Mehdi Neek-Amal

List of Publications by Year
in descending order

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105	3,462	109321	155660
papers	citations	35 h-index	55 g-index

107	107	107	4307
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Electrically controlled water permeation through graphene oxide membranes. Nature, 2018, 559, 236-240.	27.8	263
2	Commensurability Effects in Viscosity of Nanoconfined Water. ACS Nano, 2016, 10, 3685-3692.	14.6	198
3	Trilayer Metalâ€“Organic Frameworks as Multifunctional Electrocatalysts for Energy Conversion and Storage Applications. Journal of the American Chemical Society, 2022, 144, 3411-3428.	13.7	142
4	Van der Waals pressure and its effect on trapped interlayer molecules. Nature Communications, 2016, 7, 12168.	12.8	137
5	Nanoindentation of a circular sheet of bilayer graphene. Physical Review B, 2010, 81, .	3.2	118
6	Graphene nanoribbons subjected to axial stress. Physical Review B, 2010, 82, .	3.2	92
7	Thermal properties of fluorinated graphene. Physical Review B, 2013, 87, .	3.2	91
8	The formation of atomic nanoclusters on graphene sheets. Nanotechnology, 2009, 20, 135602.	2.6	89
9	Thermomechanical properties of a single hexagonal boron nitride sheet. Physical Review B, 2013, 87, .	3.2	87
10	Realization of free-standing silicene using bilayer graphene. Applied Physics Letters, 2013, 103, .	3.3	80
11	Unusual ultra-low-frequency fluctuations in freestanding graphene. Nature Communications, 2014, 5, 3720.	12.8	69
12	Graphene on boron-nitride: MoirÃ© pattern in the van der Waals energy. Applied Physics Letters, 2014, 104, .	3.3	66
13	Dependence of the shape of graphene nanobubbles on trapped substance. Nature Communications, 2017, 8, 15844.	12.8	65
14	Roughness of undoped graphene and its short-range induced gauge field. Physical Review B, 2007, 76, .	3.2	61
15	Anomalous Dynamical Behavior of Freestanding Graphene Membranes. Physical Review Letters, 2016, 117, 126801.	7.8	59
16	Strain-engineered graphene through a nanostructured substrate. I. Deformations. Physical Review B, 2012, 85, .	3.2	57
17	Nanoengineered nonuniform strain in graphene using nanopillars. Physical Review B, 2012, 86, .	3.2	55
18	Tuning the electronic properties of grapheneâ€“graphitic carbon nitride heterostructures and heterojunctions by using an electric field. Physical Review B, 2020, 101, .	3.2	54

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19	Electronic structure of a hexagonal graphene flake subjected to triaxial stress. Physical Review B, 2013, 88, .	3.2	52
20	Stabilized silicene within bilayer graphene: A proposal based on molecular dynamics and density-functional tight-binding calculations. Physical Review B, 2014, 89, .	3.2	51
21	Defected graphene nanoribbons under axial compression. Applied Physics Letters, 2010, 97, .	3.3	50
22	AA-stacked bilayer square ice between graphene layers. Physical Review B, 2015, 92, .	3.2	48
23	Directed motion of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mi mathvariant="normal">C</mml:mi><mml:mrow><mml:mn>60</mml:mn></mml:mrow></mml:msub></mml:mrow></mml:math>on a graphene sheet subjected to a temperature gradient. Physical Review E, 2011, 83, 042601.	2.1	47
24	Lattice thermal properties of graphane: Thermal contraction, roughness, and heat capacity. Physical Review B, 2011, 83, .	3.2	47
25	Thermal rippling behavior of graphane. Physical Review B, 2012, 86, .	3.2	47
26	Boron Nitride Monolayer: A Strain-Tunable Nanosensor. Journal of Physical Chemistry C, 2013, 117, 13261-13267.	3.1	45
27	Transport of hydrogen isotopes through interlayer spacing in van der Waals crystals. Nature Nanotechnology, 2018, 13, 468-472.	31.5	45
28	Diffusive motion of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:msub><mml:mtext>C</mml:mtext><mml:mrow><mml:mn>60</mml:mn></mml:mrow></mml:msub></mml:mrow></mml:math>on a graphene sheet. Physical Review E, 2010, 82, 051605.	2.1	44
29	Linear reduction of stiffness and vibration frequencies in defected circular monolayer graphene. Physical Review B, 2010, 81, .	3.2	43
30	Induced polarization and electronic properties of carbon-doped boron nitride nanoribbons. Physical Review B, 2012, 86, .	3.2	43
31	Thermal mirror buckling in freestanding graphene locally controlled by scanning tunnelling microscopy. Nature Communications, 2014, 5, 4962.	12.8	43
32	Asymmetric simple exclusion process describing conflicting traffic flows. Europhysics Letters, 2007, 80, 60002.	2.0	41
33	Rippling, buckling, and melting of single- and multilayer<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:msub><mml:mrow><mml:mi mathvariant="normal">MoS</mml:mi></mml:mrow><mml:mn>2</mml:mn></mml:msub></mml:math>. Physical Review B, 2015, 91, .	3.2	41
34	Self-Organized Platinum Nanoparticles on Freestanding Graphene. ACS Nano, 2014, 8, 2697-2703.	14.6	39
35	Two-dimensional graphitic carbon nitrides: Strain-tunable ferromagnetic ordering. Physical Review B, 2020, 101, .	3.2	37
36	Electric-field-induced structural changes in water confined between two graphene layers. Physical Review B, 2016, 94, .	3.2	36

