

Douglas Natelson

List of Publications by Year in descending order

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103
papers

8,714
citations

66343

42
h-index

40979

93
g-index

107
all docs

107
docs citations

107
times ranked

13258
citing authors

#	ARTICLE	IF	CITATIONS
1	Intra-molecular switching for memory and logic. Nature Materials, 2022, 21, 839-840.	27.5	4
2	Probing energy dissipation in molecular-scale junctions via surface enhanced Raman spectroscopy: vibrational pumping and hot carrier enhanced light emission. Journal of Physics Condensed Matter, 2021, 33, 134001.	1.8	3
3	Thousand-fold Increase in Plasmonic Light Emission via Combined Electronic and Optical Excitations. Nano Letters, 2021, 21, 2658-2665.	9.1	12
4	Detection of Trace Impurity Gradients in Noble Metals by the Photothermoelectric Effect. Journal of Physical Chemistry C, 2021, 125, 17509-17517.	3.1	0
5	Single Metal Photodetectors Using Plasmonically-Active Asymmetric Gold Nanostructures. ACS Nano, 2020, 14, 17535-17542.	14.6	14
6	Percolation and nanosecond fluctuators in V2O3 films within the metal-insulator transition. APL Materials, 2020, 8, .	5.1	3
7	Thermoelectric response from grain boundaries and lattice distortions in crystalline gold devices. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 23350-23355.	7.1	10
8	Hot-carrier enhanced light emission: The origin of above-threshold photons from electrically driven plasmonic tunnel junctions. Journal of Applied Physics, 2020, 128, .	2.5	10
9	Electrically Driven Hot-Carrier Generation and Above-Threshold Light Emission in Plasmonic Tunnel Junctions. Nano Letters, 2020, 20, 6067-6075.	9.1	38
10	Tunneling spectroscopy of c -axis epitaxial cuprate junctions. Physical Review B, 2020, 101, .	3.2	5
11	Tunneling noise and defects in exfoliated hexagonal boron nitride. AIP Advances, 2019, 9, 105218.	1.3	0
12	Electron pairing in the pseudogap state revealed by shot noise in copper oxide junctions. Nature, 2019, 572, 493-496.	27.8	56
13	Noise processes in InAs/Ga(In)Sb Corbino structures. Applied Physics Letters, 2019, 115, 052107.	3.3	2
14	Room-Temperature Magnetic Order in Air-Stable Ultrathin Iron Oxide. Nano Letters, 2019, 19, 3777-3781.	9.1	40
15	Remote Excitation of Hot Electrons via Propagating Surface Plasmons. Journal of Physical Chemistry C, 2019, 123, 10057-10064.	3.1	9
16	Photothermoelectric Detection of Gold Oxide Nonthermal Decomposition. Nano Letters, 2018, 18, 6557-6562.	9.1	7
17	Photovoltages and hot electrons in plasmonic nanogaps. , 2018, , .		1
18	Shot noise detection in hBN-based tunnel junctions. Applied Physics Letters, 2017, 110, .	3.3	6

