

Robert Carpick

List of Publications by Citations

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179
papers

11,790
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55
h-index

106
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182
ext. papers

13,117
ext. citations

8.5
avg, IF

6.45
L-index

#	Paper	IF	Citations
179	Frictional characteristics of atomically thin sheets. <i>Science</i> , 2010 , 328, 76-80	33.3	1242
178	Scratching the Surface: Fundamental Investigations of Tribology with Atomic Force Microscopy. <i>Chemical Reviews</i> , 1997 , 97, 1163-1194	68.1	917
177	Calibration of frictional forces in atomic force microscopy. <i>Review of Scientific Instruments</i> , 1996 , 67, 3298-3306	1.7	486
176	A General Equation for Fitting Contact Area and Friction vs Load Measurements. <i>Journal of Colloid and Interface Science</i> , 1999 , 211, 395-400	9.3	396
175	Lateral stiffness: A new nanomechanical measurement for the determination of shear strengths with friction force microscopy. <i>Applied Physics Letters</i> , 1997 , 70, 1548-1550	3.4	348
174	Recent advances in single-asperity nanotribology. <i>Journal Physics D: Applied Physics</i> , 2008 , 41, 123001	3	333
173	Tribology. Mechanisms of antiwear tribofilm growth revealed in situ by single-asperity sliding contacts. <i>Science</i> , 2015 , 348, 102-6	33.3	306
172	The evolving quality of frictional contact with graphene. <i>Nature</i> , 2016 , 539, 541-545	50.4	278
171	Measurement of interfacial shear (friction) with an ultrahigh vacuum atomic force microscope. <i>Journal of Vacuum Science & Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena</i> , 1996 , 14, 1289		278
170	Variation of the Interfacial Shear Strength and Adhesion of a Nanometer-Sized Contact. <i>Langmuir</i> , 1996 , 12, 3334-3340	4	261
169	Nanoscale wear as a stress-assisted chemical reaction. <i>Nature Nanotechnology</i> , 2013 , 8, 108-12	28.7	226
168	Ultralow nanoscale wear through atom-by-atom attrition in silicon-containing diamond-like carbon. <i>Nature Nanotechnology</i> , 2010 , 5, 181-5	28.7	188
167	Origin of ultralow friction and wear in ultrananocrystalline diamond. <i>Physical Review Letters</i> , 2008 , 100, 235502	7.4	184
166	Frictional ageing from interfacial bonding and the origins of rate and state friction. <i>Nature</i> , 2011 , 480, 233-6	50.4	176
165	Atomic Force Microscopy Study of an Ideally Hard Contact: The Diamond(111)/Tungsten Carbide Interface. <i>Physical Review Letters</i> , 1998 , 81, 1877-1880	7.4	172
164	Monolayer Single-Crystal 1T'-MoTe2 Grown by Chemical Vapor Deposition Exhibits Weak Antilocalization Effect. <i>Nano Letters</i> , 2016 , 16, 4297-304	11.5	167
163	Accounting for the JKRD ² MT transition in adhesion and friction measurements with atomic force microscopy. <i>Journal of Adhesion Science and Technology</i> , 2005 , 19, 291-311	2	166

