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	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
2	Wavelengthâ€Controlled Photocurrent Polarity Switching in BPâ€MoS₂ Heterostructure. Advanced Functional Materials, 2022, 32, .	14.9	22
3	Nearâ€Infrared and Visibleâ€Range Optoelectronics in 2D Hybrid Perovskite/Transition Metal Dichalcogenide Heterostructures. Advanced Materials Interfaces, 2022, 9, .	3.7	6
4	Large Magnetic Gap in a Designer Ferromagnetâ€“Topological Insulatorâ€“Ferromagnet Heterostructure. Advanced Materials, 2022, 34, e2107520.	21.0	17
5	Enhanced Photovoltaic Performance via a Bifunctional Additive in Tin-Based Perovskite Solar Cells. ACS Applied Energy Materials, 2022, 5, 108-115.	5.1	12
6	Phaseâ€Control of Singleâ€Crystalline Inorganic Halide Perovskites via Molecular Coordination Engineering. Advanced Functional Materials, 2022, 32, .	14.9	14
7	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
8	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
9	Allotropes selection apropos of photocatalytic CO2 reduction from first principles studies. Materials Today Physics, 2022, , 100751.	6.0	3
10	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
11	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
12	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
13	Detection of Halomethanes Using Cesium Lead Halide Perovskite Nanocrystals. ACS Nano, 2021, 15, 1454-1464.	14.6	32
14	Berry curvature origin of the thickness-dependent anomalous Hall effect in a ferromagnetic Weyl semimetal. Npj Quantum Materials, 2021, 6, .	5.2	26
15	Spatial calcium kinetics after a traumatic brain injury. Biomechanics and Modeling in Mechanobiology, 2021, 20, 1413-1430.	2.8	3
16	Localized Wannier function based tight-binding models for two-dimensional allotropes of bismuth. New Journal of Physics, 2021, 23, 063042.	2.9	3
17	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
18	Manifestation of Strongly Correlated Electrons in a 2D Kagome Metalâ€“Organic Framework. Advanced Functional Materials, 2021, 31, 2106474.	14.9	20

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19	A saccharide-based binder for efficient polysulfide regulations in Li-S batteries. Nature Communications, 2021, 12, 5375.	12.8	65
20	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
21	Enhancement of the intrinsic light harvesting capacity of Cs₂AgBiBr₆double perovskiteviamodification with sulphide. Journal of Materials Chemistry A, 2020, 8, 2008-2020.	10.3	54
22	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
23	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
24	Chemical switching of low-loss phonon polaritons in Î±-MoO3 by hydrogen intercalation. Nature Communications, 2020, 11, 2646.	12.8	54
25	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
26	Transforming solid-state precipitates via excess vacancies. Nature Communications, 2020, 11, 1248.	12.8	65
27	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
28	Dirac-point photocurrents due to the photothermoelectric effect in non-uniform graphene devices. Nature Nanotechnology, 2020, 15, 241-243.	31.5	7
29	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
30	Electronic Band Structure of In-Plane Ferroelectric van der Waals Î²â€²-In₂Se₃. ACS Applied Electronic Materials, 2020, 2, 213-219.	4.3	26
31	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
32	Composite Polymer Electrolyte for Highly Cyclable Room-Temperature Solid-State Magnesium Batteries. ACS Applied Energy Materials, 2019, 2, 7980-7990.	5.1	36
33	Selective control of surface spin current in topological pyrite-type OsX2 (Xâ€‰=â€‰Se, Te) crystals. Npj Quantum Materials, 2019, 4, .	5.2	8
34	Electric Field Control of Molecular Charge State in a Single-Component 2D Organic Nanoarray. ACS Nano, 2019, 13, 11882-11890.	14.6	14
35	Ordered intracrystalline pores in planar molybdenum oxide for enhanced alkaline hydrogen evolution. Journal of Materials Chemistry A, 2019, 7, 257-268.	10.3	70
36	Computational design of multilayer frameworks to achieve DOE target for on-board methane delivery. Carbon, 2019, 152, 206-217.	10.3	5

