

Leo Gross

List of Publications by Year in descending order

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98
papers

9,142
citations

53751

45
h-index

39638

94
g-index

98
all docs

98
docs citations

98
times ranked

6575
citing authors

#	ARTICLE	IF	CITATIONS
1	The Chemical Structure of a Molecule Resolved by Atomic Force Microscopy. <i>Science</i> , 2009, 325, 1110-1114.	6.0	1,489
2	Unraveling the Molecular Structures of Asphaltenes by Atomic Force Microscopy. <i>Journal of the American Chemical Society</i> , 2015, 137, 9870-9876.	6.6	545
3	Bond-Order Discrimination by Atomic Force Microscopy. <i>Science</i> , 2012, 337, 1326-1329.	6.0	457
4	An sp-hybridized molecular carbon allotrope, cyclo[18]carbon. <i>Science</i> , 2019, 365, 1299-1301.	6.0	412
5	Synthesis and characterization of triangulene. <i>Nature Nanotechnology</i> , 2017, 12, 308-311.	15.6	351
6	Measuring the Charge State of an Adatom with Noncontact Atomic Force Microscopy. <i>Science</i> , 2009, 324, 1428-1431.	6.0	317
7	Organic structure determination using atomic-resolution scanning probe microscopy. <i>Nature Chemistry</i> , 2010, 2, 821-825.	6.6	300
8	Imaging the charge distribution within a single molecule. <i>Nature Nanotechnology</i> , 2012, 7, 227-231.	15.6	295
9	High-Resolution Molecular Orbital Imaging Using a $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"} \rangle \langle \text{mml:mi} \rangle \langle \text{mml:mi} \rangle \langle \text{mml:math} \rangle$ -Wave STM Tip. <i>Physical Review Letters</i> , 2011, 107, 086101.	2.9	225
10	Heavy Oil Based Mixtures of Different Origins and Treatments Studied by Atomic Force Microscopy. <i>Energy & Fuels</i> , 2017, 31, 6856-6861.	2.5	206
11	Oxygen-induced restructuring of the TiO ₂ (110) surface: a comprehensive study. <i>Surface Science</i> , 1999, 437, 173-190.	0.8	184
12	Recent advances in submolecular resolution with scanning probe microscopy. <i>Nature Chemistry</i> , 2011, 3, 273-278.	6.6	179
13	On-surface generation and imaging of arynes by atomic force microscopy. <i>Nature Chemistry</i> , 2015, 7, 623-628.	6.6	176
14	A rack-and-pinion device at the molecular scale. <i>Nature Materials</i> , 2007, 6, 30-33.	13.3	171
15	Reversible Bergman cyclization by atomic manipulation. <i>Nature Chemistry</i> , 2016, 8, 220-224.	6.6	169
16	Adsorption Geometry Determination of Single Molecules by Atomic Force Microscopy. <i>Physical Review Letters</i> , 2013, 111, 106103.	2.9	162
17	Generation, manipulation and characterization of molecules by atomic force microscopy. <i>Nature Reviews Chemistry</i> , 2017, 1, .	13.8	147
18	Reversible Bond Formation in a Gold-Atom-Organic-Molecule Complex as a Molecular Switch. <i>Physical Review Letters</i> , 2010, 105, 266102.	2.9	142