162	Substrate effect on thickness-dependent friction on graphene. <i>Physica Status Solidi (B): Basic Research</i> , 2010 , 247, 2909-2914	1.3	161
161	Lateral force calibration in atomic force microscopy: A new lateral force calibration method and general guidelines for optimization. <i>Review of Scientific Instruments</i> , 2006 , 77, 053701	1.7	157
160	Polydiacetylene films: a review of recent investigations into chromogenic transitions and nanomechanical properties. <i>Journal of Physics Condensed Matter</i> , 2004 , 16, R679-R697	1.8	156
159	Influence of surface passivation on the friction and wear behavior of ultrananocrystalline diamond and tetrahedral amorphous carbon thin films. <i>Physical Review B</i> , 2012 , 85,	3.3	153
158	Structure-property relationships from universal signatures of plasticity in disordered solids. <i>Science</i> , 2017 , 358, 1033-1037	33.3	144
157	Speed dependence of atomic stick-slip friction in optimally matched experiments and molecular dynamics simulations. <i>Physical Review Letters</i> , 2011 , 106, 126101	7.4	138
156	Toward the Ultimate Tribological Interface: Surface Chemistry and Nanotribology of Ultrananocrystalline Diamond. <i>Advanced Materials</i> , 2005 , 17, 1039-1045	24	120
155	Fluorination of graphene enhances friction due to increased corrugation. <i>Nano Letters</i> , 2014 , 14, 5212-7	11.5	118
154	Frictional behavior of atomically thin sheets: hexagonal-shaped graphene islands grown on copper by chemical vapor deposition. <i>ACS Nano</i> , 2014 , 8, 5010-21	16.7	112
153	Atomic-scale friction on diamond: a comparison of different sliding directions on (001) and (111) surfaces using MD and AFM. <i>Langmuir</i> , 2007 , 23, 5394-405	4	109
152	Method for characterizing nanoscale wear of atomic force microscope tips. <i>ACS Nano</i> , 2010 , 4, 3763-72	16.7	107
151	Ultrananocrystalline and Nanocrystalline Diamond Thin Films for MEMS/NEMS Applications. <i>MRS Bulletin</i> , 2010 , 35, 281-288	3.2	107
150	Piezoelectric aluminum nitride nanoelectromechanical actuators. <i>Applied Physics Letters</i> , 2009 , 95, 053106	10.4	103
149	Surface composition, bonding, and morphology in the nucleation and growth of ultra-thin, high quality nanocrystalline diamond films. <i>Diamond and Related Materials</i> , 2007 , 16, 718-724	3.5	101
148	Nanoscale friction varied by isotopic shifting of surface vibrational frequencies. <i>Science</i> , 2007 , 318, 780-3	33.3	100
147	Surface chemistry and bonding configuration of ultrananocrystalline diamond surfaces and their effects on nanotribological properties. <i>Physical Review B</i> , 2007 , 76,	3.3	98
146	On the Application of Transition State Theory to Atomic-Scale Wear. <i>Tribology Letters</i> , 2010 , 39, 257-271	12.8	90
145	Diamond coatings for micro end mills: Enabling the dry machining of aluminum at the micro-scale. <i>Diamond and Related Materials</i> , 2008 , 17, 223-233	3.5	90

144	Predictions and observations of multiple slip modes in atomic-scale friction. <i>Physical Review Letters</i> , 2006 , 97, 136106	7.4	88
143	The Effect of Atomic-Scale Roughness on the Adhesion of Nanoscale Asperities: A Combined Simulation and Experimental Investigation. <i>Tribology Letters</i> , 2013 , 50, 81-93	2.8	84
142	Nanotribological properties of alkanephosphonic acid self-assembled monolayers on aluminum oxide: effects of fluorination and substrate crystallinity. <i>Langmuir</i> , 2006 , 22, 3988-98	4	78
141	Enhanced nucleation, smoothness and conformality of ultrananocrystalline diamond (UNCD) ultrathin films via tungsten interlayers. <i>Chemical Physics Letters</i> , 2006 , 430, 345-350	2.5	78
140	Thermal stability and rehybridization of carbon bonding in tetrahedral amorphous carbon. <i>Journal of Applied Physics</i> , 2010 , 107, 033523	2.5	77
139	Preventing nanoscale wear of atomic force microscopy tips through the use of monolithic ultrananocrystalline diamond probes. <i>Small</i> , 2010 , 6, 1140-9	11	76
138	Nanotribology of carbon-based materials. <i>Nano Today</i> , 2007 , 2, 12-21	17.9	76
137	Wear, Plasticity, and Rehybridization in Tetrahedral Amorphous Carbon. <i>Tribology Letters</i> , 2014 , 53, 119-126	12.6	75
136	Nanotribology of octadecyltrichlorosilane monolayers and silicon: self-mated versus unmated interfaces and local packing density effects. <i>Langmuir</i> , 2007 , 23, 9242-52	4	73
135	High Molecular Orientation in Mono- and Trilayer Polydiacetylene Films Imaged by Atomic Force Microscopy. <i>Journal of Colloid and Interface Science</i> , 2000 , 229, 490-496	9.3	73
134	Physics. Controlling friction. <i>Science</i> , 2006 , 313, 184-5	33.3	72
133	Mechanical instabilities of individual multiwalled carbon nanotubes under cyclic axial compression. <i>Nano Letters</i> , 2007 , 7, 1149-54	11.5	67
132	Mechanical stiffness and dissipation in ultrananocrystalline diamond microresonators. <i>Physical Review B</i> , 2009 , 79,	3.3	66
131	Wear-resistant diamond nanoprobe tips with integrated silicon heater for tip-based nanomanufacturing. <i>ACS Nano</i> , 2010 , 4, 3338-44	16.7	65
130	Are Diamonds a MEMS' Best Friend?. <i>IEEE Microwave Magazine</i> , 2007 , 8, 61-75	1.2	64
129	Nano-rheology of hydrogels using direct drive force modulation atomic force microscopy. <i>Soft Matter</i> , 2015 , 11, 8165-78	3.6	61
128	Complete characterization by Raman spectroscopy of the structural properties of thin hydrogenated diamond-like carbon films exposed to rapid thermal annealing. <i>Journal of Applied Physics</i> , 2014 , 116, 123516	2.5	61
127	Environmental dependence of atomic-scale friction at graphite surface steps. <i>Physical Review B</i> , 2013 , 88,	3.3	58

