science and Applications 2024 68

Article

Wandering principal optical axes in van der Waals triclinic materials
Georgy A Ermolaev, Kirill V Voronin, Adilet N Toksumakov, Dmitriy V Grudinin, Ilia M Fradkin,

Arslan Mazitov, Aleksandr S Slavich,, Mikhail K Tatmyshevskiy, Dmitry I Yakubovsky, Valentin R Solovey,

Roman V Kirtaev, Sergey M Novikov, Elena S Zhukova, Ivan Kruglov, Andrey A Vyshnevyy,

Denis G Baranov, Davit A Ghazaryan, Aleksey V Arsenin, Luis Martin-Moreno, Valentyn S Volkov,

Kostya S Novoselov

Nature Communications 2024 1552

Article

Infrared photodetection in graphene-based heterostructures: bolometric and thermoelectric effects at the tunneling barrier
Dmitry A. Mylnikov, Mikhail A. Kashchenko, Kirill N. Kapralov, Davit A. Ghazaryan, Evgenii E. Vdovin,

Sergey V. Morozov, Kostya S. Novoselov, Denis A. Bandurin, Alexander I. Chernov, Dmitry A. Svintsov

npj 2D Materials and Applications 2024 34

Article

Chiral Photonic Super-Crystals Based on Helical van der Waals Homostructures
Kirill V. Voronin, Adilet N. Toksumakov, Georgy A. Ermolaev, Aleksandr S. Slavich,

Mikhail K. Tatmyshevskiy, Sergey M. Novikov, Andrey A. Vyshnevyy, Aleksey V. Arsenin,

Kostya S. Novoselov, Davit A. Ghazaryan, Valentyn S. Volkov, Denis G. Baranov

Laser and Photonics Reviews 2024 2301113

Article

Programmable Carbon Nanotube Networks: Controlling Optical Properties Through Orientation and Interaction
Kirill V. Voronin, Georgy A. Ermolaev, Maria G. Burdanova, Aleksandr S. Slavich, Adilet N. Toksumakov,

Dmitry I. Yakubovsky, Maksim I. Paukov, Ying Xie, Liu Qian, Daria S. Kopylova, Dmitry V. Krasnikov,

Davit A. Ghazaryan, Denis G. Baranov, Alexander I. Chernov, Albert G. Nasibulin, Jin Zhang,

Aleksey V. Arsenin, Valentyn Volkov

Advanced Science 2024 2404694

Article

Polarization control of lasing from few-layer MoTe2 coupled with the optical metasurface supporting quasi-trapped modes
A. V. Prokhorov, A. N. Toksumakov, A. V. Shesterikov, F. M. Maksimov, M. K. Tatmyshevskiy,

M. Yu. Gubin, R. V. Kirtaev, E. I. Titova, D. I. Yakubovsky, E. S. Zhukova, V. V. Burdin, S. M. Novikov,

A. I. Chernov, D. A. Ghazaryan, A. V. Arsenin, V. S. Volkov

Applied Physics Letters 2024 041702

Article

Improving the electro-optical properties of MoS2/rGO hybrid nanocomposites using liquid crystals

A. Vasil'ev, Y. Melikyan, M. Zhezhu, V. Hayrapetyan, M.S. Torosyan, D.A. Ghazaryan, M. Yeranosyan, H. Gharagulyan

Materials Research Bulletin 2024 113036

Article

Essential L-Amino Acid-Functionalized Graphene Oxide for Liquid Crystalline Phase Formation

H. Gharagulyan, Y. Melikyan, V. Hayrapetyan, Kh. Kirakosyan, D.A. Ghazaryan, M. Yeranosyan

Materials Science and Engineering: B 2023 116564

Article

Graphene on SiO2/Si and Al2O3 under thermal annealing and electric current: Competition of dopant desorption and conformation to substrate

E.A. Kolesov, M.S. Tivanov, O.V. Korolik, I.A. Svito, A.S. Antonovich, Yu. Klishin, D.A. Ghazaryan, A.V. Arsenin, V.S. Volkov, O.O. Kapitanova, G.N. Panin

Diamond and Related Materials 2023 110362

Article

Dry Assembly of van der Waals Heterostructures Using Exfoliated and CVD-Grown 2D Materials

Adilet N. Toksumakov, M. N. Sidorova, A. S. Slavich, M. K. Tatmyshevskiy, I. A. Zavidovskiy, G. A. Ermolaev, V. S. Volkov, D. A. Ghazaryan, A. V. Arsenin

Bulletin of the Russian Academy of Sciences: Physics 2023 S453–S457

Article

Hexagonal boron nitride nanophotonics: a record-breaking material for the ultraviolet and visible spectral ranges

D. V. Grudinin, G. A. Ermolaev, D. G. Baranov, A. N. Toksumakov, K. V. Voronin, A. S. Slavich, A. A. Vyshnevyy, A. B. Mazitov, I. A. Kruglov, D. A. Ghazaryan, A. V. Arsenin, K. S. Novoselov, V. S. Volkov

