Robert Carpick

List of Publications by Year
in descending order

178 papers	14,369 citations	22146 59 h-index	20358 116 g-index
182 all docs	182 docs citations	182 times ranked	10479 citing authors

#	Article	IF	Citations
1	Frictional Characteristics of Atomically Thin Sheets. Science, 2010, 328, 76-80.	12.6	1,504
2	Scratching the Surface:â€‰ Fundamental Investigations of Tribology with Atomic Force Microscopy. Chemical Reviews, 1997, 97, 1163-1194.	47.7	1,013
3	Calibration of frictional forces in atomic force microscopy. Review of Scientific Instruments, 1996, 67, 3298-3306.	1.3	542
4	A General Equation for Fitting Contact Area and Friction vs Load Measurements. Journal of Colloid and Interface Science, 1999, 211, 395-400.	9.4	439
5	Mechanisms of antiwear tribofilm growth revealed in situ by single-asperity sliding contacts. Science, 2015, 348, 102-106.	12.6	411
6	Lateral stiffness: A new nanomechanical measurement for the determination of shear strengths with friction force microscopy. Applied Physics Letters, 1997, 70, 1548-1550.	3.3	391
7	The evolving quality of frictional contact with graphene. Nature, 2016, 539, 541-545.	27.8	389
8	Recent advances in single-asperity nanotribology. Journal Physics D: Applied Physics, 2008, 41, 123001.	2.8	388
9	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
10	Variation of the Interfacial Shear Strength and Adhesion of a Nanometer-Sized Contact. Langmuir, 1996, 12, 3334-3340.	3.5	281
11	Nanoscale wear as a stress-assisted chemical reaction. Nature Nanotechnology, 2013, 8, 108-112.	31.5	279
12	Frictional ageing from interfacial bonding and the origins of rate and state friction. Nature, 2011, 480, 233-236.	27.8	236
13	Structure-property relationships from universal signatures of plasticity in disordered solids. Science, 2017, 358, 1033-1037.	12.6	218
14	Ultralow nanoscale wear through atom-by-atom attrition in silicon-containing diamond-like carbon. Nature Nanotechnology, 2010, 5, 181-185.	31.5	212
15	Origin of Ultralow Friction and Wear in Ultrananocrystalline Diamond. Physical Review Letters, 2008, 100, 235502.	7.8	211
16	Substrate effect on thicknessâ€dependent friction on graphene. Physica Status Solidi (B): Basic Research, 2010, 247, 2909-2914.	1.5	206
17	Monolayer Single-Crystal 1Tâ€²-MoTe₂ Grown by Chemical Vapor Deposition Exhibits Weak Antilocalization Effect. Nano Letters, 2016, 16, 4297-4304.	9.1	205
18	Accounting for the JKRâ€“DMT transition in adhesion and friction measurements with atomic force microscopy. Journal of Adhesion Science and Technology, 2005, 19, 291-311.	2.6	188

#	ARTICLE	IF	CITATIONS
19	Atomic Force Microscopy Study of an Ideally Hard Contact: The Diamond(111)/Tungsten Carbide Interface. Physical Review Letters, 1998, 81, 1877-1880.	7.8	187
20	Polydiacetylene films: a review of recent investigations into chromogenic transitions and nanomechanical properties. Journal of Physics Condensed Matter, 2004, 16, R679-R697.	1.8	187
21	Influence of surface passivation on the friction and wear behavior of ultrananocrystalline diamond and tetrahedral amorphous carbon thin films. Physical Review B, 2012, 85, .	3.2	184
22	Lateral force calibration in atomic force microscopy: A new lateral force calibration method and general guidelines for optimization. Review of Scientific Instruments, 2006, 77, 053701.	1.3	178
