Nikhil V Medhekar

List of Publications by Year
in descending order

110	6,146	109321	69250
papers	citations	35 h-index	77 g-index

116	116	116	10418
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Hydrogen Bond Networks in Graphene Oxide Composite Paper: Structure and Mechanical Properties. ACS Nano, 2010, 4, 2300-2306.	14.6	674
2	Exploring graphene as a corrosion protection barrier. Corrosion Science, 2012, 56, 1-4.	6.6	515
3	Ab initio characterization of layered MoS2 as anode for sodium-ion batteries. Journal of Power Sources, 2014, 268, 279-286.	7.8	377
4	Enhanced Charge Carrier Mobility in Twoâ€Ðimensional High Dielectric Molybdenum Oxide. Advanced Materials, 2013, 25, 109-114.	21.0	355
5	Discriminative Separation of Gases by a â€œMolecular Trapdoorâ€•Mechanism in Chabazite Zeolites. Journal of the American Chemical Society, 2012, 134, 19246-19253.	13.7	321
6	Tunable Plasmon Resonances in Twoâ€Ðimensional Molybdenum Oxide Nanoflakes. Advanced Materials, 2014, 26, 3931-3937.	21.0	308
7	Corrosion mechanism and hydrogen evolution on Mg. Current Opinion in Solid State and Materials Science, 2015, 19, 85-94.	11.5	288
8	Electrochemical Control of Photoluminescence in Two-Dimensional MoS₂ Nanoflakes. ACS Nano, 2013, 7, 10083-10093.	14.6	282
9	Plasmon Resonances of Highly Doped Two-Dimensional MoS₂. Nano Letters, 2015, 15, 883-890.	9.1	167
10	Near-Direct Bandgap WSe₂/ReS₂ Type-II pn Heterojunction for Enhanced Ultrafast Photodetection and High-Performance Photovoltaics. Nano Letters, 2020, 20, 1707-1717.	9.1	162
11	Strong Depletion in Hybrid Perovskite pâ€“n Junctions Induced by Local Electronic Doping. Advanced Materials, 2018, 30, e1705792.	21.0	141
12	Bonding Charge Density and Ultimate Strength of Monolayer Transition Metal Dichalcogenides. Journal of Physical Chemistry C, 2013, 117, 15842-15848.	3.1	133
13	Stability and Formation Mechanisms of Carbonyl- and Hydroxyl-Decorated Holes in Graphene Oxide. Journal of Physical Chemistry C, 2010, 114, 12053-12061.	3.1	129
14	Enzymatic and non-enzymatic electrochemical glucose sensor based on carbon nano-onions. Applied Surface Science, 2018, 442, 332-341.	6.1	93
15	Asymmetric gel polymer electrolyte with high lithium ion conductivity for dendrite-free lithium metal batteries. Journal of Materials Chemistry A, 2020, 8, 8033-8040.	10.3	93
16	Elastic softening of alloy negative electrodes for Na-ion batteries. Journal of Power Sources, 2013, 225, 207-214.	7.8	87
17	Cation/Anion Substitution in Cu2ZnSnS4 for Improved Photovoltaic Performance. Scientific Reports, 2016, 6, 35369.	3.3	83
18	High capacity group-15 alloy anodes for Na-ion batteries: Electrochemical and mechanical insights. Journal of Power Sources, 2015, 285, 29-36.	7.8	75

