Nicholas A Melosh

List of Publications by Year
in descending order

99 papers	17,562 citations	61984 43 h-index	38395 95 g-index
104 all docs	104 docs citations	104 times ranked	19970 citing authors

#	Article	IF	Citations
1	Triblock Copolymer Syntheses of Mesoporous Silica with Periodic 50 to 300 Angstrom Pores. Science, 1998, 279, 548-552.	12.6	10,937
2	Ultrahigh-Density Nanowire Lattices and Circuits. Science, 2003, 300, 112-115.	12.6	846
3	Photon-enhanced thermionic emission for solar concentrator systems. Nature Materials, 2010, 9, 762-767.	27.5	442
4	Nanostrawâ€"Electroporation System for Highly Efficient Intracellular Delivery and Transfection. ACS Nano, 2013, 7, 4351-4358.	14.6	257
5	Plasmonic Energy Collection through Hot Carrier Extraction. Nano Letters, 2011, 11, 5426-5430.	9.1	250
6	A Nonvolatile Plasmonic Switch Employing Photochromic Molecules. Nano Letters, 2008, 8, 1506-1510.	9.1	220
7	Nanostraws for Direct Fluidic Intracellular Access. Nano Letters, 2012, 12, 3881-3886.	9.1	201
8	Shape Matters: Intravital Microscopy Reveals Surprising Geometrical Dependence for Nanoparticles in Tumor Models of Extravasation. Nano Letters, 2012, 12, 3369-3377.	9.1	189
9	Synergistic enhancement of electrocatalytic CO2 reduction to C2 oxygenates at nitrogen-doped nanodiamonds/Cu interface. Nature Nanotechnology, 2020, 15, 131-137.	31.5	169
10	Silicon chip-based patch-clamp electrodes integrated with PDMS microfluidics. Biosensors and Bioelectronics, 2004, 20, 509-517.	10.1	163
11	Mechanical Model of Vertical Nanowire Cell Penetration. Nano Letters, 2013, 13, 6002-6008.	9.1	161
12	An Ultrastrong Double-Layer Nanodiamond Interface for Stable Lithium Metal Anodes. Joule, 2018, 2, 1595-1609.	24.0	155
13	Cellular Differentiation of Human Monocytes Is Regulated by Time-Dependent Interleukin-4 Signaling and the Transcriptional Regulator NCOR2. Immunity, 2017, 47, 1051-1066.e12.	14.3	133
14	Quantification of nanowire penetration into living cells. Nature Communications, 2014, 5, 3613.	12.8	129
15	Nondestructive nanostraw intracellular sampling for longitudinal cell monitoring. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, E1866-E1874.	7.1	124
16	Optimal emitter-collector gap for thermionic energy converters. Applied Physics Letters, 2012, 100, .	3.3	118
17	Massively parallel microwire arrays integrated with CMOS chips for neural recording. Science Advances, 2020, 6, eaay2789.	10.3	115
18	Strongly Cavity-Enhanced Spontaneous Emission from Silicon-Vacancy Centers in Diamond. Nano Letters, 2018, 18, 1360-1365.	9.1	112