23	Speed Dependence of Atomic Stick-Slip Friction in Optimally Matched Experiments and Molecular Dynamics Simulations. Physical Review Letters, 2011, 106, 126101.	7.8	176
24	Fluorination of Graphene Enhances Friction Due to Increased Corrugation. Nano Letters, 2014, 14, 5212-5217.	9.1	142
25	Frictional Behavior of Atomically Thin Sheets: Hexagonal-Shaped Graphene Islands Grown on Copper by Chemical Vapor Deposition. ACS Nano, 2014, 8, 5010-5021.	14.6	136
26	Method for Characterizing Nanoscale Wear of Atomic Force Microscope Tips. ACS Nano, 2010, 4, 3763-3772.	14.6	135
27	Toward the Ultimate Tribological Interface: Surface Chemistry and Nanotribology of Ultrananocrystalline Diamond. Advanced Materials, 2005, 17, 1039-1045.	21.0	131
28	Piezoelectric aluminum nitride nanoelectromechanical actuators. Applied Physics Letters, 2009, 95, .	3.3	128
29	Nanoscale Friction Varied by Isotopic Shifting of Surface Vibrational Frequencies. Science, 2007, 318, 780-783.	12.6	125
30	Atomic-Scale Friction on Diamond:Â A Comparison of Different Sliding Directions on (001) and (111) Surfaces Using MD and AFM. Langmuir, 2007, 23, 5394-5405.	3.5	125
31	Predictions and Observations of Multiple Slip Modes in Atomic-Scale Friction. Physical Review Letters, 2006, 97, 136106.	7.8	123
32	Ultrananocrystalline and Nanocrystalline Diamond Thin Films for MEMS/NEMS Applications. MRS Bulletin, 2010, 35, 281-288.	3.5	121
33	Surface composition, bonding, and morphology in the nucleation and growth of ultra-thin, high quality nanocrystalline diamond films. Diamond and Related Materials, 2007, 16, 718-724.	3.9	115
34	Origin of Nanoscale Friction Contrast between Supported Graphene, MoS₂, and a Graphene/MoS₂ Heterostructure. Nano Letters, 2019, 19, 5496-5505.	9.1	115
35	The Effect of Atomic-Scale Roughness on the Adhesion of Nanoscale Asperities: A Combined Simulation and Experimental Investigation. Tribology Letters, 2013, 50, 81-93.	2.6	110
36	On the Application of Transition State Theory to Atomic-Scale Wear. Tribology Letters, 2010, 39, 257-271.	2.6	109

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37	Surface chemistry and bonding configuration of ultrananocrystalline diamond surfaces and their effects on nanotribological properties. Physical Review B, 2007, 76, .	3.2	104
38	Diamond coatings for micro end mills: Enabling the dry machining of aluminum at the micro-scale. Diamond and Related Materials, 2008, 17, 223-233.	3.9	103
39	Thermal stability and rehybridization of carbon bonding in tetrahedral amorphous carbon. Journal of Applied Physics, 2010, 107, .	2.5	91
40	Wear, Plasticity, and Rehybridization in Tetrahedral Amorphous Carbon. Tribology Letters, 2014, 53, 119-126.	2.6	89
41	Enhanced nucleation, smoothness and conformality of ultrananocrystalline diamond (UNCD) ultrathin films via tungsten interlayers. Chemical Physics Letters, 2006, 430, 345-350.	2.6	85
42	Preventing Nanoscale Wear of Atomic Force Microscopy Tips Through the Use of Monolithic Ultrananocrystalline Diamond Probes. Small, 2010, 6, 1140-1149.	10.0	85
43	Nanotribological Properties of Alkanephosphonic Acid Self-Assembled Monolayers on Aluminum Oxide:Â Effects of Fluorination and Substrate Crystallinity. Langmuir, 2006, 22, 3988-3998.	3.5	83
44	Nanotribology of carbon-based materials. Nano Today, 2007, 2, 12-21.	11.9	83
45	PHYSICS: Controlling Friction. Science, 2006, 313, 184-185.	12.6	81
