Nicolas Agrait

List of Publications by Year
in descending order

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125 papers	11,717 citations	44069 48 h-index	26613 107 g-index
128 all docs	128 docs citations	128 times ranked	10330 citing authors

#	Article	IF	Citations
1	Thermoelectric Enhancement in Single Organic Radical Molecules. Nano Letters, 2022, 22, 948-953.	9.1	28
2	Exploring seebeck-coefficient fluctuations in endohedral-fullerene, single-molecule junctions. Nanoscale Horizons, 2022, 7, 616-625.	8.0	11
3	Quantum interference dependence on molecular configurations for cross-conjugated systems in single-molecule junctions. Molecular Systems Design and Engineering, 2022, 7, 1287-1293.	3.4	5
4	2,7- and 4,9-Dialkynyldihydropyrene Molecular Switches: Syntheses, Properties, and Charge Transport in Single-Molecule Junctions. Journal of the American Chemical Society, 2022, 144, 12698-12714.	13.7	12
5	Singleâ€Molecule Conductance of 1,4â€Azaborine Derivatives as Models of BNâ€doped PAHs. Angewandte Chemie - International Edition, 2021, 60, 6609-6616.	13.8	20
6	Single-molecule conductance of dibenzopentalenes: antiaromaticity and quantum interference. Chemical Communications, 2021, 57, 745-748.	4.1	32
7	Long-lived charged states of single porphyrin-tape junctions under ambient conditions. Nanoscale Horizons, 2021, 6, 49-58.	8.0	8
8	Molecular Structureâ€"(Thermo)electric Property Relationships in Single-Molecule Junctions and Comparisons with Single- and Multiple-Parameter Models. Journal of the American Chemical Society, 2021, 143, 3817-3829.	13.7	35
9	Singleâ€Molecule Conductance of 1,4â€Azaborine Derivatives as Models of BNâ€doped PAHs. Angewandte Chemie, 2021, 133, 6683-6690.	2.0	2
10	Interference Controls Conductance in Phthalocyanine Molecular Junctions. Journal of Physical Chemistry C, 2021, 125, 15035-15043.	3.1	7
11	Three-state molecular potentiometer based on a non-symmetrically positioned in-backbone linker. Journal of Materials Chemistry C, 2021, 9, 16282-16289.	5.5	6
12	A Peierls Transition in Long Polymethine Molecular Wires: Evolution of Molecular Geometry and Single-Molecule Conductance. Journal of the American Chemical Society, 2021, 143, 20472-20481.	13.7	19
13	Microheater Actuators as a Versatile Platform for Strain Engineering in 2D Materials. Nano Letters, 2020, 20, 5339-5345.	9.1	29
14	Connectivity dependent thermopower of bridged biphenyl molecules in single-molecule junctions. Nanoscale, 2020, 12, 14682-14688.	5.6	13
15	Cross-conjugation increases the conductance of meta-connected fluorenones. Nanoscale, 2019, 11, 13720-13724.	5.6	25
16	Can One Define the Conductance of Amino Acids?. Biomolecules, 2019, 9, 580.	4.0	29
17	Effect of Charge-Assisted Hydrogen Bonds on Single-Molecule Electron Transport. Journal of Physical Chemistry C, 2019, 123, 29386-29393.	3.1	11
18	Fast Yet Quantumâ€Efficient Fewâ€Layer Vertical MoS₂ Photodetectors. Advanced Electronic Materials, 2019, 5, 1900141.	5.1	16

