Aleksandr Noy

List of Publications by Year
in descending order

120	14,040	43973 48	22764 112
papers	citations	h-index	g-index

126	126	126	14858
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Fast Mass Transport Through Sub-2-Nanometer Carbon Nanotubes. Science, 2006, 312, 1034-1037.	6.0	2,604
2	Nanofluidics in carbon nanotubes. Nano Today, 2007, 2, 22-29.	6.2	1,072
3	Functional Group Imaging by Chemical Force Microscopy. Science, 1994, 265, 2071-2074.	6.0	988
4	Formation of chiral morphologies through selective binding of amino acids to calcite surface steps. Nature, 2001, 411, 775-779.	13.7	621
5	Ion exclusion by sub-2-nm carbon nanotube pores. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 17250-17255.	3.3	609
6	Enhanced water permeability and tunable ion selectivity in subnanometer carbon nanotube porins. Science, 2017, 357, 792-796.	6.0	566
7	Chemical Force Microscopy: Exploiting Chemically-Modified Tips To Quantify Adhesion, Friction, and Functional Group Distributions in Molecular Assemblies. Journal of the American Chemical Society, 1995, 117, 7943-7951.	6.6	523
8	High-resolution ab initio three-dimensional x-ray diffraction microscopy. Journal of the Optical Society of America A: Optics and Image Science, and Vision, 2006, 23, 1179.	0.8	511
9	CHEMICAL FORCE MICROSCOPY. Annual Review of Materials Research, 1997, 27, 381-421.	5.5	439
10	Force Titrations and Ionization State Sensitive Imaging of Functional Groups in Aqueous Solutions by Chemical Force Microscopy. Journal of the American Chemical Society, 1997, 119, 2006-2015.	6.6	409
11	Towards single-species selectivity of membranes with subnanometre pores. Nature Nanotechnology, 2020, 15, 426-436.	15.6	389
12	Stochastic transport through carbon nanotubes in lipid bilayers and live cell membranes. Nature, 2014, 514, 612-615.	13.7	350
13	Interpreting the widespread nonlinear force spectra of intermolecular bonds. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 13573-13578.	3.3	270
14	Fabrication of Luminescent Nanostructures and Polymer Nanowires Using Dip-Pen Nanolithography. Nano Letters, 2002, 2, 109-112.	4.5	236
15	Critical Knowledge Gaps in Mass Transport through Single-Digit Nanopores: A Review and Perspective. Journal of Physical Chemistry C, 2019, 123, 21309-21326.	1.5	234
16	Ultrafast proton transport in sub-1-nm diameter carbon nanotube porins. Nature Nanotechnology, 2016, 11, 639-644.	15.6	193
17	Chemically-Sensitive Imaging in Tapping Mode by Chemical Force Microscopy:Â Relationship between Phase Lag and Adhesion. Langmuir, 1998, 14, 1508-1511.	1.6	163
18	Layer-by-Layer Electrostatic Self-Assembly of Polyelectrolyte Nanoshells on Individual Carbon Nanotube Templates. Langmuir, 2004, 20, 1442-1448.	1.6	163