46	Large-area synthesis of high-quality monolayer 1Tâ€™-WTe ₂ flakes. 2D Materials, 2017, 4, 021008.	4.4	81
47	A variable temperature ultrahigh vacuum atomic force microscope. Review of Scientific Instruments, 1995, 66, 5266-5271.	1.3	78
48	High Molecular Orientation in Mono- and Trilayer Polydiacetylene Films Imaged by Atomic Force Microscopy. Journal of Colloid and Interface Science, 2000, 229, 490-496.	9.4	78
49	Mechanical stiffness and dissipation in ultrananocrystalline diamond microresonators. Physical Review B, 2009, 79, .	3.2	78
50	Dynamics of Atomic Stick-Slip Friction Examined with Atomic Force Microscopy and Atomistic Simulations at Overlapping Speeds. Physical Review Letters, 2015, 114, 146102.	7.8	78
51	Nano-rheology of hydrogels using direct drive force modulation atomic force microscopy. Soft Matter, 2015, 11, 8165-8178.	2.7	78
52	Are Diamonds a MEMS' Best Friend?. IEEE Microwave Magazine, 2007, 8, 61-75.	0.8	77
53	Nanotribology of Octadecyltrichlorosilane Monolayers and Silicon:â€‰ Self-Mated versus Unmated Interfaces and Local Packing Density Effects. Langmuir, 2007, 23, 9242-9252.	3.5	76
54	Mechanical Instabilities of Individual Multiwalled Carbon Nanotubes under Cyclic Axial Compression. Nano Letters, 2007, 7, 1149-1154.	9.1	76

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55	Complete characterization by Raman spectroscopy of the structural properties of thin hydrogenated diamond-like carbon films exposed to rapid thermal annealing. Journal of Applied Physics, 2014, 116, .	2.5	71
56	Environmental dependence of atomic-scale friction at graphite surface steps. Physical Review B, 2013, 88, .	3.2	69
57	Wear-Resistant Diamond Nanoprobe Tips with Integrated Silicon Heater for Tip-Based Nanomanufacturing. ACS Nano, 2010, 4, 3338-3344.	14.6	68
58	Accounting for Nanometer-Thick Adventitious Carbon Contamination in X-ray Absorption Spectra of Carbon-Based Materials. Analytical Chemistry, 2014, 86, 12258-12265.	6.5	68
59	Cantilever tilt compensation for variable-load atomic force microscopy. Review of Scientific Instruments, 2005, 76, 053706.	1.3	60
60	Adhesion of nanoscale asperities with power-law profiles. Journal of the Mechanics and Physics of Solids, 2013, 61, 597-610.	4.8	60
61	Thermally induced evolution of hydrogenated amorphous carbon. Applied Physics Letters, 2013, 103, .	3.3	60
62	Load-Dependent Friction Hysteresis on Graphene. ACS Nano, 2016, 10, 5161-5168.	14.6	56
63	Nanoscale Adhesive Properties of Graphene: The Effect of Sliding History. Advanced Materials Interfaces, 2014, 1, 1300053.	3.7	55
64	Local Nanoscale Heating Modulates Single-Asperity Friction. Nano Letters, 2010, 10, 4640-4645.	9.1	54
65	Controlling Nanoscale Friction through the Competition between Capillary Adsorption and Thermally Activated Sliding. ACS Nano, 2012, 6, 4305-4313.	14.6	52
66	Atomic-Scale Wear of Amorphous Hydrogenated Carbon during Intermittent Contact: A Combined Study Using Experiment, Simulation, and Theory. ACS Nano, 2014, 8, 7027-7040.	14.6	51
67	Boron-doped ultrananocrystalline diamond synthesized with an H-rich/Ar-lean gas system. Carbon, 2015, 84, 103-117.	10.3	49
68	Load and Time Dependence of Interfacial Chemical Bond-Induced Friction at the Nanoscale. Physical Review Letters, 2017, 118, 076103.	7.8	48