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19	Potential Fluctuations at Low Temperatures in Mesoscopic-Scale $\text{SmTiO}_3/\text{SrTiO}_3/\text{SmTiO}_3$ Quantum Well Structures. ACS Nano, 2017, 11, 3760-3766.	14.6	1
20	Substantial local variation of the Seebeck coefficient in gold nanowires. Nanoscale, 2017, 9, 9160-9166.	5.6	21
21	Mesoscopic quantum effects in a bad metal, hydrogen-doped vanadium dioxide. Journal of Physics Condensed Matter, 2017, 29, 185601.	1.8	2
22	Photothermoelectric Effects and Large Photovoltages in Plasmonic Au Nanowires with Nanogaps. Journal of Physical Chemistry Letters, 2017, 8, 1739-1744.	4.6	37
23	Sequential insulator-metal-insulator phase transitions of $V\text{O}_2$ triggered by hydrogen doping. Physical Review B, 2017, 96, .	3.2	53
24	Quantifying Remote Heating from Propagating Surface Plasmon Polaritons. Nano Letters, 2017, 17, 5646-5652.	9.1	13
25	Quantification of Electron Beam Heating Effect in TEM. Microscopy and Microanalysis, 2017, 23, 1766-1767.	0.4	4
26	In-situ Thermal Testing on Nanostructures in TEM. Microscopy and Microanalysis, 2016, 22, 770-771.	0.4	0
27	Plasmonic Heating in Au Nanowires at Low Temperatures: The Role of Thermal Boundary Resistance. ACS Nano, 2016, 10, 6972-6979.	14.6	34
28	Thickness-Dependent and Magnetic-Field-Driven Suppression of Antiferromagnetic Order in Thin V_5S_8 Single Crystals. ACS Nano, 2016, 10, 5941-5946.	14.6	33
29	Surface-Enhanced Infrared Absorption of Self-Aligned Nanogap Structures. Journal of Physical Chemistry C, 2016, 120, 22558-22564.	3.1	20
30	Current noise enhancement: channel mixing and possible nonequilibrium phonon backaction in atomic-scale Au junctions. Journal of Physics Condensed Matter, 2016, 28, 495303.	1.8	6
31	Interplay of Bias-Driven Charging and the Vibrational Stark Effect in Molecular Junctions. Nano Letters, 2016, 16, 1104-1109.	9.1	40
32	Facile Synthesis of Single Crystal Vanadium Disulfide Nanosheets by Chemical Vapor Deposition for Efficient Hydrogen Evolution Reaction. Advanced Materials, 2015, 27, 5605-5609.	21.0	241
33	Plasmon-Assisted Photoresponse in Ge-Coated Bowtie Nanojunctions. ACS Photonics, 2015, 2, 1192-1198.	6.6	7
34	Fabrication of Sub-Lithography-Limited Structures via Nanomasking Technique for Plasmonic Enhancement Applications. IEEE Nanotechnology Magazine, 2015, 14, 790-793.	2.0	19
35	Thermally driven analog of the Barkhausen effect at the metal-insulator transition in vanadium dioxide. Applied Physics Letters, 2014, 105, 131902.	3.3	1
36	Nanostructure investigations of nonlinear differential conductance in NdNiO_3 thin films. Physical Review B, 2014, 90, .	3.2	6

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37	Optical nanogap matrices for plasmonic enhancement applications. , 2014, , .		2
38	Iron Oxide Nanoparticle and Graphene Nanoribbon Composite as an Anode Material for High-Performance Lithium Ion Batteries. <i>Advanced Functional Materials</i> , 2014, 24, 2044-2048.	14.9	156
39	Thermoplasmonics: Quantifying Plasmonic Heating in Single Nanowires. <i>Nano Letters</i> , 2014, 14, 499-503.	9.1	124
40	Hydrogen Diffusion and Stabilization in Single-Crystal VO ₂ Micro/Nanobeams by Direct Atomic Hydrogenation. <i>Nano Letters</i> , 2014, 14, 5445-5451.	9.1	65
41	Voltage tuning of vibrational mode energies in single-molecule junctions. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014, 111, 1282-1287.	7.1	63
42	<i>In Situ</i> Diffraction Study of Catalytic Hydrogenation of VO ₂ : Stable Phases and Origins of Metallicity. <i>Journal of the American Chemical Society</i> , 2014, 136, 8100-8109.	13.7	67
43	Lateral Resolution Enhancement of Vertical Scanning Interferometry by Sub-Pixel Sampling. <i>Microscopy and Microanalysis</i> , 2014, 20, 90-98.	0.4	15
44	High-Performance and Low-Power Rewritable SiO _x 1 kbit One Diode-One Resistor Crossbar Memory Array. <i>Advanced Materials</i> , 2013, 25, 4789-4793.	21.0	66
45	Nanogap structures: combining enhanced Raman spectroscopy and electronic transport. <i>Physical Chemistry Chemical Physics</i> , 2013, 15, 5262.	2.8	63
46	A solid triple point. <i>Nature</i> , 2013, 500, 408-409.	27.8	8
47	3-Dimensional Graphene Carbon Nanotube Carpet-Based Microsupercapacitors with High Electrochemical Performance. <i>Nano Letters</i> , 2013, 13, 72-78.	9.1	672
48	Dark Plasmons in Hot Spot Generation and Polarization in Interelectrode Nanoscale Junctions. <i>Nano Letters</i> , 2013, 13, 1359-1364.	9.1	93
49	Graphene Nanoribbon and Nanostructured SnO ₂ Composite Anodes for Lithium Ion Batteries. <i>ACS Nano</i> , 2013, 7, 6001-6006.	14.6	421
50	Local charge transfer doping in suspended graphene nanojunctions. <i>Applied Physics Letters</i> , 2012, 100, 023306.	3.3	3
51	Modulation of the Electrical Properties of VO ₂ Nanobeams Using an Ionic Liquid as a Gating Medium. <i>Nano Letters</i> , 2012, 12, 2988-2992.	9.1	148
52	Highly transparent nonvolatile resistive memory devices from silicon oxide and graphene. <i>Nature Communications</i> , 2012, 3, 1101.	12.8	162
53	Strongly Correlated Materials. <i>Advanced Materials</i> , 2012, 24, 4896-4923.	21.0	129
54	Plasmonic Materials: A Plethora of Plasmonics from the Laboratory for Nanophotonics at Rice University (<i>Adv. Mater.</i> 36/2012). <i>Advanced Materials</i> , 2012, 24, 4774-4774.	21.0	5