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19	Different tips for high-resolution atomic force microscopy and scanning tunneling microscopy of single molecules. <i>Applied Physics Letters</i> , 2013, 102, .	1.5	141
20	Atomic Force Microscopy for Molecular Structure Elucidation. <i>Angewandte Chemie - International Edition</i> , 2018, 57, 3888-3908.	7.2	135
21	On the early stages of soot formation: Molecular structure elucidation by high-resolution atomic force microscopy. <i>Combustion and Flame</i> , 2019, 205, 154-164.	2.8	134
22	The mechanisms underlying the enhanced resolution of atomic force microscopy with functionalized tips. <i>New Journal of Physics</i> , 2010, 12, 125020.	1.2	131
23	Polyne formation via skeletal rearrangement induced by atomic manipulation. <i>Nature Chemistry</i> , 2018, 10, 853-858.	6.6	105
24	Characterizing aliphatic moieties in hydrocarbons with atomic force microscopy. <i>Chemical Science</i> , 2017, 8, 2315-2320.	3.7	102
25	Overview of Asphaltene Nanostructures and Thermodynamic Applications. <i>Energy & Fuels</i> , 2020, 34, 15082-15105.	2.5	101
26	From Perylene to a 22â€­Ring Aromatic Hydrocarbon in Oneâ€­Pot. <i>Angewandte Chemie - International Edition</i> , 2014, 53, 9004-9006.	7.2	94
27	A Combined Atomic Force Microscopy and Computational Approach for the Structural Elucidation of Breitfussin A and B: Highly Modified Halogenated Dipeptides from <i>Thiaria breitfussi</i> . <i>Angewandte Chemie - International Edition</i> , 2012, 51, 12238-12241.	7.2	92
28	Trapping and moving metal atoms with a six-leg molecule. <i>Nature Materials</i> , 2005, 4, 892-895.	13.3	88
29	Resistless nanofabrication by stencil lithography: A review. <i>Microelectronic Engineering</i> , 2015, 132, 236-254.	1.1	88
30	The Electric Field of CO Tips and Its Relevance for Atomic Force Microscopy. <i>Nano Letters</i> , 2016, 16, 1974-1980.	4.5	79
31	Contrast Formation in Kelvin Probe Force Microscopy of Single π -Conjugated Molecules. <i>Nano Letters</i> , 2014, 14, 3342-3346.	4.5	77
32	Reorganization energy upon charging a single molecule on an insulator measured by atomic force microscopy. <i>Nature Nanotechnology</i> , 2018, 13, 376-380.	15.6	77
33	Structural transitions of perylene and coronene on silver and gold surfaces: A molecular-beam epitaxy LEED study. <i>Physical Review B</i> , 2001, 64, .	1.1	76
34	Image Distortions of a Partially Fluorinated Hydrocarbon Molecule in Atomic Force Microscopy with Carbon Monoxide Terminated Tips. <i>Nano Letters</i> , 2014, 14, 6127-6131.	4.5	73
35	Synthesis of Cyclo[18]carbon via Debromination of $C_{18}Br_6$. <i>Journal of the American Chemical Society</i> , 2020, 142, 12921-12924.	6.6	71
36	Molecular structure elucidation with charge-state control. <i>Science</i> , 2019, 365, 142-145.	6.0	62

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37	Tetracene Formation by On-Surface Reduction. ACS Nano, 2016, 10, 4538-4542.	7.3	60
38	Investigating atomic contrast in atomic force microscopy and Kelvin probe force microscopy on ionic systems using functionalized tips. Physical Review B, 2014, 90, .	1.1	59
39	Image correction for atomic force microscopy images with functionalized tips. Physical Review B, 2014, 89, .	1.1	57
40	Probe-based measurement of lateral single-electron transfer between individual molecules. Nature Communications, 2015, 6, 8353.	5.8	56
41	Revisiting Kekulene: Synthesis and Single-Molecule Imaging. Journal of the American Chemical Society, 2019, 141, 15488-15493.	6.6	54
42	Exploring a Route to Cyclic Acenes by On-Surface Synthesis. Angewandte Chemie - International Edition, 2019, 58, 9038-9042.	7.2	52
43	Measuring the short-range force field above a single molecule with atomic resolution. Applied Physics Letters, 2011, 99, .	1.5	51
44	Manipulation of the Charge State of Single Au Atoms on Insulating Multilayer Films. Physical Review Letters, 2015, 114, 036801.	2.9	48
45	Single-molecule chemistry and physics explored by low-temperature scanning probe microscopy. Chemical Communications, 2011, 47, 9011.	2.2	46
46	Force and conductance during contact formation to a C ₆₀ molecule. New Journal of Physics, 2012, 14, 073032.	1.2	46
47	Elucidating the Geometric Substitution of Porphyrins by Spectroscopic Analysis and Atomic Force Microscopy Molecular Imaging. Energy & Fuels, 2019, 33, 6088-6097.	2.5	45
48	Lander on Cu(2 1 1) - selective adsorption and surface restructuring by a molecular wire. Chemical Physics Letters, 2003, 371, 750-756.	1.2	44
49	Recording the intramolecular deformation of a 4-legs molecule during its STM manipulation on a Cu(211) surface. Chemical Physics Letters, 2005, 402, 180-185.	1.2	42
50	Studying an antiaromatic polycyclic hydrocarbon adsorbed on different surfaces. Nature Communications, 2018, 9, 1198.	5.8	42
51	A simple model of molecular imaging with noncontact atomic force microscopy. New Journal of Physics, 2012, 14, 083023.	1.2	41
52	••-Diradical Aromatic Soot Precursors in Flames. Journal of the American Chemical Society, 2021, 143, 12212-12219.	6.6	41
53	The Synthesis and STM/AFM Imaging of •Olympicene™ Benzo[<i>a</i>]pyrenes. Chemistry - A European Journal, 2015, 21, 2011-2018.	1.7	39
54	Synthesis of a Naphthodiazaborinine and Its Verification by Planarization with Atomic Force Microscopy. ACS Nano, 2016, 10, 5340-5345.	7.3	39