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19	Dynamic force spectroscopy of parallel individual Mucin1-antibody bonds. Proceedings of the National Academy of Sciences of the United States of America, 2005, 102, 16638-16643.	3.3	163
20	Fabrication of a Carbon Nanotube-Embedded Silicon Nitride Membrane for Studies of Nanometer-Scale Mass Transport. Nano Letters, 2004, 4, 2245-2250.	4.5	152
21	Bioelectronic silicon nanowire devices using functional membrane proteins. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 13780-13784.	3.3	151
22	Ultrafast Gas Chromatography on Single-Wall Carbon Nanotube Stationary Phases in Microfabricated Channels. Analytical Chemistry, 2006, 78, 5639-5644.	3.2	137
23	Effect of Dissolution Kinetics on Feature Size in Dip-Pen Nanolithography. Physical Review Letters, 2002, 88, 255505.	2.9	126
24	Stretching and breaking duplex DNA by chemical force microscopy. Chemistry and Biology, 1997, 4, 519-527.	6.2	123
25	Bionanoelectronics. Advanced Materials, 2011, 23, 807-820.	11.1	118
26	Tuning crystallization pathways through sequence engineering of biomimetic polymers. Nature Materials, 2017, 16, 767-774.	13.3	116
27	Solution of the Nonlinear Poissonâ€"Boltzmann Equation Using Pseudo-transient Continuation and the Finite Element Method. Journal of Colloid and Interface Science, 2002, 247, 62-79.	5.0	105
28	Mechanism and Kinetics of Growth Termination in Controlled Chemical Vapor Deposition Growth of Multiwall Carbon Nanotube Arrays. Nano Letters, 2009, 9, 738-744.	4.5	104
29	Controlled Electrostatic Gating of Carbon Nanotube FET Devices. Nano Letters, 2006, 6, 2080-2085.	4.5	100
30	pH-Tunable Ion Selectivity in Carbon Nanotube Pores. Langmuir, 2010, 26, 14848-14853.	1.6	100
31	High permeability sub-nanometre sieve composite MoS2 membranes. Nature Communications, 2020, 11, 2747.	5.8	93
32	Strength of Multiple Parallel Biological Bonds. Biophysical Journal, 2006, 90, 4686-4691.	0.2	87
33	Practical single molecule force spectroscopy: How to determine fundamental thermodynamic parameters of intermolecular bonds with an atomic force microscope. Methods, 2013, 60, 142-150.	1.9	80
34	A microcantileverâ€based pathogen detector. Scanning, 2003, 25, 297-299.	0.7	76
35	Chemical force microscopy of chemical and biological interactions. Surface and Interface Analysis, 2006, 38, 1429-1441.	0.8	76
36	Carbon Nanotube Transistor Controlled by a Biological Ion Pump Gate. Nano Letters, 2010, 10, 1812-1816.	4.5	72

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37	Chemical force microscopy: probing chemical origin of interfacial forces and adhesion. Journal of Adhesion Science and Technology, 2005, 19, 313-364.	1.4	69
38	Force spectroscopy 101: how to design, perform, and analyze an AFM-based single molecule force spectroscopy experiment. Current Opinion in Chemical Biology, 2011, 15, 710-718.	2.8	68
39	Growth Kinetics of Vertically Aligned Carbon Nanotube Arrays in Clean Oxygen-free Conditions. ACS Nano, 2011, 5, 9602-9610.	7.3	67
40	Single functional group interactions with individual carbon nanotubes. Nature Nanotechnology, 2007, 2, 692-697.	15.6	59
41	Functional One-Dimensional Lipid Bilayers on Carbon Nanotube Templates. Journal of the American Chemical Society, 2005, 127, 7538-7542.	6.6	58
42	Water-ion permselectivity of narrow-diameter carbon nanotubes. Science Advances, 2020, 6, .	4.7	58
43	Laser-Assisted Simultaneous Transfer and Patterning of Vertically Aligned Carbon Nanotube Arrays on Polymer Substrates for Flexible Devices. ACS Nano, 2012, 6, 7858-7866.	7.3	57
44	Lipid Bilayer Composition Can Influence the Orientation of Proteorhodopsin in Artificial Membranes. Biophysical Journal, 2013, 105, 1388-1396.	0.2	57
45	Mechanism of DNA Compaction by Yeast Mitochondrial Protein Abf2p. Biophysical Journal, 2004, 86, 1632-1639.	0.2	56
46	Packaging of Single DNA Molecules by the Yeast Mitochondrial Protein Abf2p. Biophysical Journal, 2003, 85, 2519-2524.	0.2	53
47	Near-Equilibrium Chemical Force Microscopy. Journal of Physical Chemistry C, 2008, 112, 4986-4990.	1.5	52
48	Highly Efficient Biocompatible Single Silicon Nanowire Electrodes with Functional Biological Pore Channels. Nano Letters, 2009, 9, 1121-1126.	4.5	50
49	Frictionless Sliding of Single-Stranded DNA in a Carbon Nanotube Pore Observed by Single Molecule Force Spectroscopy. Nano Letters, 2011, 11, 1171-1176.	4.5	46
50	Strong Electroosmotic Coupling Dominates Ion Conductance of 1.5 nm Diameter Carbon Nanotube Porins. ACS Nano, 2019, 13, 12851-12859.	7.3	46
51	Persistence Length Control of the Polyelectrolyte Layer-by-Layer Self-Assembly on Carbon Nanotubes. Journal of the American Chemical Society, 2005, 127, 14176-14177.	6.6	43
52	Synthesis, lipid membrane incorporation, and ion permeability testing of carbon nanotube porins. Nature Protocols, 2016, 11, 2029-2047.	5.5	42
53	Matrix-Assisted Energy Conversion in Nanostructured Piezoelectric Arrays. Nano Letters, 2010, 10, 4901-4907.	4.5	39
54	Osmotically-Driven Transport in Carbon Nanotube Porins. Nano Letters, 2014, 14, 7051-7056.	4.5	39

