Zakhar I Popov

List of Publications by Year
in descending order

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67 papers	1,638 citations	331670 21 h-index	315739 38 g-index
69 all docs	69 docs citations	69 times ranked	3090 citing authors

#	Article	IF	Citations
1	Spontaneous doping of the basal plane of MoS2 single layers through oxygen substitution under ambient conditions. Nature Chemistry, 2018, 10, 1246-1251.	13.6	295
2	Construction of Polarized Carbonâ€“Nickel Catalytic Surfaces for Potent, Durable, and Economic Hydrogen Evolution Reactions. ACS Nano, 2018, 12, 4148-4155.	14.6	121
3	Multifunctional Superelastic Foam-Like Boron Nitride Nanotubular Cellular-Network Architectures. ACS Nano, 2017, 11, 558-568.	14.6	110
4	VS₂/Graphene Heterostructures as Promising Anode Material for Li-Ion Batteries. Journal of Physical Chemistry C, 2017, 121, 24179-24184.	3.1	73
5	Highly conductive and transparent films of HAuCl4-doped single-walled carbon nanotubes for flexible applications. Carbon, 2018, 130, 448-457.	10.3	68
6	Aragonite-II and CaCO₃-VII: New High-Pressure, High-Temperature Polymorphs of CaCO₃. Crystal Growth and Design, 2017, 17, 6291-6296.	3.0	61
7	The electronic structure and spin states of 2D graphene/VX₂ (X = S, Se) heterostructures. Physical Chemistry Chemical Physics, 2016, 18, 33047-33052.	2.8	49
8	Photocatalysis with Ptâ€“Auâ€“ZnO and Auâ€“ZnO Hybrids: Effect of Charge Accumulation and Discharge Properties of Metal Nanoparticles. Langmuir, 2018, 34, 7334-7345.	3.5	47
9	Enhanced electron coherence in atomically thinÂNb3SiTe6. Nature Physics, 2015, 11, 471-476.	16.7	46
10	Proximity-Induced Spin Polarization of Graphene in Contact with Half-Metallic Manganite. ACS Nano, 2016, 10, 7532-7541.	14.6	44
11	Transition Metal Chalcogenide Single Layers as an Active Platform for Single-Atom Catalysis. ACS Energy Letters, 2019, 4, 1947-1953.	17.4	43
12	(Ni,Cu)/hexagonal BN nanohybrids â€“ New efficient catalysts for methanol steam reforming and carbon monoxide oxidation. Chemical Engineering Journal, 2020, 395, 125109.	12.7	39
13	Exotic Two-Dimensional Structure: The First Case of Hexagonal NaCl. Journal of Physical Chemistry Letters, 2020, 11, 3821-3827.	4.6	38
14	Immobilization of Platelet-Rich Plasma onto COOH Plasma-Coated PCL Nanofibers Boost Viability and Proliferation of Human Mesenchymal Stem Cells. Polymers, 2017, 9, 736.	4.5	35
15	Alkali metals inside bi-layer graphene and MoS2: Insights from first-principles calculations. Nano Energy, 2020, 75, 104927.	16.0	30
16	Holey single-walled carbon nanotubes for ultra-fast broadband bolometers. Nanoscale, 2018, 10, 18665-18671.	5.6	29
17	DFT investigation of the influence of ordered vacancies on elastic and magnetic properties of graphene and grapheneâ€like SiC and BN structures. Physica Status Solidi (B): Basic Research, 2012, 249, 2549-2552.	1.5	28
18	Grafting of carboxyl groups using CO2/C2H4/Ar pulsed plasma: Theoretical modeling and XPS derivatization. Applied Surface Science, 2018, 435, 1220-1227.	6.1	27