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19	Significantly enhanced photocurrent for water oxidation in monolithic Mo:BiVO₄/SnO₂/Si by thermally increasing the minority carrier diffusion length. Energy and Environmental Science, 2016, 9, 2044-2052.	30.8	105
20	Universal intracellular biomolecule delivery with precise dosage control. Science Advances, 2018, 4, eaat8131.	10.3	95
21	An Electrostatic Model for DNA Surface Hybridization. Biophysical Journal, 2010, 98, 2954-2963.	0.5	93
22	Fusion of biomimetic stealth probes into lipid bilayer cores. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 5815-5820.	7.1	91
23	Microfabricated Thermally Isolated Low Work-Function Emitter. Journal of Microelectromechanical Systems, 2014, 23, 1182-1187.	2.5	83
24	Temperature-dependent optical properties of titanium nitride. Applied Physics Letters, 2017, 110, .	3.3	83
25	Hybrid metalâ€“organic chalcogenide nanowires with electrically conductive inorganic core through diamondoid-directed assembly. Nature Materials, 2017, 16, 349-355.	27.5	79
26	Engineering Ultra-Low Work Function of Graphene. Nano Letters, 2015, 15, 6475-6480.	9.1	75
27	Nanostructured Materials for Intracellular Cargo Delivery. Accounts of Chemical Research, 2019, 52, 2462-2471.	15.6	73
28	Sterically controlled mechanochemistry under hydrostatic pressure. Nature, 2018, 554, 505-510.	27.8	71
29	Vertical-Substrate MPCVD Epitaxial Nanodiamond Growth. Nano Letters, 2017, 17, 1489-1495.	9.1	68
30	Determining the Time Window for Dynamic Nanowire Cell Penetration Processes. ACS Nano, 2015, 9, 11667-11677.	14.6	66
31	Electronic and Ionic Materials for Neurointerfaces. Advanced Functional Materials, 2018, 28, 1704335.	14.9	63
32	Nanotechnology and neurophysiology. Current Opinion in Neurobiology, 2015, 32, 132-140.	4.2	62
33	Soft Deposition of Large-Area Metal Contacts for Molecular Electronics. Advanced Materials, 2006, 18, 1499-1504.	21.0	61
34	Directed Hybridization and Melting of DNA Linkers using Counterion-Screened Electric Fields. Nano Letters, 2009, 9, 3521-3526.	9.1	61
35	Origin of the Monochromatic Photoemission Peak in Diamondoid Monolayers. Nano Letters, 2009, 9, 57-61.	9.1	58
36	Mesoporous Thin-Film on Highly-Sensitive Resonant Chemical Sensor for Relative Humidity and CO₂ Detection. Analytical Chemistry, 2012, 84, 3063-3066.	6.5	58

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37	Fabrication of Sealed Nanostraw Microdevices for Oral Drug Delivery. ACS Nano, 2016, 10, 5873-5881.	14.6	58
38	Back-gated graphene anode for more efficient thermionic energy converters. Nano Energy, 2017, 32, 67-72.	16.0	57
39	Rapid spatial and temporal controlled signal delivery over large cell culture areas. Lab on A Chip, 2011, 11, 3057.	6.0	53
40	Nanodiamond Integration with Photonic Devices. Laser and Photonics Reviews, 2019, 13, 1800316.	8.7	50
41	Penetration of Cell Membranes and Synthetic Lipid Bilayers by Nanoprobes. Biophysical Journal, 2014, 107, 2091-2100.	0.5	47
42	Formation and Characterization of Fluid Lipid Bilayers on Alumina. Langmuir, 2008, 24, 12734-12737.	3.5	46
43	Hybrid Group IV Nanophotonic Structures Incorporating Diamond Silicon-Vacancy Color Centers. Nano Letters, 2016, 16, 212-217.	9.1	46
44	Roadmap on semiconductorâ€“cell biointerfaces. Physical Biology, 2018, 15, 031002.	1.8	45
45	Ultralow effective work function surfaces using diamondoid monolayers. Nature Nanotechnology, 2016, 11, 267-272.	31.5	42
46	Electron-emission materials: Advances, applications, and models. MRS Bulletin, 2017, 42, 488-492.	3.5	41
47	Cavity-Enhanced Raman Emission from a Single Color Center in a Solid. Physical Review Letters, 2018, 121, 083601.	7.8	41
48	Plasma Membrane and Actin Cytoskeleton as Synergistic Barriers to Nanowire Cell Penetration. Langmuir, 2014, 30, 12362-12367.	3.5	40
49	Generation of Tin-Vacancy Centers in Diamond via Shallow Ion Implantation and Subsequent Diamond Overgrowth. Nano Letters, 2020, 20, 1614-1619.	9.1	40
50	Narrow-Linewidth Tin-Vacancy Centers in a Diamond Waveguide. ACS Photonics, 2020, 7, 2356-2361.	6.6	39
51	Experimental measurement of the diamond nucleation landscape reveals classical and nonclassical features. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 8284-8289.	7.1	37
52	Lipid Bilayer Deposition and Patterning via Air Bubble Collapse. Langmuir, 2007, 23, 9369-9377.	3.5	36
53	Microbead-separated thermionic energy converter with enhanced emission current. Physical Chemistry Chemical Physics, 2013, 15, 14442.	2.8	35
54	Dynamic actuation using nano-bio interfaces. Materials Today, 2010, 13, 14-22.	14.2	34