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37	Electronic properties of graphene nano-flakes: Energy gap, permanent dipole, termination effect, and Raman spectroscopy. Journal of Chemical Physics, 2014, 140, 074304.	3.0	35
38	Out-of-plane permittivity of confined water. Physical Review E, 2020, 102, 022803.	2.1	35
39	Fast water flow through graphene nanocapillaries: A continuum model approach involving the microscopic structure of confined water. Applied Physics Letters, 2018, 113, .	3.3	34
40	Strain-engineered graphene through a nanostructured substrate. II. Pseudomagnetic fields. Physical Review B, 2012, 85, .	3.2	30
41	Melting of graphene clusters. Physical Review B, 2013, 87, .	3.2	30
42	Reversible structural transition in nanoconfined ice. Physical Review B, 2017, 95, .	3.2	28
43	The inhibition performance of quinoa seed on corrosion behavior of carbon steel in the HCl solution; theoretical and experimental evaluations. Journal of Molecular Liquids, 2021, 335, 116183.	4.9	26
44	Monolayer alkali and transition-metal monoxides: MgO, CaO, MnO, and NiO. Physical Review B, 2017, 95, .	3.2	25
45	Buckled circular monolayer graphene: a graphene nano-bowl. Journal of Physics Condensed Matter, 2011, 23, 045002.	1.8	24
46	Thermomechanical properties of graphene: valence force field model approach. Journal of Physics Condensed Matter, 2012, 24, 175303.	1.8	24
47	Electro- and opto-mutable properties of MgO nanoclusters adsorbed on mono- and double-layer graphene. Nanoscale, 2017, 9, 4205-4218.	5.6	24
48	Breakdown of Universal Scaling for Nanometer-Sized Bubbles in Graphene. Nano Letters, 2021, 21, 8103-8110.	9.1	23
49	Graphene ripples as a realization of a two-dimensional Ising model: A scanning tunneling microscope study. Physical Review B, 2015, 91, .	3.2	22
50	Gas flow through atomic-scale apertures. Science Advances, 2020, 6, .	10.3	22
51	Thermal activated rotation of graphene flake on graphene. 2D Materials, 2017, 4, 025015.	4.4	21
52	Graphene on hexagonal lattice substrate: Stress and pseudo-magnetic field. Applied Physics Letters, 2014, 104, .	3.3	20
53	Graphene-silicene bilayer: A nanocapacitor with permanent dipole and piezoelectricity effect. Physical Review B, 2015, 92, .	3.2	20
54	Ground-state properties of a confined simple atom by C60fullerene. Journal of Physics B: Atomic, Molecular and Optical Physics, 2007, 40, 1509-1521.	1.5	19