#	Article	IF	Citations
19	Ordered intracrystalline pores in planar molybdenum oxide for enhanced alkaline hydrogen evolution. Journal of Materials Chemistry A, 2019, 7, 257-268.	10.3	70
20	The enhanced theta-prime (Î¸â€²) precipitation in an Al-Cu alloy with trace Au additions. Acta Materialia, 2017, 125, 340-350.	7.9	66
21	Transforming solid-state precipitates via excess vacancies. Nature Communications, 2020, 11, 1248.	12.8	65
22	A saccharide-based binder for efficient polysulfide regulations in Li-S batteries. Nature Communications, 2021, 12, 5375.	12.8	65
23	Electrochemical Stability of Magnesium Surfaces in an Aqueous Environment. Journal of Physical Chemistry C, 2016, 120, 26922-26933.	3.1	55
24	Enhancement of the intrinsic light harvesting capacity of Cs₂AgBiBr₆double perovskiteviamodification with sulphide. Journal of Materials Chemistry A, 2020, 8, 2008-2020.	10.3	54
25	Chemical switching of low-loss phonon polaritons in Î±-MoO3 by hydrogen intercalation. Nature Communications, 2020, 11, 2646.	12.8	54
26	CO₂ Adsorption in Azobenzene Functionalized Stimuli Responsive Metalâ€“Organic Frameworks. Journal of Physical Chemistry C, 2016, 120, 16658-16667.	3.1	53
27	CO₂adsorption and separation in covalent organic frameworks with interlayer slipping. CrystEngComm, 2017, 19, 6950-6963.	2.6	51
28	Aqueous electrochemistry of the magnesium surface: Thermodynamic and kinetic profiles. Corrosion Science, 2019, 147, 53-68.	6.6	49
29	Composition Maps in Self-Assembled Alloy Quantum Dots. Physical Review Letters, 2008, 100, 106104.	7.8	46
30	First principles many-body calculations of electronic structure and optical properties of SiC nanoribbons. Journal Physics D: Applied Physics, 2016, 49, 105306.	2.8	45
31	Efficient Atomic-Scale Kinetics through a Complex Heterophase Interface. Physical Review Letters, 2013, 111, 046102.	7.8	42
32	Influence of Electric Field on SERS: Frequency Effects, Intensity Changes, and Susceptible Bonds. Journal of the American Chemical Society, 2012, 134, 4646-4653.	13.7	41
33	Improved structural and optical properties of Cu2ZnSnS4 thin films via optimized potential in single bath electrodeposition. Electrochimica Acta, 2014, 137, 154-163.	5.2	41
34	Vacancy-tuned precipitation pathways in Al-1.7 Cu-0.025In-0.025Sb (at.%) alloy. Acta Materialia, 2017, 141, 341-351.	7.9	37
35	Methane Adsorption and Separation in Slipped and Functionalized Covalent Organic Frameworks. Industrial & Engineering Chemistry Research, 2018, 57, 4767-4778.	3.7	36
36	Composite Polymer Electrolyte for Highly Cyclable Room-Temperature Solid-State Magnesium Batteries. ACS Applied Energy Materials, 2019, 2, 7980-7990.	5.1	36