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55	Entropic Barriers in Nanoscale Adhesion Studied by Variable Temperature Chemical Force Microscopy. Journal of the American Chemical Society, 2003, 125, 1356-1362.	6.6	37
56	Formation, Stability, and Mobility of One-Dimensional Lipid Bilayers on Polysilicon Nanowires. Nano Letters, 2007, 7, 3355-3359.	4.5	37
57	Bionanoelectronics with 1D materials. Materials Today, 2009, 12, 22-31.	8.3	36
58	Strong Differential Monovalent Anion Selectivity in Narrow Diameter Carbon Nanotube Porins. ACS Nano, 2020, 14, 6269-6275.	7.3	35
59	Crossing Over: Nanostructures that Move Electrons and Ions across Cellular Membranes. Advanced Materials, 2015, 27, 5797-5804.	11.1	32
60	Carbon Nanotube Porins in Amphiphilic Block Copolymers as Fully Synthetic Mimics of Biological Membranes. Advanced Materials, 2018, 30, e1803355.	11.1	29
61	Determination of Energy Barriers for Intermolecular Interactions by Variable Temperature Dynamic Force Spectroscopyâ€. Langmuir, 2003, 19, 1457-1461.	1.6	28
62	Cell-free production of a functional oligomeric form of a Chlamydia major outer-membrane protein (MOMP) for vaccine development. Journal of Biological Chemistry, 2017, 292, 15121-15132.	1.6	28
63	Bioelectronic Lightâ€Gated Transistors with Biologically Tunable Performance. Advanced Materials, 2015, 27, 831-836.	11.1	27
64	Biofunctional Subwavelength Optical Waveguides for Biodetection. ACS Nano, 2008, 2, 255-262.	7.3	25
65	Hidden role of trace gas impurities in chemical vapor deposition growth of vertically-aligned carbon nanotube arrays. Applied Physics Letters, 2011, 98, 153102.	1.5	25
66	Membrane fusion and drug delivery with carbon nanotube porins. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	25
67	Silicon Nanoribbon pH Sensors Protected by a Barrier Membrane with Carbon Nanotube Porins. Nano Letters, 2019, 19, 629-634.	4.5	24
68	Understanding Cation Selectivity in Carbon Nanopores with Hybrid First-Principles/Continuum Simulations: Implications for Water Desalination and Separation Technologies. ACS Applied Nano Materials, 2020, 3, 9740-9748.	2.4	23
69	Batteryless Chemical Detection with Semiconductor Nanowires. Advanced Materials, 2011, 23, 117-121.	11.1	22
70	Combined force and photonic probe microscope with single molecule sensitivity. Review of Scientific Instruments, 2003, 74, 1217-1221.	0.6	21
71	Antifouling strategies for protecting bioelectronic devices. APL Materials, 2021, 9, .	2.2	20
72	Real-time dynamics of carbon nanotube porins in supported lipid membranes visualized by high-speed atomic force microscopy. Philosophical Transactions of the Royal Society B: Biological Sciences, 2017, 372, 20160226.	1.8	19