126	Large-area synthesis of high-quality monolayer 1T'-WTe flakes. <i>2D Materials</i> , 2017 , 4,	5.9	56
125	Origin of Nanoscale Friction Contrast between Supported Graphene, MoS, and a Graphene/MoS Heterostructure. <i>Nano Letters</i> , 2019 , 19, 5496-5505	11.5	55
124	Cantilever tilt compensation for variable-load atomic force microscopy. <i>Review of Scientific Instruments</i> , 2005 , 76, 053706	1.7	55
123	Dynamics of atomic stick-slip friction examined with atomic force microscopy and atomistic simulations at overlapping speeds. <i>Physical Review Letters</i> , 2015 , 114, 146102	7.4	53
122	Accounting for nanometer-thick adventitious carbon contamination in X-ray absorption spectra of carbon-based materials. <i>Analytical Chemistry</i> , 2014 , 86, 12258-65	7.8	50
121	Thermally induced evolution of hydrogenated amorphous carbon. <i>Applied Physics Letters</i> , 2013 , 103, 161605	3.4	48
120	A variable temperature ultrahigh vacuum atomic force microscope. <i>Review of Scientific Instruments</i> , 1995 , 66, 5266-5271	1.7	48
119	Local nanoscale heating modulates single-asperity friction. <i>Nano Letters</i> , 2010 , 10, 4640-5	11.5	46
118	Load-Dependent Friction Hysteresis on Graphene. <i>ACS Nano</i> , 2016 , 10, 5161-8	16.7	46
117	Adhesion of nanoscale asperities with power-law profiles. <i>Journal of the Mechanics and Physics of Solids</i> , 2013 , 61, 597-610	5	45
116	Nanoscale Adhesive Properties of Graphene: The Effect of Sliding History. <i>Advanced Materials Interfaces</i> , 2014 , 1, 1300053	4.6	45
115	Atomic-scale wear of amorphous hydrogenated carbon during intermittent contact: a combined study using experiment, simulation, and theory. <i>ACS Nano</i> , 2014 , 8, 7027-40	16.7	42
114	Correlation Between Probe Shape and Atomic Friction Peaks at Graphite Step Edges. <i>Tribology Letters</i> , 2013 , 50, 49-57	2.8	42
113	Boron-doped ultrananocrystalline diamond synthesized with an H-rich/Ar-lean gas system. <i>Carbon</i> , 2015 , 84, 103-117	10.4	41
112	Controlling nanoscale friction through the competition between capillary adsorption and thermally activated sliding. <i>ACS Nano</i> , 2012 , 6, 4305-13	16.7	41
111	Angle-resolved environmental X-ray photoelectron spectroscopy: a new laboratory setup for photoemission studies at pressures up to 0.4 Torr. <i>Review of Scientific Instruments</i> , 2012 , 83, 093112	1.7	41
110	Nanotribology of CoCr ₂ NiTiMoWPE TJR prosthesis using atomic force microscopy. <i>Wear</i> , 2002 , 253, 1145-1155	1.55	39
109	Material anisotropy revealed by phase contrast in intermittent contact atomic force microscopy. <i>Physical Review Letters</i> , 2002 , 88, 226103	7.4	39