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37	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 50 732 Td (altimg="si2.s	7.9	20
38	Ion Agglomeration and Transport in MgCl2-Based Electrolytes for Rechargeable Magnesium Batteries. Journal of Physical Chemistry Letters, 2019, 10, 7856-7862.	4.6	15
39	Aqueous electrochemistry of the magnesium surface: Thermodynamic and kinetic profiles. Corrosion Science, 2019, 147, 53-68.	6.6	49
40	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
41	Tunable electronic properties of partially edge-hydrogenated armchair boronâ€“nitrogenâ€“carbon nanoribbons. Physical Chemistry Chemical Physics, 2018, 20, 10345-10358.	2.8	5
42	Strong Depletion in Hybrid Perovskite pâ€“n Junctions Induced by Local Electronic Doping. Advanced Materials, 2018, 30, e1705792.	21.0	141
43	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
44	Enzymatic and non-enzymatic electrochemical glucose sensor based on carbon nano-onions. Applied Surface Science, 2018, 442, 332-341.	6.1	93
45	Methane Adsorption and Separation in Slipped and Functionalized Covalent Organic Frameworks. Industrial & Engineering Chemistry Research, 2018, 57, 4767-4778.	3.7	36
46	Stress enhanced calcium kinetics in a neuron. Biomechanics and Modeling in Mechanobiology, 2018, 17, 169-180.	2.8	3
47	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
48	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
49	The bi-layered precipitate phase Î¶ in the Al-Ag alloy system. Acta Materialia, 2017, 132, 525-537.	7.9	14
50	Molecular Dipole-Driven Electronic Structure Modifications of DNA/RNA Nucleobases on Graphene. Journal of Physical Chemistry Letters, 2017, 8, 3087-3094.	4.6	17
51	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
52	CO₂adsorption and separation in covalent organic frameworks with interlayer slipping. CrystEngComm, 2017, 19, 6950-6963.	2.6	51
53	Vacancy-tuned precipitation pathways in Al-1.7 Cu-0.025In-0.025Sb (at.%) alloy. Acta Materialia, 2017, 141, 341-351.	7.9	37
54	The Edge Stresses and Phase Transitions for Magnetic BN Zigzag Nanoribbons. Scientific Reports, 2017, 7, 7855.	3.3	8

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55	From Half-Metal to Semiconductor: Electron-Correlation Effects in Zigzag SiC Nanoribbons From First Principles. Physical Review Applied, 2017, 7, .	3.8	18
56	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
57	Structure and Function of Nano-sized InSb Precipitate Embedded in an Al Alloy. Microscopy and Microanalysis, 2017, 23, 1948-1949.	0.4	1
58	Direct Solid-State Nucleation From Preexisting Coherent Precipitates in Aluminium. Microscopy and Microanalysis, 2017, 23, 430-431.	0.4	1
59	Making every electron count: materials characterization by quantitative analytical scanning transmission electron microscopy. Microscopy and Microanalysis, 2016, 22, 1430-1431.	0.4	0
60	CO₂ Adsorption in Azobenzene Functionalized Stimuli Responsive Metalâ€“Organic Frameworks. Journal of Physical Chemistry C, 2016, 120, 16658-16667.	3.1	53
61	Mechanisms of void shrinkage in aluminium. Journal of Applied Crystallography, 2016, 49, 1459-1470.	4.5	13
62	A first-principles study of electronic properties of H and F-terminated zigzag BNC nanoribbons. AIP Conference Proceedings, 2016, , .	0.4	0
63	The effect of absorbed hydrogen on the dissolution of steel. Heliyon, 2016, 2, e00209.	3.2	33
64	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
65	Electrochemical Stability of Magnesium Surfaces in an Aqueous Environment. Journal of Physical Chemistry C, 2016, 120, 26922-26933.	3.1	55
66	Cation/Anion Substitution in Cu2ZnSnS4 for Improved Photovoltaic Performance. Scientific Reports, 2016, 6, 35369.	3.3	83
67	Hydrogen induced amorphisation around nanocracks in aluminium. Engineering Fracture Mechanics, 2016, 161, 40-54.	4.3	12
68	The bulk and interfacial structures of the Î· (Al2Au) precipitate phase. Acta Materialia, 2016, 105, 284-293.	7.9	11
69	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
70	Efficiency enhancement in Cu2ZnSnS4 solar cells with silica nanoparticles embedded in absorber layer. , 2015, , .		0
71	Plasmon Resonances of Highly Doped Two-Dimensional MoS₂. Nano Letters, 2015, 15, 883-890.	9.1	167
72	On the prismatic precipitate plates in Mgâ€“Caâ€“In alloys. Scripta Materialia, 2015, 101, 16-19.	5.2	12