#	Article	IF	Citations
37	Graphene field effect transistor as a probe of electronic structure and charge transfer at organic moleculeâ€“graphene interfaces. Nanoscale, 2015, 7, 1471-1478.	5.6	34
38	The effect of absorbed hydrogen on the dissolution of steel. Heliyon, 2016, 2, e00209.	3.2	33
39	Stress-enhanced pattern formation on surfaces during low energy ion bombardment. Journal of Physics Condensed Matter, 2009, 21, 224021.	1.8	32
40	Detection of Halomethanes Using Cesium Lead Halide Perovskite Nanocrystals. ACS Nano, 2021, 15, 1454-1464.	14.6	32
41	Crossover from 2D Ferromagnetic Insulator to Wide Band Gap Quantum Anomalous Hall Insulator in Ultrathin MnBi₂Te₄. ACS Nano, 2021, 15, 13444-13452.	14.6	31
42	Freestanding n-Doped Graphene via Intercalation of Calcium and Magnesium into the Buffer Layerâ€“SiC(0001) Interface. Chemistry of Materials, 2020, 32, 6464-6482.	6.7	28
43	Band engineering of Ni1â^'xMgxO alloys for photocathodes of high efficiency dye-sensitized solar cells. Journal of Applied Physics, 2012, 112, .	2.5	27
44	Enhanced lithium adsorption and diffusion on silicene nanoribbons. RSC Advances, 2013, 3, 20338.	3.6	26
45	Electronic Band Structure of In-Plane Ferroelectric van der Waals Î²â€²-In₂Se₃. ACS Applied Electronic Materials, 2020, 2, 213-219.	4.3	26
46	Berry curvature origin of the thickness-dependent anomalous Hall effect in a ferromagnetic Weyl semimetal. Npj Quantum Materials, 2021, 6, .	5.2	26
47	Energetics and Kinetics of Li Intercalation in Irradiated Graphene Scaffolds. ACS Applied Materials & Interfaces, 2013, 5, 12968-12974.	8.0	24
48	Polarity-Tunable Photocurrent through Band Alignment Engineering in a High-Speed WSe₂/SnSe₂ Diode with Large Negative Responsivity. ACS Nano, 2022, 16, 4578-4587.	14.6	23
49	Substrate-induced magnetism in epitaxial graphene buffer layers. Nanotechnology, 2009, 20, 275705.	2.6	22
50	Wavelengthâ€Controlled Photocurrent Polarity Switching in BPâ€MoS₂ Heterostructure. Advanced Functional Materials, 2022, 32, .	14.9	22
51	Edge stresses of non-stoichiometric edges in two-dimensional crystals. Applied Physics Letters, 2012, 100, .	3.3	21
52	Postcombustion CO₂ Capture in Functionalized Porous Coordination Networks. Journal of Physical Chemistry C, 2013, 117, 26976-26987.	3.1	21
53	Resolving the FCC/HCP interfaces of the <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.svg"><mml:mrow><mml:mi>Î³</mml:mi><mml:mo>'</mml:mo></mml:mrow></mml:math> (<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML") Tj ETQq1 1 0.784314 rgBT /Overlock 10 Tf 50 92 Td (altimg="si2.svg"> precipitate phase in aluminium. Acta Materialia, 2019, 174, 116-130.	7.9	20
54	Manifestation of Strongly Correlated Electrons in a 2D Kagome Metalâ€“Organic Framework. Advanced Functional Materials, 2021, 31, 2106474.	14.9	20

#	Article	IF	Citations
55	Metastability in 2D Self-Assembling Systems. Physical Review Letters, 2007, 99, 156102.	7.8	18
56	From Half-Metal to Semiconductor: Electron-Correlation Effects in Zigzag SiC Nanoribbons From First Principles. Physical Review Applied, 2017, 7, .	3.8	18
57	Aqueous Electrochemical Activity of the Mg Surface: The Role of Group 14 and 15 Microalloying Elements. Journal of the Electrochemical Society, 2017, 164, C918-C929.	2.9	18
58	Atomistic Mechanisms of Mg Insertion Reactions in Group XIV Anodes for Mg-Ion Batteries. ACS Applied Materials & Interfaces, 2019, 11, 774-783.	8.0	18
59	Thermal transport in lattice-constrained 2D hybrid graphene heterostructures. Journal of Physics Condensed Matter, 2013, 25, 445007.	1.8	17
60	Porous Aromatic Frameworks Impregnated with Lithiated Fullerenes for Natural Gas Purification. Journal of Physical Chemistry C, 2015, 119, 9347-9354.	3.1	17
61	Molecular Dipole-Driven Electronic Structure Modifications of DNA/RNA Nucleobases on Graphene. Journal of Physical Chemistry Letters, 2017, 8, 3087-3094.	4.6	17
62	Large Magnetic Gap in a Designer Ferromagnetâ€“Topological Insulatorâ€“Ferromagnet Heterostructure. Advanced Materials, 2022, 34, e2107520.	21.0	17
63	Molecular mechanisms of thermal instability in hybrid perovskite light absorbers for photovoltaic solar cells. Journal of Materials Chemistry A, 2020, 8, 17765-17779.	10.3	16
64	Surface Charge Transfer Induced Ferromagnetism in Nanostructured ZnO/Al. Journal of Physical Chemistry C, 2012, 116, 8541-8547.	3.1	15
65	Ion Agglomeration and Transport in MgCl2-Based Electrolytes for Rechargeable Magnesium Batteries. Journal of Physical Chemistry Letters, 2019, 10, 7856-7862.	4.6	15
66	The bi-layered precipitate phase Î¶ in the Al-Ag alloy system. Acta Materialia, 2017, 132, 525-537.	7.9	14
67	Electric Field Control of Molecular Charge State in a Single-Component 2D Organic Nanoarray. ACS Nano, 2019, 13, 11882-11890.	14.6	14
68	Phaseâ€Control of Singleâ€Crystalline Inorganic Halide Perovskites via Molecular Coordination Engineering. Advanced Functional Materials, 2022, 32, .	14.9	14
69	Enhanced quantum confinement due to nonuniform composition in alloy quantum dots. Nanotechnology, 2010, 21, 095401.	2.6	13
70	Mechanisms of void shrinkage in aluminium. Journal of Applied Crystallography, 2016, 49, 1459-1470.	4.5	13
71	Designing Optoelectronic Properties by On-Surface Synthesis: Formation and Electronic Structure of an Ironâ€“Terpyridine Macromolecular Complex. ACS Nano, 2018, 12, 6545-6553.	14.6	13
72	On the prismatic precipitate plates in Mgâ€“Caâ€“In alloys. Scripta Materialia, 2015, 101, 16-19.	5.2	12