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19	Unusual Length Dependence of the Conductance in Cumulene Molecular Wires. Angewandte Chemie, 2019, 131, 8466-8470.	2.0	11
20	Unusual Length Dependence of the Conductance in Cumulene Molecular Wires. Angewandte Chemie - International Edition, 2019, 58, 8378-8382.	13.8	39
21	Strong modulation of optical properties in rippled 2D GaSe via strain engineering. Nanotechnology, 2019, 30, 24LT01.	2.6	21
22	The Role of Oligomeric Goldâ€“Thiolate Units in Single-Molecule Junctions of Thiol-Anchored Molecules. Journal of Physical Chemistry C, 2018, 122, 3211-3218.	3.1	41
23	Detecting Mechanochemical Atropisomerization within an STM Break Junction. Journal of the American Chemical Society, 2018, 140, 710-718.	13.7	38
24	Thermoelectric Properties of 2,7-Dipyridylfluorene Derivatives in Single-Molecule Junctions. Journal of Physical Chemistry C, 2018, 122, 27198-27204.	3.1	33
25	Bias-Driven Conductance Increase with Length in Porphyrin Tapes. Journal of the American Chemical Society, 2018, 140, 12877-12883.	13.7	84
26	Gate tunable photovoltaic effect in MoS₂ vertical pâ€“n homostructures. Journal of Materials Chemistry C, 2017, 5, 854-861.	5.5	50
27	Strain engineering of Schottky barriers in single- and few-layer MoS ₂ vertical devices. 2D Materials, 2017, 4, 021006.	4.4	54
28	Franckeite as a naturally occurring van der Waals heterostructure. Nature Communications, 2017, 8, 14409.	12.8	103
29	High Current Density Electrical Breakdown of TiS₃ Nanoribbonâ€Based Fieldâ€Effect Transistors. Advanced Functional Materials, 2017, 27, 1605647.	14.9	52
30	Lithography-free electrical transport measurements on 2D materials by direct microprobing. Journal of Materials Chemistry C, 2017, 5, 11252-11258.	5.5	6
31	Photodiodes based in La _{0.7} Sr _{0.3} MnO ₃ /single layer MoS ₂ hybrid vertical heterostructures. 2D Materials, 2017, 4, 034002.	4.4	5
32	Centimeter-Scale Synthesis of Ultrathin Layered MoO₃ by van der Waals Epitaxy. Chemistry of Materials, 2016, 28, 4042-4051.	6.7	100
33	Strong Modulation of Optical Properties in Black Phosphorus through Strain-Engineered Rippling. Nano Letters, 2016, 16, 2931-2937.	9.1	199
34	Strong Quantum Confinement Effect in the Optical Properties of Ultrathin Î±â€In₂Se₃. Advanced Optical Materials, 2016, 4, 1939-1943.	7.3	89
35	Enhanced superconductivity in atomically thin TaS2. Nature Communications, 2016, 7, 11043.	12.8	285
36	Highly responsive UV-photodetectors based on single electrospun TiO₂ nanofibres. Journal of Materials Chemistry C, 2016, 4, 10707-10714.	5.5	41