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55	Quantum Photonic Interface for Tin-Vacancy Centers in Diamond. Physical Review X, 2021, 11, .	8.9	34
56	Efficient optical coupling into metal-insulator-metal plasmon modes with subwavelength diffraction gratings. Applied Physics Letters, 2008, 92, 113109.	3.3	33
57	Complete coherent control of silicon vacancies in diamond nanopillars containing single defect centers. Optica, 2017, 4, 1317.	9.3	33
58	Transfection with Nanostructure Electroâ€Injection is Minimally Perturbative. Advanced Therapeutics, 2019, 2, 1900133.	3.2	30
59	Mesostructured Silica/Block Copolymer Composites as Hosts for Optically Limiting Tetraphenylporphyrin Dye Molecules. Journal of Physical Chemistry B, 2004, 108, 11909-11914.	2.6	29
60	Thermally-enhanced minority carrier collection in hematite during photoelectrochemical water and sulfite oxidation. Journal of Materials Chemistry A, 2015, 3, 10801-10810.	10.3	29
61	Direct Intracellular Delivery of Cellâ€Impermeable Probes of Protein Glycosylation by Using Nanostraws. ChemBioChem, 2017, 18, 623-628.	2.6	29
62	Molecular Structure Influences the Stability of Membrane Penetrating Biointerfaces.. Nano Letters, 2011, 11, 2066-2070.	9.1	28
63	Temporally resolved direct delivery of second messengers into cells using nanostraws. Lab on A Chip, 2016, 16, 2434-2439.	6.0	24
64	Functionalisation of Detonation Nanodiamond for Monodispersed, Soluble DNA-Nanodiamond Conjugates Using Mixed Silane Bead-Assisted Sonication Disintegration. Scientific Reports, 2018, 8, 728.	3.3	24
65	Identification and Passivation of Defects in Self-Assembled Monolayers. Langmuir, 2009, 25, 2585-2587.	3.5	23
66	Surface Photovoltage-Induced Ultralow Work Function Material for Thermionic Energy Converters. ACS Energy Letters, 2019, 4, 2436-2443.	17.4	23
67	Probing Molecular Junctions Using Surface Plasmon Resonance Spectroscopy. Nano Letters, 2006, 6, 2797-2803.	9.1	22
68	Nanoporeâ€Spanning Lipid Bilayers for Controlled Chemical Release. Advanced Materials, 2008, 20, 4423-4427.	21.0	22
69	Membrane indentation triggers clathrin lattice reorganization and fluidization. Soft Matter, 2015, 11, 439-448.	2.7	22
70	Continuum model of mechanical interactions between biological cells and artificial nanostructures. Biointerphases, 2010, 5, 37-44.	1.6	20
71	Fabrication of sub-cell size â€œspikyâ€• nanoparticles and their interfaces with biological cells. Journal of Materials Chemistry B, 2015, 3, 5155-5160.	5.8	19
72	Nanoscale patterning controls inorganicâ€"membrane interface structure. Nanoscale, 2011, 3, 391-400.	5.6	18