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73	Tunable Hybridization Between Electronic States of Graphene and Physisorbed Hexacene. Journal of Physical Chemistry C, 2015, 119, 19526-19534.	3.1	5
74	Porous Aromatic Frameworks Impregnated with Lithiated Fullerenes for Natural Gas Purification. Journal of Physical Chemistry C, 2015, 119, 9347-9354.	3.1	17
75	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
76	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
77	Corrosion mechanism and hydrogen evolution on Mg. Current Opinion in Solid State and Materials Science, 2015, 19, 85-94.	11.5	288
78	Ab initio characterization of layered MoS2 as anode for sodium-ion batteries. Journal of Power Sources, 2014, 268, 279-286.	7.8	377
79	Tunable Plasmon Resonances in Twoâ€Dimensional Molybdenum Oxide Nanoflakes. Advanced Materials, 2014, 26, 3931-3937.	21.0	308
80	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
81	Electrochemical Control of Photoluminescence in Two-Dimensional MoS₂ Nanoflakes. ACS Nano, 2013, 7, 10083-10093.	14.6	282
82	Postcombustion CO₂ Capture in Functionalized Porous Coordination Networks. Journal of Physical Chemistry C, 2013, 117, 26976-26987.	3.1	21
83	Enhanced lithium adsorption and diffusion on silicene nanoribbons. RSC Advances, 2013, 3, 20338.	3.6	26
84	Efficient Atomic-Scale Kinetics through a Complex Heterophase Interface. Physical Review Letters, 2013, 111, 046102.	7.8	42
85	Elastic softening of alloy negative electrodes for Na-ion batteries. Journal of Power Sources, 2013, 225, 207-214.	7.8	87
86	Enhanced Charge Carrier Mobility in Twoâ€Dimensional High Dielectric Molybdenum Oxide. Advanced Materials, 2013, 25, 109-114.	21.0	355
87	Enhanced Charge Carrier Mobility in Twoâ€Dimensional High Dielectric Molybdenum Oxide (Adv. Mater.) Tj ETQq1 1 0.784314 rgBT /Ov	21.0	9
88	Bonding Charge Density and Ultimate Strength of Monolayer Transition Metal Dichalcogenides. Journal of Physical Chemistry C, 2013, 117, 15842-15848.	3.1	133
89	Energetics and Kinetics of Li Intercalation in Irradiated Graphene Scaffolds. ACS Applied Materials & Interfaces, 2013, 5, 12968-12974.	8.0	24
90	Thermal transport in lattice-constrained 2D hybrid graphene heterostructures. Journal of Physics Condensed Matter, 2013, 25, 445007.	1.8	17

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91	Non-equivalent zigzag edge stresses for 2D binary compound honeycomb nanoribbons. , 2012, , .		0
92	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
93	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
94	Band engineering of Ni1â^'xMgxO alloys for photocathodes of high efficiency dye-sensitized solar cells. Journal of Applied Physics, 2012, 112, .	2.5	27
95	Exploring graphene as a corrosion protection barrier. Corrosion Science, 2012, 56, 1-4.	6.6	515
96	Edge stresses of non-stoichiometric edges in two-dimensional crystals. Applied Physics Letters, 2012, 100, .	3.3	21
97	Surface Charge Transfer Induced Ferromagnetism in Nanostructured ZnO/Al. Journal of Physical Chemistry C, 2012, 116, 8541-8547.	3.1	15
98	Hydrogen Bond Networks in Graphene Oxide Composite Paper: Structure and Mechanical Properties. ACS Nano, 2010, 4, 2300-2306.	14.6	674
99	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
100	Enhanced quantum confinement due to nonuniform composition in alloy quantum dots. Nanotechnology, 2010, 21, 095401.	2.6	13
101	Non-uniform composition distribution in alloy quantum structures. , 2010, , .		0
102	Spontaneous Formation and Growth of a New Polytype on SiC(0001). Physical Review Letters, 2009, 103, 256101.	7.8	8
103	Compositional patterning in coherent and dislocated alloy nanocrystals. Solid State Communications, 2009, 149, 1395-1402.	1.9	10
104	Stress-enhanced pattern formation on surfaces during low energy ion bombardment. Journal of Physics Condensed Matter, 2009, 21, 224021.	1.8	32
105	Substrate-induced magnetism in epitaxial graphene buffer layers. Nanotechnology, 2009, 20, 275705.	2.6	22
106	Composition Maps in Self-Assembled Alloy Quantum Dots. Physical Review Letters, 2008, 100, 106104.	7.8	46
107	Shape dynamics in anisotropically strained two-dimensional self-assembling systems. Journal of Applied Physics, 2008, 103, 063523.	2.5	7
108	Microstructural evolution of strained heteroepitaxial multilayers. Applied Physics Letters, 2008, 92, 173107.	3.3	3

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109	Metastability in 2D Self-Assembling Systems. Physical Review Letters, 2007, 99, 156102.	7.8	18
110	Self-assembling surface stress domains far from equilibrium. Applied Physics Letters, 2007, 91, 253101.	3.3	6