Alexander N Rudenko

List of Publications by Year
in descending order

78	3,387	186265 28	144013 57
papers	citations	h-index	g-index

78	78	78	4412
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Quasiparticle band structure and tight-binding model for single- and bilayer black phosphorus. Physical Review B, 2014, 89, .	3.2	577
2	Structural and Electronic Properties of Germanene on<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mi>MoS</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:math>. Physical Review Letters, 2016, 116, 256804.	7.8	329
3	Germanene: the germanium analogue of graphene. Journal of Physics Condensed Matter, 2015, 27, 443002.	1.8	304
4	Toward a realistic description of multilayer black phosphorus: From<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>G</mml:mi><mml:mi>W</mml:mi></mml:mrow></mml:math to large-scale tight-binding simulations. Physical Review B, 2015, 92, .	3.2	187
5	Intrinsic Charge Carrier Mobility in Single-Layer Black Phosphorus. Physical Review Letters, 2016, 116, 246401.	7.8	132
6	Probing Single Vacancies in Black Phosphorus at the Atomic Level. Nano Letters, 2017, 17, 3607-3612.	9.1	109
7	Transport and optical properties of single- and bilayer black phosphorus with defects. Physical Review B, 2015, 91, .	3.2	103
8	High-Pressure Synthesis of Dirac Materials: Layered van der Waals Bonded <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow><mml:mi>BeN</mml:mi></mml:mrow><mml:mrow><mml:mn>4</mml:mn></mml:mrow></ Polymorph. Physical Review Letters, 2021, 126, 175501.	7.8	90
9	Electronic correlations in nodal-line semimetals. Nature Physics, 2020, 16, 636-641.	16.7	86
10	Chemical modifications and stability of phosphorene with impurities: a first principles study. Physical Chemistry Chemical Physics, 2015, 17, 15209-15217.	2.8	78
11	Exchange interactions and frustrated magnetism in single-side hydrogenated and fluorinated graphene. Physical Review B, 2013, 88, .	3.2	77
12	Adsorption of cobalt on graphene: Electron correlation effects from a quantum chemical perspective. Physical Review B, 2012, 86, .	3.2	71
13	Orbitally-resolved ferromagnetism of monolayer CrI₃. 2D Materials, 2020, 7, 025036.	4.4	68
14	Adsorption of diatomic halogen molecules on graphene: A van der Waals density functional study. Physical Review B, 2010, 82, .	3.2	66
15	Graphene adhesion on mica: Role of surface morphology. Physical Review B, 2011, 83, .	3.2	59
16	Role of direct exchange and Dzyaloshinskii-Moriya interactions in magnetic properties of graphene derivatives: <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi mathvariant="normal">C</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:mi mathvariant="normal">F</mml:mi></mml:mrow></mml:math> and <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi mathvariant="n	3.2	56
17	Observing Imperfection in Atomic Interfaces for van der Waals Heterostructures. Nano Letters, 2017, 17, 5222-5228.	9.1	53
18	Weak ferromagnetism in Mn nanochains on the CuN surface. Physical Review B, 2009, 79, .	3.2	47