69	Correlation Between Probe Shape and Atomic Friction Peaks at Graphite Step Edges. Tribology Letters, 2013, 50, 49-57.	2.6	47
70	Mechanics of Interaction and Atomic-Scale Wear of Amplitude Modulation Atomic Force Microscopy Probes. ACS Nano, 2013, 7, 3221-3235.	14.6	45
71	Effect of silicon and oxygen dopants on the stability of hydrogenated amorphous carbon under harsh environmental conditions. Carbon, 2018, 130, 127-136.	10.3	45
72	Material Anisotropy Revealed by Phase Contrast in Intermittent Contact Atomic Force Microscopy. Physical Review Letters, 2002, 88, 226103.	7.8	44

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73	Scalable Production of Sensor Arrays Based on High-Mobility Hybrid Graphene Field Effect Transistors. ACS Applied Materials & Interfaces, 2016, 8, 27546-27552.	8.0	44
74	Origin of Friction in Superlubric Graphite Contacts. Physical Review Letters, 2020, 125, 126102.	7.8	44
75	Nanotribology of CoCrâ€"UHMWPE TJR prosthesis using atomic force microscopy. Wear, 2002, 253, 1145-1155.	3.1	43
76	In situ wear studies of surface micromachined interfaces subject to controlled loading. Wear, 2006, 260, 580-593.	3.1	43
77	Angle-resolved environmental X-ray photoelectron spectroscopy: A new laboratory setup for photoemission studies at pressures up to 0.4 Torr. Review of Scientific Instruments, 2012, 83, 093112.	1.3	42
78	Synthesis and Physical Properties of Phase-Engineered Transition Metal Dichalcogenide Monolayer Heterostructures. ACS Nano, 2017, 11, 8619-8627.	14.6	42
79	The contact sport of rough surfaces. Science, 2018, 359, 38-38.	12.6	42
80	Influence of chemical bonding on the variability of diamond-like carbon nanoscale adhesion. Carbon, 2018, 128, 267-276.	10.3	42
81	Synthesis and characterization of smooth ultrananocrystalline diamond films via low pressure bias-enhanced nucleation and growth. Applied Physics Letters, 2008, 92, .	3.3	41
82	Friction Anisotropy of MoS₂: Effect of Tipâ€"Sample Contact Quality. Journal of Physical Chemistry Letters, 2020, 11, 6900-6906.	4.6	40
83	Tribochemical Wear of Diamond-Like Carbon-Coated Atomic Force Microscope Tips. ACS Applied Materials & Interfaces, 2017, 9, 35341-35348.	8.0	39
84	The role of contaminants in the variation of adhesion, friction, and electrical conduction properties of carbide-coated scanning probe tips and Pt(111) in ultrahigh vacuum. Journal of Applied Physics, 2004, 95, 7694-7700.	2.5	38
85	Wearâ€Resistant Nanoscale Silicon Carbide Tips for Scanning Probe Applications. Advanced Functional Materials, 2012, 22, 1639-1645.	14.9	38
86	Simulated Adhesion between Realistic Hydrocarbon Materials: Effects of Composition, Roughness, and Contact Point. Langmuir, 2014, 30, 2028-2037.	3.5	37
87	Nanoscale Friction Behavior of Transition-Metal Dichalcogenides: Role of the Chalcogenide. ACS Nano, 2020, 14, 16013-16021.	14.6	36
88	Insights into tribology from in situ nanoscale experiments. MRS Bulletin, 2019, 44, 478-486.	3.5	34
89	Negative stiffness and enhanced damping of individual multiwalled carbon nanotubes. Physical Review B, 2008, 77, .	3.2	33
90	Multibond Model of Single-Asperity Tribochemical Wear at the Nanoscale. ACS Applied Materials & Interfaces, 2017, 9, 35333-35340.	8.0	33

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91	Nanoscale Generation of Robust Solid Films from Liquid-Dispersed Nanoparticles via in Situ Atomic Force Microscopy: Growth Kinetics and Nanomechanical Properties. ACS Applied Materials & Interfaces, 2018, 10, 40335-40347.	8.0	32