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55	In situ imaging of the conducting filament in a silicon oxide resistive switch. <i>Scientific Reports</i> , 2012, 2, 242.	3.3	153
56	Hydrogen stabilization of metallic vanadium dioxide in single-crystal nanobeams. <i>Nature Nanotechnology</i> , 2012, 7, 357-362.	31.5	259
57	Mechanical Break Junctions: Enormous Information in a Nanoscale Package. <i>ACS Nano</i> , 2012, 6, 2871-2876.	14.6	21
58	A Plethora of Plasmonics from the Laboratory for Nanophotonics at Rice University. <i>Advanced Materials</i> , 2012, 24, 4842-4877.	21.0	94
59	Nanostructure studies of strongly correlated materials. <i>Nanoscale</i> , 2011, 3, 3509.	5.6	30
60	Silicon Oxide: A Non-innocent Surface for Molecular Electronics and Nanoelectronics Studies. <i>Journal of the American Chemical Society</i> , 2011, 133, 941-948.	13.7	52
61	Vibrational and electronic heating in nanoscale junctions. <i>Nature Nanotechnology</i> , 2011, 6, 33-38.	31.5	208
62	Intrinsic resistive switching and memory effects in silicon oxide. <i>Applied Physics A: Materials Science and Processing</i> , 2011, 102, 835-839.	2.3	43
63	Plasmons in nanoscale metal junctions: optical rectification and thermometry. , 2011, , .		2
64	Ion motion and electrochemistry in nanostructures. <i>MRS Bulletin</i> , 2011, 36, 914-920.	3.5	7
65	Resistive Switches and Memories from Silicon Oxide. <i>Nano Letters</i> , 2010, 10, 4105-4110.	9.1	293
66	Carrier characteristics. <i>Nature Materials</i> , 2010, 9, 703-704.	27.5	1
67	Optical rectification and field enhancement in a plasmonic nanogap. <i>Nature Nanotechnology</i> , 2010, 5, 732-736.	31.5	348
68	Kondo Resonances in Molecular Devices. <i>ACS Nano</i> , 2010, 4, 3560-3579.	14.6	138
69	Anomalous Transport and Possible Phase Transition in Palladium Nanojunctions. <i>ACS Nano</i> , 2010, 4, 2831-2837.	14.6	6
70	Electronic transport in monolayer graphene nanoribbons produced by chemical unzipping of carbon nanotubes. <i>Applied Physics Letters</i> , 2009, 95, .	3.3	74
71	Resistive Switching in Nanogap Systems on SiO ₂ Substrates. <i>Small</i> , 2009, 5, 2910-2915.	10.0	68
72	The Kondo effect in ferromagnetic atomic contacts. <i>Nature</i> , 2009, 458, 1150-1153.	27.8	132