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19	Two-dimensional chromium pnictides <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>Cr</mml:mi><mml:mi>X</mml:mi><mml:mo>Â</mml:mo><mml:mo>(</mml:mo> : Half-metallic ferromagnets with high Curie temperature. Physical Review B, 2020, 102, .	3.2	44
20	Polaronic effects in monolayer black phosphorus on polar substrates. Physical Review B, 2016, 93, .	3.2	41
21	Excitonic Instability and Pseudogap Formation in Nodal Line Semimetal ZrSiS. Physical Review Letters, 2018, 120, 216401.	7.8	40
22	Interfacial interactions between local defects in amorphous SiO<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:msub><mml:mrow /><mml:mn>2</mml:mn></mml:msub></mml:math>and supported graphene. Physical Review B, 2011, 84, .	3.2	38
23	Strong Electron-Phonon Coupling and its Influence on the Transport and Optical Properties of Hole-Doped Single-Layer InSe. Physical Review Letters, 2019, 123, 176401.	7.8	37
24	Lateral Spin Valve Based on the Two-Dimensional <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" overflow="scroll"><mml:mrow><mml:mi>Cr</mml:mi><mml:mi mathvariant="normal">N</mml:mi></mml:mrow></mml:math> / <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline" overflow="scroll"><mml:mrow><mml:mrow><mml:mi mathvariant="normal">P</mml:mi></mml:mrow	3.8	37
25	An orbitally derived single-atom magnetic memory. Nature Communications, 2018, 9, 3904.	12.8	34
26	Electronic properties of single-layer antimony: Tight-binding model, spin-orbit coupling, and the strength of effective Coulomb interactions. Physical Review B, 2017, 95, .	3.2	33
27	Exchange interactions in transition metal oxides: the role of oxygen spin polarization. Journal of Physics Condensed Matter, 2017, 29, 335801.	1.8	30
28	Multiscale Modeling of Water in Mg-MOF-74: From Electronic Structure Calculations to Adsorption Isotherms. Journal of Physical Chemistry C, 2014, 118, 16218-16227.	3.1	29
29	Coulomb interactions and screening effects in few-layer black phosphorus: a tight-binding consideration beyond the long-wavelength limit. 2D Materials, 2017, 4, 025064.	4.4	28
30	Electron-phonon properties, structural stability, and superconductivity of doped antimonene. Physical Review B, 2019, 99, .	3.2	27
31	Bandgap opening in hydrogenated germanene. Applied Physics Letters, 2018, 112, .	3.3	26
32	Image potential states of germanene. 2D Materials, 2020, 7, 035021.	4.4	25
33	Quantifying the interplay between fine structure and geometry of an individual molecule on a surface. Physical Review B, 2021, 103, .	3.2	25
34	Role of charge doping and strain in the stabilization of in-plane ferromagnetism in monolayer VSe2 at room temperature. 2D Materials, 2021, 8, 035022.	4.4	24
35	Single 3dtransition metal atoms on multi-layer graphene systems: electronic configurations, bonding mechanisms and role of the substrate. New Journal of Physics, 2014, 16, 062001.	2.9	23
36	Anisotropic Two-Dimensional Screening at the Surface of Black Phosphorus. Physical Review Letters, 2019, 123, 216403.	7.8	21

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37	Environmental screening and ligand-field effects to magnetism in CrI3 monolayer. Npj Computational Materials, 2021, 7, .	8.7	19
38	Anisotropic ultraviolet-plasmon dispersion in black phosphorus. Nanoscale, 2018, 10, 21918-21927.	5.6	18
39	Electronic structure of chromium trihalides beyond density functional theory. Physical Review B, 2021, 104, .	3.2	18
40	Coexisting charge density wave and ferromagnetic instabilities in monolayer InSe. Npj Computational Materials, 2022, 8, .	8.7	18
41	Electronic Tuning in WSe₂/Au via van der Waals Interface Twisting and Intercalation. ACS Nano, 2022, 16, 6541-6551.	14.6	17
42	Correlation effects in insulating surface nanostructures. Physical Review B, 2013, 88, .	3.2	16
43	Excitonic instability and unconventional pairing in the nodal-line materials ZrSiS and ZrSiSe. Physical Review B, 2018, 98, .	3.2	16
44	Two-Dimensional Chromium Bismuthate: A Room-Temperature Ising Ferromagnet with Tunable Magneto-Optical Response. Physical Review Applied, 2021, 15, .	3.8	14
45	Importance of charge self-consistency in first-principles description of strongly correlated systems. Npj Computational Materials, 2021, 7, .	8.7	13
46	Effect of Mechanical Strain on the Optical Properties of Nodalâ€Line Semimetal ZrSiS. Advanced Electronic Materials, 2020, 6, 1900860.	5.1	12
47	Lattice dynamics and topological surface phonon states in cuprous oxide <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Cu</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:mathvariant="normal">O</mml:mi></mml:mrow></mml:math>. Physical Review B, 2021, 103, .	3.2	12
48	Real- and momentum-space description of the excitons in bulk and monolayer chromium tri-halides. Npj 2D Materials and Applications, 2022, 6, .	7.9	12
49	Renormalized spectral function for Co adatom on the Pt(111) surface. Physical Review B, 2010, 82, .	3.2	11
50	Interplay between in-plane and flexural phonons in electronic transport of two-dimensional semiconductors. Physical Review B, 2019, 100, .	3.2	11
51	Charge puddles in germanene. Applied Physics Letters, 2019, 114, 041601.	3.3	11
52	Tunable half-metallicity and edge magnetism of H-saturated InSe nanoribbons. Physical Review Materials, 2018, 2, .	2.4	11
53	Effect of long-range structural corrugations on magnetotransport properties of phosphorene in tilted magnetic field. Physical Review B, 2017, 96, .	3.2	10
54	Dynamical correlations in single-layer <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mi>CrI</mml:mi><mml:mn>3</mml:mn></mml:msub> Physical Review B, 2022, 105, .	3.2	10