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73	Response to Comment on â€œEnhanced water permeability and tunable ion selectivity in subnanometer carbon nanotube porinsâ€ Science, 2018, 359, .	6.0	18
74	Water-Assisted Growth of Uniform 100 mm Diameter SWCNT Arrays. ACS Applied Materials & Interfaces, 2014, 6, 21019-21025.	4.0	15
75	Early-Stage Aggregation and Crystalline Interactions of Peptoid Nanomembranes. Journal of Physical Chemistry Letters, 2021, 12, 6126-6133.	2.1	14
76	Effect of Enhanced Thermal Stability of Alumina Support Layer on Growth of Vertically Aligned Single-Walled Carbon Nanotubes and Their Application in Nanofiltration Membranes. Nanoscale Research Letters, 2018, 13, 173.	3.1	13
77	Kinetic Model of Gas Transport in Carbon Nanotube Channels. Journal of Physical Chemistry C, 2013, 117, 7656-7660.	1.5	12
78	Structure of Carbon Nanotube Porins in Lipid Bilayers: An in Situ Small-Angle X-ray Scattering (SAXS) Study. Nano Letters, 2016, 16, 4019-4024.	4.5	12
79	High-Yield Synthesis and Optical Properties of Carbon Nanotube Porins. Journal of Physical Chemistry C, 2017, 121, 3117-3125.	1.5	11
80	A new type of artificial water channels. Nature Nanotechnology, 2020, 15, 9-10.	15.6	11
81	The effect of liquid-induced adhesion changes on the interfacial shear strength between self-assembled monolayers. Journal of Adhesion Science and Technology, 2003, 17, 1385-1401.	1.4	10
82	Strength in Numbers: Probing and Understanding Intermolecular Bonding with Chemical Force Microscopy. Scanning, 2008, 30, 96-105.	0.7	10
83	Carbon nanotube porin diffusion in mixed composition supported lipid bilayers. Scientific Reports, 2020, 10, 11908.	1.6	10
84	Counting and Breaking Individual Biological Bonds: Force Spectroscopy of Tethered Ligand-Receptor Pairs. Current Nanoscience, 2007, 3, 41-48.	0.7	10
85	Chemical Force Microscopy Nanoscale Probing of Fundamental Chemical Interactions. , 2008, , 97-122.		9
86	Direct determination of the equilibrium unbinding potential profile for a short DNA duplex from force spectroscopy data. Applied Physics Letters, 2004, 85, 4792-4794.	1.5	8
87	Electronic control of H+ current in a bioprotonic device with carbon nanotube porins. PLoS ONE, 2019, 14, e0212197.	1.1	8
88	Proteins make for finer filters. Nature Nanotechnology, 2009, 4, 345-346.	15.6	7
89	Nanosensors: Batteryless Chemical Detection with Semiconductor Nanowires (Adv. Mater. 1/2011). Advanced Materials, 2011, 23, 2-2.	11.1	7
90	Electric Field Induced Biomimetic Transmembrane Electron Transport Using Carbon Nanotube Porins. Small, 2021, 17, e2102517.	5.2	7