92	Phase imaging and the lever-sample tilt angle in dynamic atomic force microscopy. Applied Physics Letters, 2004, 85, 4738-4740.	3.3	31
93	Atomistic Factors Governing Adhesion between Diamond, Amorphous Carbon and Model Diamond Nanocomposite Surfaces. Journal of Adhesion Science and Technology, 2010, 24, 2471-2498.	2.6	31
94	Rate and State Friction Relation for Nanoscale Contacts: Thermally Activated Prandtl-Tomlinson Model with Chemical Aging. Physical Review Letters, 2018, 120, 186101.	7.8	30
95	An In Situ Method for Simultaneous Friction Measurements and Imaging of Interfacial Tribochemical Film Growth in Lubricated Contacts. Tribology Letters, 2018, 66, 1.	2.6	30
96	Experiments and simulations of the humidity dependence of friction between nanoasperities and graphite: The role of interfacial contact quality. Physical Review Materials, 2018, 2, .	2.4	30
97	Practical Method to Limit Tipâ€"Sample Contact Stress and Prevent Wear in Amplitude Modulation Atomic Force Microscopy. ACS Nano, 2013, 7, 9836-9850.	14.6	29
98	Nanoscale in situ study of ZDDP tribofilm growth at aluminum-based interfaces using atomic force microscopy. Tribology International, 2020, 143, 106075.	5.9	29
99	Visualization of nanoscale wear mechanisms in ultrananocrystalline diamond by in-situ TEM tribometry. Carbon, 2019, 154, 132-139.	10.3	28
100	Near-Edge X-ray Absorption Fine Structure Imaging of Spherical and Flat Counterfaces of Ultrananocrystalline Diamond Tribological Contacts: A Correlation of Surface Chemistry and Friction. Tribology Letters, 2011, 44, 99-106.	2.6	27
101	Nanoscale Roughness of Natural Fault Surfaces Controlled by Scaleâ€Dependent Yield Strength. Geophysical Research Letters, 2017, 44, 9299-9307.	4.0	27
102	Characterizing nanoscale scanning probes using electron microscopy: A novel fixture and a practical guide. Review of Scientific Instruments, 2016, 87, 013703.	1.3	26
103	Nanomechanics of pH-Responsive, Drug-Loaded, Bilayered Polymer Grafts. ACS Applied Materials & Interfaces, 2017, 9, 12936-12948.	8.0	25
104	A Technique for the Experimental Determination of the Length and Strength of Adhesive Interactions Between Effectively Rigid Materials. Tribology Letters, 2015, 59, 1.	2.6	24
105	Solid state magnetic resonance investigation of the thermally-induced structural evolution of silicon oxide-doped hydrogenated amorphous carbon. Carbon, 2016, 105, 163-175.	10.3	24
106	Quantitative Evaluation of the Carbon Hybridization State by Near Edge X-ray Absorption Fine Structure Spectroscopy. Analytical Chemistry, 2016, 88, 2817-2824.	6.5	24
107	Atomic Friction Modulation on the Reconstructed Au(111) Surface. Tribology Letters, 2011, 43, 369-378.	2.6	22
108	Tunable, Sourceâ€Controlled Formation of Platinum Silicides and Nanogaps from Thin Precursor Films. Advanced Materials Interfaces, 2014, 1, 1300120.	3.7	22

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109	Covalent Bonding and Atomic-Level Plasticity Increase Adhesion in Siliconâ€"Diamond Nanocontacts. ACS Applied Materials & Interfaces, 2019, 11, 40734-40748.	8.0	22
110	Unraveling the Friction Evolution Mechanism of Diamondâ€Like Carbon Film during Nanoscale Runningâ€In Process toward Superlubricity. Small, 2021, 17, e2005607.	10.0	21