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19	Hexagonal BN- and BNO-supported Au and Pt nanocatalysts in carbon monoxide oxidation and carbon dioxide hydrogenation reactions. Applied Catalysis B: Environmental, 2022, 303, 120891.	20.2	26
20	BN nanoparticle/Ag hybrids with enhanced catalytic activity: theory and experiments. Catalysis Science and Technology, 2018, 8, 1652-1662.	4.1	23
21	Influence of Native Defects on the Electronic and Magnetic Properties of CVD Grown MoSe₂ Single Layers. Journal of Physical Chemistry C, 2019, 123, 24855-24864.	3.1	22
22	AlÂâ˜' BN interaction in a high-strength lightweight Al/BN metal-matrix composite: Theoretical modelling and experimental verification. Journal of Alloys and Compounds, 2019, 782, 875-880.	5.5	20
23	Synthetic routes, structure and catalytic activity of Ag/BN nanoparticle hybrids toward CO oxidation reaction. Journal of Catalysis, 2018, 368, 217-227.	6.2	18
24	Mobility of vacancies under deformation and their effect on the elastic properties of graphene. Journal of Experimental and Theoretical Physics, 2011, 112, 820-824.	0.9	17
25	Highly efficient bilateral doping of single-walled carbon nanotubes. Journal of Materials Chemistry C, 2021, 9, 4514-4521.	5.5	17
26	Theoretical study of the diffusion of lithium in crystalline and amorphous silicon. JETP Letters, 2012, 95, 143-147.	1.4	16
27	TiCaPCON-Supported Pt- and Fe-Based Nanoparticles and Related Antibacterial Activity. ACS Applied Materials & Interfaces, 2019, 11, 28699-28719.	8.0	16
28	Graphene/Halfâ€Metallic Heusler Alloy: A Novel Heterostructure toward Highâ€Performance Graphene Spintronic Devices. Advanced Materials, 2020, 32, 1905734.	21.0	16
29	Metastable structures of CaCO₃ and their role in transformation of calcite to aragonite and postaragonite. Crystal Growth and Design, 2021, 21, 65-74.	3.0	16
30	Toward Analysis of Structural Changes Common for Alkaline Carbonates and Binary Compounds: Prediction of High-Pressure Structures of Li₂CO₃, Na₂CO₃, and K₂CO₃. Crystal Growth and Design, 2016, 16, 5612-5617.	3.0	15
31	Phase transformations of Fe3N-Fe4N iron nitrides at pressures up to 30 GPa studied by in situ X-ray diffractometry. JETP Letters, 2014, 98, 805-808.	1.4	14
32	Highâ€pressure phases of sulfur: Topological analysis and crystal structure prediction. Physica Status Solidi (B): Basic Research, 2017, 254, 1600857.	1.5	13
33	Analysis of epoxy functionalized layers synthesized by plasma polymerization of allyl glycidyl ether. Physical Chemistry Chemical Physics, 2018, 20, 20070-20077.	2.8	13
34	Induced spin polarization in graphene via interactions with halogen doped MoS₂ and MoSe₂ monolayers by DFT calculations. Nanoscale, 2020, 12, 23248-23258.	5.6	13
35	Analysis of optical and magnetooptical spectra of Fe5Si3 and Fe3Si magnetic silicides using spectral magnetoellipsometry. Journal of Experimental and Theoretical Physics, 2015, 120, 886-893.	0.9	12
36	First-principles calculations of the equations of state and relative stability of iron carbides at the Earthâ€™s core pressures. Russian Geology and Geophysics, 2015, 56, 164-171.	0.7	12