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91	Chemical Force Microscopy: Force Spectroscopy and Imaging of Complex Interactions in Molecular Assemblies. , 2008, , 123-141.		7
92	Singleâ€Molecule Approach to Understanding Multivalent Binding Kinetics. Annals of the New York Academy of Sciences, 2009, 1161, 74-82.	1.8	6
93	Let go of your data. Nature Materials, 2020, 19, 128-128.	13.3	6
94	Impact of PEG additives and pore rim functionalization on water transport through sub-1Ânm carbon nanotube porins. Faraday Discussions, 2018, 209, 359-369.	1.6	5
95	Decoupling copolymer, lipid and carbon nanotube interactions in hybrid, biomimetic vesicles. Nanoscale, 2020, 12, 6545-6555.	2.8	5
96	Electrostatic gating of ion transport in carbon nanotube porins: A modeling study. Journal of Chemical Physics, 2021, 154, 204704.	1.2	5
97	Nanofluidic Carbon Nanotube Membranes. , 2014, , 173-188.		4
98	Structure and function of natural proteins for water transport: general discussion. Faraday Discussions, 2018, 209, 83-95.	1.6	4
99	Applications to water transport systems: general discussion. Faraday Discussions, 2018, 209, 389-414.	1.6	4
100	Interactions at solidâ€“fluid interfaces. Nanostructure Science and Technology, 2004, , 57-82.	0.1	4
101	Mimicking Biology with Nanomaterials: Carbon Nanotube Porins in Lipid Membranes. Biophysical Journal, 2015, 108, 443a.	0.2	3
102	Chemical Force Microscopy: Probing and Imaging Interactions Between Functional Groups. ACS Symposium Series, 1998, , 312-320.	0.5	2
103	Carbon Nanotube-Based Permeable Membranes. Materials Research Society Symposia Proceedings, 2004, 820, 1.	0.1	2
104	Prospective schemes for next generation x-ray lasers. Proceedings of SPIE, 2009, , .	0.8	2
105	Nanotechnologyâ€™s Wonder Material: Synthesis of Carbon Nanotubes. RSC Nanoscience and Nanotechnology, 2014, , 26-58.	0.2	2
106	Ordering in bio-inorganic hybrid nanomaterials probed by in situ scanning transmission X-ray microscopy. Nanoscale, 2015, 7, 9477-9486.	2.8	2
107	Ultra-Fast Proton Transport in Sub-1-nm Diameter Carbon Nanotube Porins. Biophysical Journal, 2016, 110, 338a.	0.2	2
108	The modelling and enhancement of water hydrodynamics: general discussion. Faraday Discussions, 2018, 209, 273-285.	1.6	2

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109	Advances in bioelectronics: Materials, devices, and translational applications. APL Materials, 2021, 9, 070402.	2.2	2
110	Chemical Force Microscopy. Microscopy and Microanalysis, 1997, 3, 1253-1254.	0.2	1
111	Fabrication and characterisation of suspended carbon nanotube devices in liquid. International Journal of Nanotechnology, 2008, 5, 488.	0.1	1
112	Carbon Nanotube Porins: A Versatile Synthetic Biomimetic Membrane Channel Platform. Biophysical Journal, 2018, 114, 183a.	0.2	1
113	Functional Integration of Membrane Proteins with Nanotube and Nanowire Transistor Devices. Methods in Molecular Biology, 2011, 751, 533-552.	0.4	1
114	Fabrication of luminescent nanostructures by dip-pen nanolithography. , 2002, 4809, 249.		0
115	In session. Materials Today, 2013, 16, 48-49.	8.3	0
116	Single-Channel Measurements of Conductance through Sub-Nanometer Carbon Nanotube Porins. Biophysical Journal, 2017, 112, 155a.	0.2	0
117	Membranes: Carbon Nanotube Porins in Amphiphilic Block Copolymers as Fully Synthetic Mimics of Biological Membranes (Adv. Mater. 51/2018). Advanced Materials, 2018, 30, 1870392.	11.1	0
118	Counting and Breaking Single Bonds. , 2008, , 251-272.		0
119	Dip-Pen Nanolithography. , 2008, , 1084-1092.		0
120	Dip-Pen Nanolithography: Optical Inks. , 0, , 1175-1183.		0