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55	Influence of magnetic order on phonon spectra of multiferroic orthorhombic YMnO3. Solid State Communications, 2013, 164, 16-21.	1.9	9
56	Plasmon spectrum of single-layer antimonene. Physical Review B, 2018, 98, .	3.2	9
57	<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mtext>Germanium</mml:mtext><mml:mo>/</mml:mo><mml:msub><m : Competition between the growth of germanene and intercalation. Physical Review B, 2020, 102, .	3.2	9
58	Gate-tunable infrared plasmons in electron-doped single-layer antimony. Physical Review B, 2018, 98, .	3.2	8
59	Electron-phonon interaction and zero-field charge carrier transport in the nodal-line semimetal ZrSiS. Physical Review B, 2020, 101, .	3.2	8
60	Nanoskyrmion engineering with sp -electron materials: Sn monolayer on a SiC(0001) surface. Physical Review B, 2018, 98, .	3.2	7
61	Dislocation structure and mobility in the layered semiconductor InSe: a first-principles study. 2D Materials, 2021, 8, 045028.	4.4	6
62	Non-Heisenberg covalent magnetism in iron oxide clusters. Physical Review Materials, 2018, 2, .	2.4	6
63	Effect of flexural phonons on the hole states in single-layer black phosphorus. Physical Review B, 2017, 95, .	3.2	4
64	Control of magnetic interactions between surface adatoms via orbital repopulation. 2D Materials, 2020, 7, 045007.	4.4	4
65	Orbital-selective conductance of Co adatom on the Pt(111) surface. Physical Review B, 2011, 84, .	3.2	3
66	Electronic and optical properties of crystalline nitrogen versus black phosphorus: A comparative first-principles study. Physical Review B, 2022, 105, .	3.2	3
67	Ab initio calculations of the vibrational spectra of 1/1 approximant of i-AlCuFe quasicrystal. Physics of the Solid State, 2008, 50, 1326-1332.	0.6	2
68	Ab initio study of the electron-phonon coupling at the Cr(001) surface. Physical Review B, 2018, 97, .	3.2	2
69	Gating Orbital Memory with an Atomic Donor. Physical Review Letters, 2022, 128, 106801.	7.8	2
70	Structural features and atomic dynamics in Si/SiO2 superlattices: First-principles calculations. Physics of the Solid State, 2010, 52, 2409-2414.	0.6	1
71	Electronic properties of germanene on pristine and defective <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mrow><mml:mi>MoS</mml:mi></mml:mrow><mml:mn>2 : A first-principles study. Physical Review B, 2022, 105, .	3.2	1
72	Calculation of vibrational spectra of an icosahedral quasicrystal AlCuFe. Crystallography Reports, 2007, 52, 1025-1029.	0.6	0

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73	Simulation of the lattice dynamics of an Al-Cu-Fe icosahedral quasicrystal. Physics of the Solid State, 2007, 49, 356-359.	0.6	0
74	The origin of localized vibrations in KI: Cl and KI: H crystals. Physics of the Solid State, 2007, 49, 454-459.	0.6	0
75	Simulation of vibrational spectra of SiO2 nanoclusters. Physics of the Solid State, 2010, 52, 1276-1278.	0.6	0
76	Simulation of the electronic structure of simple oxides BeO and SiO2 and complex oxides Be2SiO4 and Be2Si x Ge1 âˆ’ x O4 with the phenacite structure. Journal of Experimental and Theoretical Physics, 2011, 112, 877-883.	0.9	0
77	Orbital response of single-layer antimony to external magnetic field. Physical Review B, 2020, 102, .	3.2	0
78	Orbital ordering and quasi-two-dimensional magnetism in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mi>A</mml:mi><mml:msub><mml:mi mathvariant="normal">MnF</mml:mi><mml:mn>4</mml:mn></mml:msub><mml:mo>Â</mml:mo><mml:mo>(</mml:mo><mml:mi>A< : A first-principles study. Physical Review B, 2022, 106, .	3.2	0