Materials Horizons 2023 2427-2435

Article

Anomalous optical response of graphene on hexagonal boron nitride substrates

Adilet N Toksumakov, Georgy A Ermolaev, Mikhail K Tatmyshevskiy, Yuri A Klishin, Aleksandr S Slavich, Ilya V Begichev, Dusan Stosic, Dmitry I Yakubovsky, Dmitry G Kvashnin, Andrey A Vyshnevyy, Aleksey V Arsenin, Valentyn S Volkov, Davit A. Ghazaryan

Communications Physics 2023 13

Article

Tunable THz flat zone plate based on stretchable single-walled carbon nanotube thin film

Gleb M Katyba, Nikita I Raginov, Eldar M Khabushev, Vladislav A Zhelnov, Andrei Gorodetsky, Davit A Ghazaryan, Mikhail S Mironov, Dmitriy V Krasnikov, Yuri G Gladush, James Lloyd-Hughes, Albert G Nasibulin, Aleksey V Arsenin, Valentyn S Volkov, Kirill I Zaytsev, Maria G Burdanova

Optica 2023 53-61

Article

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

Article

Temperature-dependent Raman spectroscopy and thermal conductivity of TiS2 hexagonal nanodiscs

Mohammad Talib, Samrah Manzoor, Davit A. Ghazaryan, Aleksey V. Arsenin, Valentyn S. Volkov, Prabhash Mishra

Materials Science in Semiconductor Processing 2022 107084

Article

High-refractive index and mechanically cleavable non-van der Waals InGaS3

Adilet N. Toksumakov, Georgy A. Ermolaev, Aleksandr S. Slavich, Natalia V. Doroshina,, Ekaterina V. Sukhanova, Dmitry I. Yakubovsky, Alexander V. Syuy, Sergey M. Novikov,, Roman I. Romanov, Andrey M. Markeev, Aleksandr S. Oreshonkov, Dmitry M. Tsymbarenko, Zakhar I. Popov, Dmitry G. Kvashnin, Andrey A . Vyshnevyy, Aleksey V. Arsenin, Davit A. Ghazaryan, Valentyn S. Volkov

npj 2D Materials and Applications 2022 85

Article

Broadband optical and terahertz properties of 1D van der Waals heteronanotubes

Maria G. Burdanova, Yongjia Zheng, Maksim I. Paukov, Georgy A. Ermolaev, Gennady A. Komandin, Davit Ghazaryan, Sergey Novikov, Rong Xiang, Shohei Chiashi, Shigeo Maruyama, James Lloyd-Hughes, Alexey V. Arsenin, Valentin Volkov

IEEE Photonics Journal 2022 182243

Article

Twisted monolayer and bilayer graphene for vertical tunneling transistors

Davit A. Ghazaryan, Abhishek Misra, Evgenii E. Vdovin,, Kenji Watanabe, Takashi Taniguchi, Sergei V. Morozov, Artem Mishchenko, Kostya S. Novoselov

Applied Physics Letters 2021 183106

Article

On the Role of Structural Imperfections of Graphene in Resonant Tunneling through Localized States in the h-BN Barrier of van-der-Waals Heterostructures

M. V. Grigoriev, D. A. Ghazaryan, E. E. Vdovin, Yu. N. Khanin, S. V. Morozov, K. S. Novoselov

Физика и техника полупроводников (Semiconductors) 2020 291–296

Article

High-temperature electronic devices enabled by hBN-encapsulated graphene

Makars Šiškins, Ciaran Mullan, Seok-Kyun Son, Jun Yin, Kenji Watanabe, Takashi Taniguchi, Davit Ghazaryan, Kostya S. Novoselov, Artem Mishchenko

Applied Physics Letters 2019 123104

Article

Engineering Graphene Flakes for Wearable Textile Sensors via Highly Scalable and Ultrafast Yarn Dyeing Technique

Shaila Afroj, Nazmul Karim, Zihao Wang, Sirui Tan, Pei He, Matthew Holwill, Davit Ghazaryan, Anura Fernando, Kostya S. Novoselov

ACS Nano 2019 3847–3857

Article

Field-induced insulating states in a graphene superlattice

S. Pezzini, S. Wiedmann, A. Mishchenko, M. Holwill, R. Gorbachev, D. Ghazaryan, K.S. Novoselov, U. Zeitler

Physical Review B 2019 045440

Article

Planar and van der Waals heterostructures for vertical tunnelling single electron transistors

Gwangwoo Kim, Sung-Soo Kim, Jonghyuk Jeon, Seong In Yoon, Seokmo Hong, Young Jin Cho, Abhishek Misra, Servet Ozdemir, Jun Yin, Davit Ghazaryan, Matthew Holwill, Artem Mishchenko, Daria V. Andreeva, Yong-Jin Kim, Hu Young Jeong, A-Rang Jang, Hyun-Jong Chung, Andre K. Geim, Kostya S. Novoselov, Byeong-Hyeok Sohn, Hyeon Suk Shin

Nature Communications 2019 230