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73	Better than average. Nature Nanotechnology, 2009, 4, 406-407.	31.5	14
74	Two-Terminal Nonvolatile Memories Based on Single-Walled Carbon Nanotubes. ACS Nano, 2009, 3, 4122-4126.	14.6	57
75	Towards the ultimate transistor. Physics World, 2009, 22, 27-31.	0.0	2
76	Interfacial charge transfer in nanoscale polymer transistors. Nano Research, 2008, 1, 341-350.	10.4	5
77	Electrically driven phase transition in magnetite nanostructures. Nature Materials, 2008, 7, 130-133.	27.5	124
78	Simultaneous Measurements of Electronic Conduction and Raman Response in Molecular Junctions. Nano Letters, 2008, 8, 919-924.	9.1	270
79	Localized heating in nanoscale Pt constrictions measured using blackbody radiation emission. Applied Physics Letters, 2008, 93, .	3.3	23
80	Etching-dependent reproducible memory switching in vertical SiO ₂ structures. Applied Physics Letters, 2008, 93, .	3.3	30
81	Photoconductive Properties of Regioregular Poly(3-hexylthiophene). , 2007, , .		0
82	Electromigrated Nanoscale Gaps for Surface-Enhanced Raman Spectroscopy. Nano Letters, 2007, 7, 1396-1400.	9.1	295
83	Low-Field Magnetic Separation of Monodisperse Fe ₃ O ₄ Nanocrystals. Science, 2006, 314, 964-967.	12.6	1,153
84	Electrostatic modification of novel materials. Reviews of Modern Physics, 2006, 78, 1185-1212.	45.6	465
85	Neutral Complexes of First Row Transition Metals Bearing Unbound Thiocyanates and Their Assembly on Metallic Surfaces. Journal of the American Chemical Society, 2006, 128, 3179-3189.	13.7	52
86	Controlling Charge Injection in Organic Field-Effect Transistors Using Self-Assembled Monolayers. Nano Letters, 2006, 6, 1303-1306.	9.1	173
87	Best of both worlds. Nature Materials, 2006, 5, 853-854.	27.5	16
88	Single-molecule transistors: Electron transfer in the solid state. Chemical Physics, 2006, 324, 267-275.	1.9	63
89	Inelastic Electron Tunneling via Molecular Vibrations in Single-Molecule Transistors. Physical Review Letters, 2004, 93, 266802.	7.8	290
90	The Kondo Effect in C ₆₀ Single-Molecule Transistors. Nano Letters, 2004, 4, 79-83.	9.1	337

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91	Temperature-dependent contact resistances in high-quality polymer field-effect transistors. Applied Physics Letters, 2004, 84, 443-445.	3.3	134
92	Transport in single-molecule transistors: Kondo physics and negative differential resistance. Nanotechnology, 2004, 15, S517-S524.	2.6	40
93	Gated Nonlinear Transport in Organic Thin Film Transistors. Materials Research Society Symposia Proceedings, 2003, 771, 6101.	0.1	0
94	Thermal Conductivity in Glasses Below 1K: New Technique and Results. Journal of Low Temperature Physics, 2000, 120, 259-268.	1.4	6
95	Evidence for Growth of Collective Excitations in Glasses at Low Temperatures. Physical Review Letters, 1998, 80, 4689-4692.	7.8	38
96	He3 immersion cell for ultralow temperature study of amorphous solids. Review of Scientific Instruments, 1997, 68, 1831-1834.	1.3	6
97	Nonequilibrium and hysteretic low temperature dielectric response to strain in glasses. Journal of Low Temperature Physics, 1997, 106, 717-725.	1.4	7
98	Interactions between active defects in glasses at low temperatures. European Physical Journal D, 1996, 46, 3295-3302.	0.4	10
99	Anomalous behavior of $\hat{\mu}$ (‰) in glasses at low temperature due to bias application. European Physical Journal D, 1996, 46, 2263-2264.	0.4	3
100	Dielectric response of two level systems to strain fields at low temperatures. European Physical Journal D, 1996, 46, 2265-2266.	0.4	2
101	Anomalous dielectric properties of amorphous solids at low temperatures. Physica B: Condensed Matter, 1996, 219-220, 243-246.	2.7	0
102	Evidence for the Importance of Interactions between Active Defects in Glasses. Physical Review Letters, 1996, 76, 3136-3139.	7.8	66
103	Radiatively driven hypersonic wind tunnel. AIAA Journal, 1995, 33, 1463-1470.	2.6	58