#	Article	IF	Citations
73	Hydrogen induced amorphisation around nanocracks in aluminium. Engineering Fracture Mechanics, 2016, 161, 40-54.	4.3	12
74	Comparison of fatigue crack growth stress ratio effects under simple variable amplitude loading using fractographic and strain measurements. International Journal of Fatigue, 2018, 112, 240-252.	5.7	12
75	Enhanced Photovoltaic Performance via a Bifunctional Additive in Tin-Based Perovskite Solar Cells. ACS Applied Energy Materials, 2022, 5, 108-115.	5.1	12
76	The bulk and interfacial structures of the Î· (Al2Au) precipitate phase. Acta Materialia, 2016, 105, 284-293.	7.9	11
77	Magnesium-intercalated graphene on SiC: Highly n-doped air-stable bilayer graphene at extreme displacement fields. Applied Surface Science, 2021, 541, 148612.	6.1	11
78	Compositional patterning in coherent and dislocated alloy nanocrystals. Solid State Communications, 2009, 149, 1395-1402.	1.9	10
79	Enhanced Charge Carrier Mobility in Twoâ€Dimensional High Dielectric Molybdenum Oxide (Adv. Mater.) Tj ETQq1 1 0.784314 rgBT /Ov	21.0	9
80	Spontaneous Formation and Growth of a New Polytype on SiC(0001). Physical Review Letters, 2009, 103, 256101.	7.8	8
81	The Edge Stresses and Phase Transitions for Magnetic BN Zigzag Nanoribbons. Scientific Reports, 2017, 7, 7855.	3.3	8
82	Selective control of surface spin current in topological pyrite-type OsX2 (Xâ€‰=â€‰Se, Te) crystals. Npj Quantum Materials, 2019, 4, .	5.2	8
83	Molecularly Controlled Quantum Well Width Distribution and Optoelectronic Properties in Quasi-2D Perovskite Light-Emitting Diodes. Journal of Physical Chemistry Letters, 2022, 13, 4098-4103.	4.6	8
84	Shape dynamics in anisotropically strained two-dimensional self-assembling systems. Journal of Applied Physics, 2008, 103, 063523.	2.5	7
85	The formation mechanism of Janus nanostructures in one-pot reactions: the case of Agâ€“Ag₈GeS₆. Journal of Materials Chemistry A, 2016, 4, 7060-7070.	10.3	7
86	Dirac-point photocurrents due to the photothermoelectric effect in non-uniform graphene devices. Nature Nanotechnology, 2020, 15, 241-243.	31.5	7
87	Atomistic Insights into the Reformation of CH₄ with CO₂ on Metal-Free gC₃N₄: Unraveling the Reaction Mechanisms Using First-Principles DFT Calculations. Journal of Physical Chemistry C, 2021, 125, 23021-23028.	3.1	7
88	Self-assembling surface stress domains far from equilibrium. Applied Physics Letters, 2007, 91, 253101.	3.3	6
89	Atomistic insights into the adsorption and stimuli-responsive behavior of poly(N-isopropylacrylamide)â€“graphene hybrid systems. Physical Chemistry Chemical Physics, 2018, 20, 28592-28599.	2.8	6
90	Nearâ€Infrared and Visibleâ€Range Optoelectronics in 2D Hybrid Perovskite/Transition Metal Dichalcogenide Heterostructures. Advanced Materials Interfaces, 2022, 9, .	3.7	6