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55	Abnormal Dielectric Constant of Nanoconfined Water between Graphene Layers in the Presence of Salt. Journal of Physical Chemistry B, 2021, 125, 1604-1610.	2.6	19
56	Effect of grain boundary on the buckling of graphene nanoribbons. Applied Physics Letters, 2012, 100, .	3.3	18
57	Doping effect on the adsorption of NH3 molecule onto graphene quantum dot: From the physisorption to the chemisorption. Journal of Applied Physics, 2013, 114, .	2.5	18
58	Self-Limiting Growth of Two-Dimensional Palladium between Graphene Oxide Layers. Nano Letters, 2019, 19, 4678-4683.	9.1	18
59	Methane molecule over the defected and rippled graphene sheet. Solid State Communications, 2012, 152, 1493-1496.	1.9	17
60	Spiral graphone and one-sided fluorographene nanoribbons. Physical Review B, 2013, 87, .	3.2	17
61	Melting of Partially Fluorinated Graphene: From Detachment of Fluorine Atoms to Large Defects and Random Coils. Journal of Physical Chemistry C, 2014, 118, 4460-4464.	3.1	17
62	Diffusion of fluorine on and between graphene layers. Physical Review B, 2015, 91, .	3.2	17
63	The different adsorption mechanism of methane molecule onto a boron nitride and a graphene flakes. Journal of Applied Physics, 2014, 116, .	2.5	16
64	Multilayer graphene, MoirÃ© patterns, grain boundaries and defects identified by scanning tunneling microscopy on the m-plane, non-polar surface of SiC. Carbon, 2014, 80, 75-81.	10.3	16
65	N-doped graphene: Polarization effects and structural properties. Physical Review B, 2016, 93, .	3.2	16
66	The effects of temperature and vacancies on dynamics of crack in graphene sheet. AIP Advances, 2014, 4, .	1.3	14
67	Temperature distribution in graphene doped with nitrogen and graphene with grain boundary. Journal of Molecular Graphics and Modelling, 2017, 74, 100-104.	2.4	14
68	Abnormal in-plane permittivity and ferroelectricity of confined water: From sub-nanometer channels to bulk. Journal of Chemical Physics, 2021, 154, 114503.	3.0	14
69	Electronic, dielectric, and optical properties of two-dimensional and bulk ice: A multiscale simulation study. Physical Review B, 2020, 101, .	3.2	13
70	Tunable natural terahertz and mid-infrared hyperbolic plasmons in carbon phosphide. Carbon, 2021, 178, 625-631.	10.3	12
71	Membrane amplitude and triaxial stress in twisted bilayer graphene deciphered using first-principles directed elasticity theory and scanning tunneling microscopy. Physical Review B, 2014, 90, .	3.2	11
72	Gas Permeability and Selectivity of a Porous WS₂ Monolayer. Journal of Physical Chemistry C, 2021, 125, 25055-25066.	3.1	11