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37	Thermopower measurements in molecular junctions. Chemical Society Reviews, 2016, 45, 4285-4306.	38.1	126
38	Molecular design and control of fullerene-based bi-thermoelectric materials. Nature Materials, 2016, 15, 289-293.	27.5	132
39	Spatially resolved optical absorption spectroscopy of single- and few-layer MoS₂by hyperspectral imaging. Nanotechnology, 2016, 27, 115705.	2.6	145
40	Electronic Bandgap and Exciton Binding Energy of Layered Semiconductor TiS₃. Advanced Electronic Materials, 2015, 1, 1500126.	5.1	59
41	Single-molecule conductance of a chemically modified, Ï€-extended tetrathiafulvalene and its charge-transfer complex with F₄TCNQ. Beilstein Journal of Organic Chemistry, 2015, 11, 1068-1078.	2.2	29
42	Enhanced Visibility of MoS2, MoSe2, WSe2 and Black-Phosphorus: Making Optical Identification of 2D Semiconductors Easier. Electronics (Switzerland), 2015, 4, 847-856.	3.1	44
43	Quantum Thermopower of Metallic Atomic-Size Contacts at Room Temperature. Nano Letters, 2015, 15, 1006-1011.	9.1	39
44	Current rectification in a single molecule diode: the role of electrode coupling. Nanotechnology, 2015, 26, 291001.	2.6	51
45	Toward Multiple Conductance Pathways with Heterocycle-Based Oligo(phenyleneethynylene) Derivatives. Journal of the American Chemical Society, 2015, 137, 13818-13826.	13.7	64
46	Incorporating single molecules into electrical circuits. The role of the chemical anchoring group. Chemical Society Reviews, 2015, 44, 920-942.	38.1	154
47	Mechanical Properties of Metallic Nanocontacts. Nanoscience and Technology, 2015, , 333-361.	1.5	0
48	Note: Long-range scanning tunneling microscope for the study of nanostructures on insulating substrates. Review of Scientific Instruments, 2014, 85, 026105.	1.3	2
49	Single-layer MoS2 roughness and sliding friction quenching by interaction with atomically flat substrates. Applied Physics Letters, 2014, 105, .	3.3	64
50	Mechanical Properties and Electric Field Screening of Atomically Thin MoS2 Crystals. Lecture Notes in Nanoscale Science and Technology, 2014, , 129-153.	0.8	0
51	Does a Cyclopropane Ring Enhance the Electronic Communication in Dumbbell-Type C60 Dimers?. Journal of Organic Chemistry, 2014, 79, 4871-4877.	3.2	10
52	A Comprehensive Study of Extended Tetrathiafulvalene Cruciform Molecules for Molecular Electronics: Synthesis and Electrical Transport Measurements. Journal of the American Chemical Society, 2014, 136, 16497-16507.	13.7	55
53	Structural versus Electrical Functionalization of Oligo(phenylene ethynylene) Diamine Molecular Junctions. Journal of Physical Chemistry C, 2014, 118, 21655-21662.	3.1	42
54	Periodic spatial variation of the electron-phonon interaction in epitaxial graphene on Ru(0001). Applied Physics Letters, 2013, 102, .	3.3	8

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55	Stability of Single- and Few-Molecule Junctions of Conjugated Diamines. Journal of the American Chemical Society, 2013, 135, 5420-5426.	13.7	26
56	Fast and reliable identification of atomically thin layers of TaSe2 crystals. Nano Research, 2013, 6, 191-199.	10.4	62
57	Engineering the Thermopower of C₆₀ Molecular Junctions. Nano Letters, 2013, 13, 2141-2145.	9.1	156
58	A Detailed Experimental and Theoretical Study into the Properties of C₆₀ Dumbbell Junctions. Small, 2013, 9, 3812-3822.	10.0	11
59	Electricâ€Field Screening in Atomically Thin Layers of MoS₂: the Role of Interlayer Coupling. Advanced Materials, 2013, 25, 899-903.	21.0	143
60	Elastic Properties of Freely Suspended MoS₂ Nanosheets. Advanced Materials, 2012, 24, 772-775.	21.0	905
61	Highly reproducible low temperature scanning tunneling microscopy and spectroscopy with in situ prepared tips. Ultramicroscopy, 2012, 122, 1-5.	1.9	13
62	Mechanical properties of freely suspended semiconducting graphene-like layers based on MoS2. Nanoscale Research Letters, 2012, 7, 233.	5.7	134
63	Carbon-fiber tips for scanning probe microscopes and molecular electronics experiments. Nanoscale Research Letters, 2012, 7, 254.	5.7	4
64	Calibration of Piezoelectric Positioning Actuators Using a Reference Voltage-to-Displacement Transducer Based on Quartz Tuning Forks. Microscopy and Microanalysis, 2012, 18, 353-358.	0.4	7
65	Mechanical properties of freely suspended atomically thin dielectric layers of mica. Nano Research, 2012, 5, 550-557.	10.4	87
66	Spatially resolved electronic inhomogeneities of graphene due to subsurface charges. Carbon, 2012, 50, 932-938.	10.3	27
67	Influence of Binding Groups on Molecular Junction Formation. Journal of the American Chemical Society, 2011, 133, 14313-14319.	13.7	80
68	Break-Junction Experiments on Acetyl-Protected Conjugated Dithiols under Different Environmental Conditions. Journal of Physical Chemistry C, 2011, 115, 17973-17978.	3.1	62
69	Carbon tips as electrodes for single-molecule junctions. Applied Physics Letters, 2011, 99, 123105.	3.3	8
70	Unambiguous One-Molecule Conductance Measurements under Ambient Conditions. Nano Letters, 2011, 11, 2236-2241.	9.1	81
71	Atomically Thin Mica Flakes and Their Application as Ultrathin Insulating Substrates for Graphene. Small, 2011, 7, 2491-2497.	10.0	81
72	Force-gradient-induced mechanical dissipation of quartz tuning fork force sensors used in atomic force microscopy. Ultramicroscopy, 2011, 111, 186-190.	1.9	30