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73	A semiconductor/mixed ion and electron conductor heterojunction for elevated-temperature water splitting. Physical Chemistry Chemical Physics, 2013, 15, 15459.	2.8	18
74	Quantifying and Elucidating Thermally Enhanced Minority Carrier Diffusion Length Using Radius-Controlled Rutile Nanowires. Nano Letters, 2017, 17, 5264-5272.	9.1	18
75	Electronically Activated Actin Protein Polymerization and Alignment. Journal of the American Chemical Society, 2008, 130, 7908-7915.	13.7	17
76	Determining orientational structure of diamondoid thiols attached to silver using near-edge X-ray absorption fine structure spectroscopy. Journal of Electron Spectroscopy and Related Phenomena, 2009, 172, 69-77.	1.7	17
77	Mechanical Stimulation after Centrifugeâ€Free Nanoâ€Electroporative Transfection Is Efficient and Maintains Longâ€Term T Cell Functionalities. Small, 2021, 17, e2103198.	10.0	17
78	Impact of Rigidity on Molecular Self-Assembly. Langmuir, 2019, 35, 16062-16069.	3.5	16
79	CHIME: CMOS-Hosted in vivo Microelectrodes for Massively Scalable Neuronal Recordings. Frontiers in Neuroscience, 2020, 14, 834.	2.8	15
80	Dynamic control of biomolecular activity using electrical interfaces. Soft Matter, 2007, 3, 267-274.	2.7	13
81	Photocathode device using diamondoid and cesium bromide films. Applied Physics Letters, 2012, 101, 241605.	3.3	13
82	Nanoparticles make salty circuits. Nature Nanotechnology, 2016, 11, 579-580.	31.5	11
83	Monochromatic Photocathodes from Graphene-Stabilized Diamondoids. Nano Letters, 2018, 18, 1099-1103.	9.1	8
84	Self-Assembly of Mesoscale Artificial Clathrin Mimics. ACS Nano, 2017, 11, 9889-9897.	14.6	7
85	Interfacial effects in thin films of polymeric semiconductors. Journal of Vacuum Science & Technology B, 2008, 26, 1454.	1.3	6
86	High-Bandwidth AFM Probes for Imaging in Air and Fluid. Journal of Microelectromechanical Systems, 2013, 22, 603-612.	2.5	6
87	Rheology and simulation of 2-dimensional clathrin protein network assembly. Soft Matter, 2014, 10, 6219.	2.7	5
88	Agâ€"Diamond Coreâ€"Shell Nanostructures Incorporated with Silicon-Vacancy Centers. ACS Materials Au, 2022, 2, 85-93.	6.0	3
89	Detection by failure. Nature Chemistry, 2010, 2, 1006-1007.	13.6	1
90	Effects of tip-induced material reorganization in dynamic force spectroscopy. Physical Review E, 2010, 82, 031911.	2.1	1

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91	Direct Penetration of Cell-Penetrating Peptides Across Lipid Bilayers. Biophysical Journal, 2012, 102, 487a.	0.5	1
92	Nanostraws for Direct Fluidic Intracellular Access. Biophysical Journal, 2012, 102, 583a.	0.5	1
93	Nanostraws: A Nanofabricated Platform for Delivery of Cell-Impermeable, Synthetic Biomolecules. Biophysical Journal, 2015, 108, 149a.	0.5	1
94	Sparking to life. Nature Materials, 2019, 18, 1156-1157.	27.5	1
95	A nanophotonic interface for tin-vacancy spin qubits in diamond. , 2021, , .		1
96	Novel Nanoscale Patch-Clamp Arrays for Probing Neuronal Electrical Activities. Biophysical Journal, 2012, 102, 299a.	0.5	0
97	Mechanical Model of Cell Membrane Penetration by Vertical Nanowires. Biophysical Journal, 2012, 102, 205a.	0.5	0
98	Bioorthogonal Calcium Modulation by Direct Intracellular Access using Nanostraws. Biophysical Journal, 2015, 108, 568a.	0.5	0
99	Narrow-linewidth tin-vacancy centers in diamond waveguides. , 2021, , .		0