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37	Dirac Cone Spin Polarization of Graphene by Magnetic Insulator Proximity Effect Probed with Outermost Surface Spin Spectroscopy. Advanced Functional Materials, 2018, 28, 1800462.	14.9	12
38	Theoretical study of Î³â€²-Fe4N and É›-Fe x N iron nitrides at pressures up to 500 GPa. JETP Letters, 2015, 101, 371-375.	1.4	11
39	Polyol Synthesis of Ag/BN Nanohybrids and their Catalytic Stability in CO Oxidation Reaction. ChemCatChem, 2020, 12, 1691-1698.	3.7	11
40	Biodegradable Nanohybrid Materials as Candidates for Self-Sanitizing Filters Aimed at Protection from SARS-CoV-2 in Public Areas. Molecules, 2022, 27, 1333.	3.8	11
41	Electrospun Biodegradable Nanofibers Coated Homogenously by Cu Magnetron Sputtering Exhibit Fast Ion Release. Computational and Experimental Study. Membranes, 2021, 11, 965.	3.0	11
42	Stability of B2â€ttype FeS at Earth's inner core pressures. Geophysical Research Letters, 2016, 43, 8435-8440.	4.0	10
43	Optical characteristics of an epitaxial Fe3Si/Si(111) iron silicide film. JETP Letters, 2014, 99, 565-569.	1.4	9
44	Compressive properties of hollow BN nanoparticles: theoretical modeling and testing using a high-resolution transmission electron microscope. Nanoscale, 2018, 10, 8099-8105.	5.6	8
45	Adhesion of Single-Walled Carbon Nanotube Thin Films with Different Materials. Journal of Physical Chemistry Letters, 2020, 11, 504-509.	4.6	8
46	Structural evolution of Ag/BN hybrids via a polyol-assisted fabrication process and their catalytic activity in CO oxidation. Catalysis Science and Technology, 2019, 9, 6460-6470.	4.1	7
47	Computational Design of Gas Sensors Based on V3S4 Monolayer. Nanomaterials, 2022, 12, 774.	4.1	7
48	Interface-induced perpendicular magnetic anisotropy of Co nanoparticles on single-layer h-BN/Pt(111). Applied Physics Letters, 2018, 112, 022407.	3.3	6
49	Stability and gas sensing properties of Ta₂X₃M₈ (X = Pd, Pt; M = S,) Tj ETQq1 1 0.784314 rgB 14651-14659.	2.8	6
50	Raman Spectroscopy of Janus MoSSe Monolayer Polymorph Modifications Using Density Functional Theory. Materials, 2022, 15, 3988.	2.9	6
51	Non-chemical fluorination of hexagonal boron nitride by high-energy ion irradiation. Nanotechnology, 2020, 31, 125705.	2.6	5
52	Temperature induced twinning in aragonite: transmission electron microscopy experiments and ab initio calculations. Zeitschrift Fur Kristallographie - Crystalline Materials, 2019, 234, 79-84.	0.8	4
53	Novel two-dimensional boron oxynitride predicted using the USPEX evolutionary algorithm. Physical Chemistry Chemical Physics, 2021, 23, 26178-26184.	2.8	4
54	Theoretical study of sorption and diffusion of lithium atoms on the surface of crystalline silicon and inside it. JETP Letters, 2013, 97, 634-638.	1.4	3

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55	Ab initio and empirical modeling of lithium atoms penetration into silicon. Computational Materials Science, 2015, 109, 76-83.	3.0	3
56	Unbiased crystal structure prediction of NiSi under high pressure. Journal of Applied Crystallography, 2015, 48, 906-908.	4.5	3
57	Metallocene inspired 2D metal intercalated carbon allotropes: Stability and properties via DFT calculations. Carbon, 2021, 184, 714-720.	10.3	3
58	Theoretical Study of the Lithium Diffusion in the Crystalline and Amorphous Silicon as well as on its Surface. Solid State Phenomena, 0, 213, 29-34.	0.3	2
59	Prediction and theoretical investigation of new 2D and 3D periodical structures, having graphene-like bandstructures. Physica Status Solidi (B): Basic Research, 2015, 252, 2407-2411.	1.5	2
60	Effect of chemical ordering on optical properties of Fe3Si epitaxial films. EPJ Web of Conferences, 2018, 185, 03014.	0.3	2
61	Hydrogenation of the nanopowders that form in a carbon-helium plasma stream during the introduction of Ni and Mg. Journal of Experimental and Theoretical Physics, 2011, 113, 1057-1062.	0.9	1
62	Analysis of thermal effects on copper nanoparticles synthesized from the gas phase. IOP Conference Series: Materials Science and Engineering, 2015, 81, 012033.	0.6	1
63	Small Size Particles of Different Metal Alloys with Protective Shell for Hydrogen Storage. NATO Science for Peace and Security Series C: Environmental Security, 2011, , 167-175.	0.2	0
64	First principal investigation of Fe- and Li- silicon compounds. Physics Procedia, 2012, 23, 17-20.	1.2	0
65	Molecular dynamical modelling of endohedral fullerenes formation in plasma. IOP Conference Series: Materials Science and Engineering, 2016, 110, 012078.	0.6	0
66	Theoretical Investigation of NiI₂ Based Bilayer Heterostructures. Key Engineering Materials, 0, 806, 10-16.	0.4	0
67	Spintronic Devices: Graphene/Halfâ€Metallic Heusler Alloy: A Novel Heterostructure toward Highâ€Performance Graphene Spintronic Devices (Adv. Mater. 6/2020). Advanced Materials, 2020, 32, 2070043.	21.0	0