#	Article	IF	Citations
91	Enhancing kinetic and electrochemical performance of layered MoS2 cathodes with interlayer expansion for Mg-ion batteries. Journal of Power Sources, 2022, 542, 231722.	7.8	6
92	Tunable Hybridization Between Electronic States of Graphene and Physisorbed Hexacene. Journal of Physical Chemistry C, 2015, 119, 19526-19534.	3.1	5
93	Tunable electronic properties of partially edge-hydrogenated armchair boronâ€“nitrogenâ€“carbon nanoribbons. Physical Chemistry Chemical Physics, 2018, 20, 10345-10358.	2.8	5
94	Computational design of multilayer frameworks to achieve DOE target for on-board methane delivery. Carbon, 2019, 152, 206-217.	10.3	5
95	Probing the dynamic structural changes of <scp>DNA</scp> using ultrafast laser pulse in grapheneâ€based optofluidic device. InformaÄnÃ-MateriÃ¡ly, 2021, 3, 316-326.	17.3	4
96	Microstructural evolution of strained heteroepitaxial multilayers. Applied Physics Letters, 2008, 92, 173107.	3.3	3
97	Stress enhanced calcium kinetics in a neuron. Biomechanics and Modeling in Mechanobiology, 2018, 17, 169-180.	2.8	3
98	Spatial calcium kinetics after a traumatic brain injury. Biomechanics and Modeling in Mechanobiology, 2021, 20, 1413-1430.	2.8	3
99	Localized Wannier function based tight-binding models for two-dimensional allotropes of bismuth. New Journal of Physics, 2021, 23, 063042.	2.9	3
100	Allotropes selection apropos of photocatalytic CO2 reduction from first principles studies. Materials Today Physics, 2022, , 100751.	6.0	3
101	Reply to â€œComment on â€˜Atomistic Mechanisms of Mg Insertion Reactions in Group XIV Anodes for Mg-Ion Batteriesâ€™â€•. ACS Applied Materials & Interfaces, 2020, 12, 14739-14740.	8.0	2
102	Structure and Function of Nano-sized InSb Precipitate Embedded in an Al Alloy. Microscopy and Microanalysis, 2017, 23, 1948-1949.	0.4	1
103	Direct Solid-State Nucleation From Preexisting Coherent Precipitates in Aluminium. Microscopy and Microanalysis, 2017, 23, 430-431.	0.4	1
104	Non-uniform composition distribution in alloy quantum structures. , 2010, , .		0
105	Non-equivalent zigzag edge stresses for 2D binary compound honeycomb nanoribbons. , 2012, , .		0
106	Efficiency enhancement in Cu2ZnSnS4 solar cells with silica nanoparticles embedded in absorber layer. , 2015, , .		0
107	Making every electron count: materials characterization by quantitative analytical scanning transmission electron microscopy. Microscopy and Microanalysis, 2016, 22, 1430-1431.	0.4	0
108	A first-principles study of electronic properties of H and F-terminated zigzag BNC nanoribbons. AIP Conference Proceedings, 2016, , .	0.4	0

#	Article	IF	Citations
109	Advanced imaging and simulations of precipitate interfaces in aluminium alloys and their role in phase transformations. MATEC Web of Conferences, 2020, 326, 09003.	0.2	0
110	Phaseâ€Control of Singleâ€Crystalline Inorganic Halide Perovskites via Molecular Coordination Engineering (Adv. Funct. Mater. 16/2022). Advanced Functional Materials, 2022, 32, .	14.9	0