111	Vibrational Properties and Specific Heat of Ultrananocrystalline Diamond: Molecular Dynamics Simulations. Journal of Physical Chemistry C, 2011, 115, 21691-21699.	3.1	20
112	Nanocrystalline diamond AFM tips for chemical force spectroscopy: fabrication and photochemical functionalization. Journal of Materials Chemistry, 2012, 22, 12682.	6.7	20
113	Novel Metal Silicide Thin Films by Design via Controlled Solid-State Diffusion. Chemistry of Materials, 2015, 27, 4247-4253.	6.7	19
114	Thermally Induced Structural Evolution of Silicon- and Oxygen-Containing Hydrogenated Amorphous Carbon: A Combined Spectroscopic and Molecular Dynamics Simulation Investigation. Langmuir, 2018, 34, 2989-2995.	3.5	19
115	Sticky but Slick: Reducing Friction Using Associative and Nonassociative Polymer Lubricant Additives. ACS Applied Polymer Materials, 2020, 2, 4062-4070.	4.4	19
116	Mechanisms of Contact, Adhesion, and Failure of Metallic Nanoasperities in the Presence of Adsorbates: Toward Conductive Contact Design. ACS Nano, 2017, 11, 490-500.	14.6	18
117	Nanotribological Printing: A Nanoscale Additive Manufacturing Method. Nano Letters, 2018, 18, 6756-6763.	9.1	18
118	Measurement of the Length and Strength of Adhesive Interactions in a Nanoscale Siliconâ€"Diamond Interface. Advanced Materials Interfaces, 2015, 2, 1400547.	3.7	17
119	Correcting for Tip Geometry Effects in Molecular Simulations of Single-Asperity Contact. Tribology Letters, 2017, 65, 1.	2.6	17
120	Small amplitude reciprocating wear performance of diamond-like carbon films: dependence of film composition and counterface material. Tribology Letters, 2007, 27, 79-88.	2.6	16
121	Tribochemistry and material transfer for the ultrananocrystalline diamond-silicon nitride interface revealed by x-ray photoelectron emission spectromicroscopy. Journal of Vacuum Science & Technology B, 2007, 25, 1700.	1.3	15
122	Constraints on the Physical Mechanism of Frictional Aging From Nanoindentation. Geophysical Research Letters, 2018, 45, 13,306.	4.0	15
123	Slippery when dry. Science, 2015, 348, 1087-1088.	12.6	14
124	Dynamic shear force microscopy of viscosity in nanometer-confined hexadecane layers. Journal of Physics Condensed Matter, 2016, 28, 134004.	1.8	14
125	Stickâ€"Slip Instabilities for Interfacial Chemical Bond-Induced Friction at the Nanoscale. Journal of Physical Chemistry B, 2018, 122, 991-999.	2.6	14
126	Sliding History-Dependent Adhesion of Nanoscale Silicon Contacts Revealed by in Situ Transmission Electron Microscopy. Langmuir, 2019, 35, 15628-15638.	3.5	14

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127	The strong effect on MEMS switch reliability of film deposition conditions and electrode geometry. Microelectronics Reliability, 2019, 98, 131-143.	1.7	14
128	Stress-dependent adhesion and sliding-induced nanoscale wear of diamond-like carbon studied using in situ TEM nanoindentation. Carbon, 2022, 193, 230-241.	10.3	14
129	Ultrananocrystalline diamond tip integrated onto a heated atomic force microscope cantilever. Nanotechnology, 2012, 23, 495302.	2.6	13
130	Direct torsional actuation of microcantilevers using magnetic excitation. Applied Physics Letters, 2014, 105, .	3.3	13
131	<i>In situ</i>oxygen plasma cleaning of microswitch surfacesâ€”comparison of Ti and graphite electrodes. Journal of Micromechanics and Microengineering, 2016, 26, 115020.	2.6	13