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73	Stochastic motion of noble gases on a graphene sheet. Computational Materials Science, 2010, 49, 839-844.	3.0	10
74	Mechanical properties of twin graphene subjected to uniaxial stress by molecular dynamic simulation. Materials Research Express, 2019, 6, 105611.	1.6	10
75	Ionized water confined in graphene nanochannels. Physical Chemistry Chemical Physics, 2019, 21, 9285-9295.	2.8	10
76	Monte Carlo simulation of size effects on thermal conductivity in a two-dimensional Ising system. Physica A: Statistical Mechanics and Its Applications, 2006, 371, 424-432.	2.6	8
77	Electrostrictive behavior of confined water subjected to GPa pressure. Physical Review B, 2018, 97, .	3.2	8
78	Slippage dynamics of confined water in graphene oxide capillaries. Physical Review Materials, 2018, 2, .	2.4	8
79	Large CO₂ uptake on a monolayer of CaO. Journal of Materials Chemistry A, 2017, 5, 2110-2114.	10.3	7
80	Hydration effects and negative dielectric constant of nano-confined water between cation intercalated MXenes. Nanoscale, 2021, 13, 922-929.	5.6	7
81	Partially hydrogenated and fluorinated graphene: Structure, roughness, and negative thermal expansion. Physical Review B, 2015, 92, .	3.2	6
82	Optoelectronic properties of confined water in angstrom-scale slits. Physical Review B, 2020, 102, .	3.2	6
83	Catalytic properties of cyclo-carbon clusters: An investigation on o<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si4.svg"><mml:msub><mml:mrow /><mml:mn>2</mml:mn></mml:msub></mml:math> activation and CO oxidation. Surface Science, 2022, 720, 122050.	1.9	6
84	Molecular dynamics simulation of temperature profile in partially hydrogenated graphene and graphene with grain boundary. Journal of Molecular Graphics and Modelling, 2015, 62, 38-42.	2.4	5
85	Static flexural modes and piezoelectricity in 2D and layered crystals. Physica Status Solidi (B): Basic Research, 2016, 253, 2311-2315.	1.5	5
86	The formation of Cr2O3 nanoclusters over graphene sheet and carbon nanotubes. Chemical Physics Letters, 2017, 687, 188-193.	2.6	5
87	Electronic Properties of Oxidized Graphene: Effects of Strain and an Electric Field on Flat Bands and the Energy Gap. Journal of Physical Chemistry Letters, 2022, 13, 66-74.	4.6	5
88	Ground state study of simple atoms within a nanoscale box. Solid State Communications, 2008, 145, 594-599.	1.9	4
89	Electric field effects on Nano-Scale bio-membrane of spherical cells. Physica A: Statistical Mechanics and Its Applications, 2009, 388, 120-128.	2.6	4
90	Van der Waals energy surface of a carbon nanotube sheet. Solid State Communications, 2012, 152, 225-230.	1.9	4

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91	Spatial design and control of graphene flake motion. Physical Review B, 2017, 96, .	3.2	4
92	Comment on â€œIrreversibility in Response to Forces Acting on Graphene Sheetsâ€• Physical Review Letters, 2011, 106, 209701; author reply 209702.	7.8	3
93	Electric-field-induced emergent electrical connectivity in graphene oxide. Physical Review B, 2019, 99, .	3.2	3
94	Enhanced roughness of lipid membranes caused by external electric fields. Computational Materials Science, 2007, 41, 202-207.	3.0	2
95	Evaluating gas permeance through graphene nanopores and porous 2D-membranes: A generalized approach. Carbon Trends, 2021, 5, 100086.	3.0	2
96	Study of Hydrogen Molecule and Hydrogen Molecular Ion Confined in C₆₀ Fullerene. Journal of Computational and Theoretical Nanoscience, 2008, 5, 366-374.	0.4	2
97	Indentation of graphene nano-bubbles. Nanoscale, 2022, , .	5.6	2
98	Unconventional two-dimensional vibrations of a decorated carbon nanotube under electric field: linking actuation to advanced sensing ability. Scientific Reports, 2017, 7, 13481.	3.3	1
99	Oscillation in the electrical conductivity of a thick graphene oxide membrane. Journal of Applied Physics, 2021, 129, 235105.	2.5	1
100	Effective potential of longitudinal interactions between microtubule protofilaments. Physical Review E, 2008, 78, 011912.	2.1	0
101	The interaction between atomic-scale pores and particles. Journal of Physics Condensed Matter, 2021, 34, .	1.8	0
102	Molecular Dynamics Simulation of the Thermal Conductivity of Fcc Metallic Nanocrystals. Journal of Computational and Theoretical Nanoscience, 2005, 2, 438-442.	0.4	0
103	Comment on â€œTwo-dimensional carbon nitride C6N nanosheet with egg-comb-like structure and electronic properties of a semimetal [Nanotechnology 2021, 32, 215702]â€• Nanotechnology, 2022, , .	2.6	0
104	Editorial: Nanoconfined Fluids in Energy Applications. Frontiers in Energy Research, 0, 10, .	2.3	0
105	Comment on â€œA novel two-dimensional boron-carbon-nitride (BCN) monolayer: A first-principles insightâ€•[J. Appl. Phys. 130, 114301 (2021)]. Journal of Applied Physics, 2022, 131, 216101.	2.5	0