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55	Understanding the Effects of Sample Preparation on the Chemical Structures of Petroleum Imaged with Noncontact Atomic Force Microscopy. <i>Industrial & Engineering Chemistry Research</i> , 2018, 57, 15935-15941.	1.8	38
56	Selectivity in single-molecule reactions by tip-induced redox chemistry. <i>Science</i> , 2022, 377, 298-301.	6.0	36
57	Generation and Characterization of a <i>meta</i> -Aryne on Cu and NaCl Surfaces. <i>ACS Nano</i> , 2017, 11, 10768-10773.	7.3	31
58	Tip-induced passivation of dangling bonds on hydrogenated Si(100)-2 Å ⁻¹ . <i>Applied Physics Letters</i> , 2017, 111, .	1.5	31
59	Magnetologic devices fabricated by nanostencil lithography. <i>Nanotechnology</i> , 2010, 21, 325301.	1.3	30
60	Atomic Force Microscopy Identifying Fuel Pyrolysis Products and Directing the Synthesis of Analytical Standards. <i>Journal of the American Chemical Society</i> , 2018, 140, 8156-8161.	6.6	27
61	A Single-Molecule Chemical Reaction Studied by High-Resolution Atomic Force Microscopy and Scanning Tunneling Microscopy Induced Light Emission. <i>ACS Nano</i> , 2019, 13, 6947-6954.	7.3	27
62	Atomically resolved single-molecule triplet quenching. <i>Science</i> , 2021, 373, 452-456.	6.0	27
63	Direct Visualization of Individual Aromatic Compound Structures in Low Molecular Weight Marine Dissolved Organic Carbon. <i>Geophysical Research Letters</i> , 2018, 45, 5590-5598.	1.5	26
64	Organic monolayers with uniform domain orientation and reduced antiphase boundaries â€“ MBE of perylene on Au(110). <i>Organic Electronics</i> , 2002, 3, 1-7.	1.4	23
65	Identical Binding Energies and Work Functions for Distinct Adsorption Structures: Olympicenes on the Cu(111) Surface. <i>Journal of Physical Chemistry Letters</i> , 2016, 7, 1022-1027.	2.1	22
66	Exploring a Route to Cyclic Acenes by Onâ€“Surface Synthesis. <i>Angewandte Chemie</i> , 2019, 131, 9136-9140.	1.6	22
67	Nonbenzenoid High-Spin Polycyclic Hydrocarbons Generated by Atom Manipulation. <i>ACS Nano</i> , 2022, 16, 3264-3271.	7.3	22
68	Charge-State-Dependent Diffusion of Individual Gold Adatoms on Ionic Thin NaCl Films. <i>Physical Review Letters</i> , 2016, 117, 146102.	2.9	21
69	The Role of Methyl Groups in the Early Stage of Thermal Polymerization of Polycyclic Aromatic Hydrocarbons Revealed by Molecular Imaging. <i>Energy & Fuels</i> , 2021, 35, 2224-2233.	2.5	21
70	Local thickness determination of thin insulator films via localized states. <i>Applied Physics Letters</i> , 2014, 104, .	1.5	19
71	Intramolecular Coupling of Terminal Alkynes by Atom Manipulation. <i>Angewandte Chemie - International Edition</i> , 2020, 59, 22989-22993.	7.2	15
72	Effect of electron-phonon interaction on the formation of one-dimensional electronic states in coupled Cl vacancies. <i>Physical Review B</i> , 2015, 91, .	1.1	14