132	AFM at the Macroscale: Methods to Fabricate and Calibrate Probes for Millinewton Force Measurements. Tribology Letters, 2019, 67, 1.	2.6	13
133	Silicon Oxideâ€Rich Diamondâ€Like Carbon: A Conformal, Ultrasmooth Thin Film Material with High Thermoâ€Oxidative Stability. Advanced Materials Interfaces, 2019, 6, 1801416.	3.7	13
134	Cooperativity Between Zirconium Dioxide Nanoparticles and Extreme Pressure Additives in Forming Protective Tribofilms: Toward Enabling Low Viscosity Lubricants. Tribology Letters, 2020, 68, 1.	2.6	13
135	Scanning Probe Studies of Nanoscale Adhesion Between Solids in the Presence of Liquids and Monolayer Films. , 2007, , 951-980.		13
136	Next-Generation Nanoelectromechanical Switch Contact Materials: A Low-Power Mechanical Alternative to Fully Electronic Field-Effect Transistors. IEEE Nanotechnology Magazine, 2015, 9, 18-24.	1.3	12
137	Memory Distance for Interfacial Chemical Bond-Induced Friction at the Nanoscale. ACS Nano, 2019, 13, 7425-7434.	14.6	12
138	Linear Aging Behavior at Short Timescales in Nanoscale Contacts. Physical Review Letters, 2020, 124, 026801.	7.8	12
139	Investigation of the Mechanics, Composition, and Functional Behavior of Thick Tribofilms Formed from Silicon- and Oxygen-Containing Hydrogenated Amorphous Carbon. Tribology Letters, 2019, 67, 1.	2.6	11
140	Vibrations of the â€œbeetleâ€•scanning probe microscope: Identification of a new mode, generalized analysis, and characterization methodology. Review of Scientific Instruments, 2006, 77, 033706.	1.3	10
141	Adhesion Mechanics between Nanoscale Silicon Oxide Tips and Few-Layer Graphene. Tribology Letters, 2017, 65, 1.	2.6	10
142	Abrasion of Steel by Ceramic Coatings: Comparison of RF-DLC to Sputtered B4C. Tribology Letters, 2002, 12, 43-50.	2.6	9
143	In-plane contributions to phase contrast in intermittent contact atomic force microscopy. Ultramicroscopy, 2003, 97, 145-150.	1.9	9
144	Advances in Manufacturing of Molded Tips for Scanning Probe Microscopy. Journal of Microelectromechanical Systems, 2012, 21, 431-442.	2.5	9

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145	A Numerical Contact Model Based on Real Surface Topography. Tribology Letters, 2013, 50, 331-347.	2.6	9
146	Heterogeneity in the Small-Scale Deformation Behavior of Disordered Nanoparticle Packings. Nano Letters, 2016, 16, 2455-2462.	9.1	9
147	Ultrahigh strength and shear-assisted separation of sliding nanocontacts studied in situ. Nature Communications, 2022, 13, 2551.	12.8	9
148	Measurements of In-Plane Material Properties with Scanning Probe Microscopy. MRS Bulletin, 2004, 29, 472-477.	3.5	8
149	Characterization of Microscale Wear in a Polysilicon-Based MEMS Device Using AFM and PEEMâ€“NEXAFS Spectromicroscopy. Tribology Letters, 2009, 36, 233-238.	2.6	8
150	Thermomechanical stability of ultrananocrystalline diamond. Journal of Applied Physics, 2012, 111, 054913.	2.5	7
151	How Hydrogen and Oxygen Vapor Affect the Tribochemistry of Silicon- and Oxygen-Containing Hydrogenated Amorphous Carbon under Low-Friction Conditions: A Study Combining X-ray Absorption Spectromicroscopy and Data Science Methods. ACS Applied Materials & Interfaces, 2021, 13, 12610-12621.	8.0	7
152	Molecular Dynamics Examination of Sliding History-Dependent Adhesion in Siâ€“Si Nanocontacts: Connecting Friction, Wear, Bond Formation, and Interfacial Adhesion. Tribology Letters, 2021, 69, 1.	2.6	7