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73	Carbon fibre tips for scanning probe microscopy based on quartz tuning fork force sensors. Nanotechnology, 2010, 21, 145702.	2.6	29
74	Characterization of single-molecule pentanedithiol junctions by inelastic electron tunneling spectroscopy and first-principles calculations. Physical Review B, 2010, 81, .	3.2	47
75	Optical identification of atomically thin dichalcogenide crystals. Applied Physics Letters, 2010, 96, .	3.3	277
76	Dynamics of quartz tuning fork force sensors used in scanning probe microscopy. Nanotechnology, 2009, 20, 215502.	2.6	87
77	Ultralong Natural Graphene Nanoribbons and Their Electrical Conductivity. Small, 2009, 5, 924-927.	10.0	33
78	Study of Electronâ^'Phonon Interactions in a Single Molecule Covalently Connected to Two Electrodes. Nano Letters, 2008, 8, 1673-1678.	9.1	94
79	A low temperature scanning tunneling microscope for electronic and force spectroscopy. Review of Scientific Instruments, 2007, 78, 113705.	1.3	25
80	Tetrathiafulvalene-based molecular nanowires. Chemical Communications, 2007, , 4854.	4.1	33
81	Universal features of electron-phonon interactions in atomic wires. Physical Review B, 2006, 73, .	3.2	100
82	Distribution of conduction channels in nanoscale contacts: Evolution towards the diffusive limit. Europhysics Letters, 2005, 70, 663-669.	2.0	19
83	Metallic Adhesion in Atomic-Size Junctions. Physical Review Letters, 2004, 93, 116803.	7.8	64
84	Quantum properties of atomic-sized conductors. Physics Reports, 2003, 377, 81-279.	25.6	1,404
85	Single-channel transmission in gold one-atom contacts and chains. Physical Review B, 2003, 67, .	3.2	26
86	Calibration of the length of a chain of single gold atoms. Physical Review B, 2002, 66, .	3.2	132
87	Onset of Energy Dissipation in Ballistic Atomic Wires. Physical Review Letters, 2002, 88, 216803.	7.8	239
88	Electron transport and phonons in atomic wires. Chemical Physics, 2002, 281, 231-234.	1.9	62
89	Mechanical Properties and Formation Mechanisms of a Wire of Single Gold Atoms. Physical Review Letters, 2001, 87, .	7.8	379
90	Tunneling and point-contact spectroscopy on NbSe2. Physica C: Superconductivity and Its Applications, 2000, 332, 450-455.	1.2	6