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73	Atomic and electronic structure of Si dangling bonds in quasi-free-standing monolayer graphene. Nano Research, 2018, 11, 864-873.	5.8	14
74	[19]Dendriphene: A 19-Å Ring Dendritic Nanographene. Chemistry - A European Journal, 2018, 24, 17697-17700.	1.7	14
75	Contacting a single molecular wire by STM manipulation. Applied Physics A: Materials Science and Processing, 2005, 80, 913-920.	1.1	13
76	Contacting self-ordered molecular wires by nanostencil lithography. Journal of Vacuum Science and Technology B: Nanotechnology and Microelectronics, 2010, 28, C4D34-C4D39.	0.6	12
77	Rasterkraftmikroskopie für die molekulare Strukturaufklärung. Angewandte Chemie, 2018, 130, 3950-3972.	1.6	12
78	Imaging Titanium's Organic Haze at Atomic Scale. Astrophysical Journal Letters, 2021, 908, L13.	3.0	11
79	Interaction of a long molecular wire with a nanostructured surface: Violet Landers on Cu(211). Chemical Physics Letters, 2006, 428, 331-337.	1.2	9
80	Scanning Probe Microscopy of Atoms and Molecules on Insulating Films: From Imaging to Molecular Manipulation. Chimia, 2012, 66, 10-15.	0.3	9
81	Probing Molecular Excited States by Atomic Force Microscopy. Physical Review Letters, 2021, 126, 176801.	2.9	9
82	An on-surface Diels-Alder reaction. Angewandte Chemie - International Edition, 2021, 60, 26346-26350.	7.2	9
83	Local tunneling decay length and Kelvin probe force spectroscopy. Physical Review B, 2015, 92, .	1.1	8
84	Damping by sequentially tunneling electrons. Surface Science, 2018, 678, 112-117.	0.8	8
85	Conformations and controlled manipulation of a long molecular wire on Cu(111). Surface Science, 2005, 585, 38-46.	0.8	7
86	Controlled Fragmentation of Single Molecules with Atomic Force Microscopy by Employing Doubly Charged States. Physical Review Letters, 2018, 121, 226101.	2.9	7
87	A variable-temperature nanostencil compatible with a low-temperature scanning tunneling microscope/atomic force microscope. Review of Scientific Instruments, 2014, 85, 023706.	0.6	6
88	Force induced and electron stimulated STM manipulations: routes to artificial nanostructures as well as to molecular contacts, engines and switches. Journal of Physics: Conference Series, 2005, 19, 175-181.	0.3	5
89	Toggling the Local Electric Field with an Embedded Adatom Switch. Nano Letters, 2015, 15, 5564-5568.	4.5	5
90	Molecular Aggregation within Self-Ordered Monolayers. ChemPhysChem, 2007, 8, 245-249.	1.0	4

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91	Interactions between two C ₆₀ molecules measured by scanning probe microscopies. Nanotechnology, 2015, 26, 445703.	1.3	4
92	Visualization and identification of single meteoritic organic molecules by atomic force microscopy. Meteoritics and Planetary Science, 2022, 57, 644-656.	0.7	4
93	Addressing Long-Standing Chemical Challenges by AFM with Functionalized Tips. Advances in Atom and Single Molecule Machines, 2018, , 209-227.	0.0	2
94	An on-surface Diels-Alder reaction. Angewandte Chemie, 2021, 133, 26550.	1.6	2
95	Freestanding single-crystalline magnetic structures fabricated by ion bombardment. Applied Physics Letters, 2015, 106, 032410.	1.5	1
96	Of limited length. Nature Physics, 2019, 15, 1102-1102.	6.5	0
97	Intramolecular Coupling of Terminal Alkynes by Atom Manipulation. Angewandte Chemie, 2020, 132, 23189-23193.	1.6	0
98	3 + 3 makes the ring. , 0, , .		0