153	Development and assessment of next-generation nanoelectromechanical switch contact materials. , 2014, , .		6
154	Valence Band Control of Metal Silicide Films via Stoichiometry. Journal of Physical Chemistry Letters, 2016, 7, 2573-2578.	4.6	6
155	Mechanochemical Effects of Adsorbates at Nanoelectromechanical Switch Contacts. ACS Applied Materials & Interfaces, 2019, 11, 39238-39247.	8.0	6
156	Nanoscale Wear as a Stress-Assisted Chemical Reaction: An in-situ TEM Study. Microscopy and Microanalysis, 2014, 20, 1542-1543.	0.4	5
157	Novel materials solutions and simulations for nanoelectromechanical switches. , 2015, , .		5
158	On the integration of ultrananocrystalline diamond (UNCD) with CMOS chip. AIP Advances, 2017, 7, 035121.	1.3	5
159	Disordered Nanoparticle Packings under Local Stress Exhibit Avalanche-Like, Environmentally Dependent Plastic Deformation. Nano Letters, 2018, 18, 5418-5425.	9.1	5
160	Influence of Chemical Bonding on the Variability of Diamond-Like Carbon Nanoscale Adhesion: An In-Situ TEM/Nanoindentation and Molecular Dynamics Study. Microscopy and Microanalysis, 2018, 24, 1822-1823.	0.4	5
161	Bifurcation of nanoscale thermolubric friction behavior for sliding on <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>Mo</mml:mi><mml:msub><mml:mi mathvariant="normal">S</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math>. Physical Review Materials, 2021, 5, .	2.4	5
162	Hollow Atomic Force Microscopy Cantilevers with Nanoscale Wall Thicknesses. Small, 2021, 17, e2102979.	10.0	5

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163	Effectiveness of oxygen plasma versus UHV bakeout in cleaning MEMS switch surfaces. , 2015, , .		4
164	Nanoscale Run-In of Silicon Oxide-Doped Hydrogenated Amorphous Carbon: Dependence of Interfacial Shear Strength on Sliding Length and Humidity. Tribology Letters, 2020, 68, 1.	2.6	4
165	Quantitative determination of the interaction potential between two surfaces using frequency-modulated atomic force microscopy. Beilstein Journal of Nanotechnology, 2020, 11, 729-739.	2.8	4
166	Inhibition of Micro-pitting by Tribofilm-Forming ZrO2 Nanocrystal Lubricant Additives: A Micro-pitting Rig and Transmission Electron Microscope Study. Tribology Letters, 2022, 70, 1.	2.6	4
167	Assessment of the mechanical integrity of silicon and diamond-like-carbon coated silicon atomic force microscope probes. , 2010, , .		3
168	Temperature Dependence of Nanoscale Friction Investigated with Thermal AFM Probes. Materials Research Society Symposia Proceedings, 2009, 1226, 50201.	0.1	2
169	Multiscale Roughness of MEMS Surfaces. , 2004, , 133.		1
170	Chromic Transitions and Nanomechanical Properties of Poly(diacetylene) Molecular Films. ACS Symposium Series, 2004, , 82-95.	0.5	1
171	The Vibrational Properties of Ultrananocrystalline Diamond Based on Molecular dynamics Simulations. Materials Research Society Symposia Proceedings, 2012, 1404, 7.	0.1	1
172	Let it slip. Nature Physics, 2014, 10, 410-411.	16.7	1
173	Frictional Properties of Hydrogenated and Deuterated Alkanethiols. Microscopy and Microanalysis, 2002, 8, 768-769.	0.4	0
174	Confinement Effects in Nanoscale Anodic Alumina Structures on Silicon. Materials Research Society Symposia Proceedings, 2004, 854, U11.5.1.	0.1	0
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