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91	Quantum interference in atomic-sized point contacts. Physical Review B, 2000, 62, 9962-9965.	3.2	54
92	Atomic-Size Conductors. , 1999, , 290-301.		0
93	Formation and manipulation of a metallic wire of single gold atoms. Nature, 1998, 395, 783-785.	27.8	942
94	The signature of chemical valence in the electrical conduction through a single-atom contact. Nature, 1998, 394, 154-157.	27.8	597
95	Evolution of Conducting Channels in Metallic Atomic Contacts under Elastic Deformation. Physical Review Letters, 1998, 81, 2990-2993.	7.8	154
96	Nanosized superconducting constrictions. Physical Review B, 1998, 58, 11173-11176.	3.2	32
97	Nanocontacts: Probing Electronic Structure under Extreme Uniaxial Strains. Physical Review Letters, 1997, 79, 4198-4201.	7.8	35
98	Experimental evidence of nonactivated creep inPb(ZrxTi1â^'x)O3ceramics at low temperatures. Physical Review B, 1997, 56, R2900-R2903.	3.2	14
99	Electronic Structure Under Extreme Uniaxial Strains: Conductance in Metallic Nanocontacts.. Materials Research Society Symposia Proceedings, 1997, 499, 173.	0.1	0
100	Fabrication and characterization of metallic nanowires. Physical Review B, 1997, 56, 2154-2160.	3.2	88
101	Use of Capacitance to Measure Surface Forces. 1. Measuring Distance of Separation with Enhanced Spatial and Time Resolution. Langmuir, 1996, 12, 3289-3294.	3.5	44
102	Plastic Deformation in Nanometer Scale Contactsâ€. Langmuir, 1996, 12, 4505-4509.	3.5	35
103	Variation of the Interfacial Shear Strength and Adhesion of a Nanometer-Sized Contact. Langmuir, 1996, 12, 3334-3340.	3.5	281
104	Atomic-Sized Metallic Contacts: Mechanical Properties and Electronic Transport. Physical Review Letters, 1996, 76, 2302-2305.	7.8	539
105	STM study of the atomic contact between metallic electrodes. Physica B: Condensed Matter, 1996, 218, 238-241.	2.7	38
106	Measurement of interfacial shear (friction) with an ultrahigh vacuum atomic force microscope. Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena, 1996, 14, 1289.	1.6	304
107	Reversed metal replicas of freeze-dried proteins to be visualized with the scanning tunneling microscope. Ultramicroscopy, 1995, 60, 41-48.	1.9	5
108	Plastic Deformation of Nanometer-Scale Gold Connective Necks. Physical Review Letters, 1995, 74, 3995-3998.	7.8	283

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109	Josephson effect in nanoscopic structures. Physical Review B, 1994, 50, 12788-12792.	3.2	11
110	Conductance regimes in superconducting junctions of atomic size. Physical Review B, 1994, 50, 374-379.	3.2	9
111	Superconducting phonon structure in the transition from tunneling to contact regime. Physical Review B, 1994, 50, 7177-7179.	3.2	6
112	Plastic deformation in atomic size contacts. Thin Solid Films, 1994, 253, 199-203.	1.8	28
113	Conductance steps and quantization in atomic-size contacts. Physical Review B, 1993, 47, 12345-12348.	3.2	402
114	Atomic-scale connective neck formation and characterization. Physical Review B, 1993, 48, 8499-8501.	3.2	61
115	Transition from the tunneling regime to point contact and proximity-induced Josephson effect in leadâ€“normal-metal nanojunctions. Physical Review B, 1992, 46, 5814-5817.	3.2	34
116	Vertical inertial piezoelectric translation device for a scanning tunneling microscope. Review of Scientific Instruments, 1992, 63, 263-264.	1.3	25
117	Unipolar injection induced instabilities in plane parallel flows. IEEE Transactions on Industry Applications, 1992, 28, 513-519.	4.9	26
118	On the transition from tunneling regime to point-contact: graphite. Ultramicroscopy, 1992, 42-44, 177-183.	1.9	20
119	Anisotropy of upper critical field near TC and magnetic gap of superconducting URu2Si2 single crystal.. Physica C: Superconductivity and Its Applications, 1991, 185-189, 2623-2624.	1.2	0
120	Anisotropy of the upper critical field near Tc and the properties of URu2Si2 and UBe13 in the normal state. Journal of Low Temperature Physics, 1991, 85, 359-376.	1.4	32
121	Tunneling measurements of the energy gap in Tlâ€•and Biâ€based oxide superconductors. Journal of Applied Physics, 1990, 67, 5026-5028.	2.5	9
122	Linear convective patterns in cylindrical geometry for unipolar injection. Physics of Fluids A, Fluid Dynamics, 1990, 2, 37-44.	1.6	36
123	Oscillatory and steady convection in a dielectric viscoelastic layer subjected to a temperature gradient in the presence of an electric field. Journal of Non-Newtonian Fluid Mechanics, 1986, 21, 1-12.	2.4	4
124	Electrohydrodynamically induced instabilities in parallel flows. , 0, , .		0
125	Hydrodynamic instabilities in annular flows subjected to orthogonal unipolar injection. , 0, , .		2