108	Synthesis and characterization of smooth ultrananocrystalline diamond films via low pressure bias-enhanced nucleation and growth. <i>Applied Physics Letters</i> , 2008 , 92, 133113	3.4	37
107	In situ wear studies of surface micromachined interfaces subject to controlled loading. <i>Wear</i> , 2006 , 260, 580-593	3.5	37
106	Load and Time Dependence of Interfacial Chemical Bond-Induced Friction at the Nanoscale. <i>Physical Review Letters</i> , 2017 , 118, 076103	7.4	36
105	Wear-Resistant Nanoscale Silicon Carbide Tips for Scanning Probe Applications. <i>Advanced Functional Materials</i> , 2012 , 22, 1639-1645	15.6	36
104	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. <i>Journal of Applied Physics</i> , 2004 , 95, 7694-7700	2.5	36
103	Mechanics of interaction and atomic-scale wear of amplitude modulation atomic force microscopy probes. <i>ACS Nano</i> , 2013 , 7, 3221-35	16.7	35
102	Synthesis and Physical Properties of Phase-Engineered Transition Metal Dichalcogenide Monolayer Heterostructures. <i>ACS Nano</i> , 2017 , 11, 8619-8627	16.7	34
101	Effect of silicon and oxygen dopants on the stability of hydrogenated amorphous carbon under harsh environmental conditions. <i>Carbon</i> , 2018 , 130, 127-136	10.4	33
100	Simulated adhesion between realistic hydrocarbon materials: effects of composition, roughness, and contact point. <i>Langmuir</i> , 2014 , 30, 2028-37	4	32
99	Scalable Production of Sensor Arrays Based on High-Mobility Hybrid Graphene Field Effect Transistors. <i>ACS Applied Materials & Interfaces</i> , 2016 , 8, 27546-27552	9.5	31
98	The contact sport of rough surfaces. <i>Science</i> , 2018 , 359, 38	33.3	30
97	Negative stiffness and enhanced damping of individual multiwalled carbon nanotubes. <i>Physical Review B</i> , 2008 , 77,	3.3	30
96	Phase imaging and the lever-sample tilt angle in dynamic atomic force microscopy. <i>Applied Physics Letters</i> , 2004 , 85, 4738-4740	3.4	28
95	Tribochemical Wear of Diamond-Like Carbon-Coated Atomic Force Microscope Tips. <i>ACS Applied Materials & Interfaces</i> , 2017 , 9, 35341-35348	9.5	27
94	Influence of chemical bonding on the variability of diamond-like carbon nanoscale adhesion. <i>Carbon</i> , 2018 , 128, 267-276	10.4	26
93	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. <i>Tribology Letters</i> , 2011 , 44, 99-106	2.8	25
92	Insights into tribology from in situ nanoscale experiments. <i>MRS Bulletin</i> , 2019 , 44, 478-486	3.2	24
91	Practical method to limit tip-sample contact stress and prevent wear in amplitude modulation atomic force microscopy. <i>ACS Nano</i> , 2013 , 7, 9836-50	16.7	23

90	Characterizing nanoscale scanning probes using electron microscopy: A novel fixture and a practical guide. <i>Review of Scientific Instruments</i> , 2016 , 87, 013703	1.7	22
89	Multibond Model of Single-Asperity Tribochemical Wear at the Nanoscale. <i>ACS Applied Materials & Interfaces</i> , 2017 , 9, 35333-35340	9.5	22
88	Nanoscale Roughness of Natural Fault Surfaces Controlled by Scale-Dependent Yield Strength. <i>Geophysical Research Letters</i> , 2017 , 44, 9299-9307	4.9	22
87	Atomistic Factors Governing Adhesion between Diamond, Amorphous Carbon and Model Diamond Nanocomposite Surfaces. <i>Journal of Adhesion Science and Technology</i> , 2010 , 24, 2471-2498	2	22
86	Nanomechanics of pH-Responsive, Drug-Loaded, Bilayered Polymer Grafts. <i>ACS Applied Materials & Interfaces</i> , 2017 , 9, 12936-12948	9.5	21
85	Rate and State Friction Relation for Nanoscale Contacts: Thermally Activated Prandtl-Tomlinson Model with Chemical Aging. <i>Physical Review Letters</i> , 2018 , 120, 186101	7.4	20
84	Tunable, Source-Controlled Formation of Platinum Silicides and Nanogaps from Thin Precursor Films. <i>Advanced Materials Interfaces</i> , 2014 , 1, 1300120	4.6	20
83	Visualization of nanoscale wear mechanisms in ultrananocrystalline diamond by in-situ TEM tribometry. <i>Carbon</i> , 2019 , 154, 132-139	10.4	19
82	A Technique for the Experimental Determination of the Length and Strength of Adhesive Interactions Between Effectively Rigid Materials. <i>Tribology Letters</i> , 2015 , 59, 1	2.8	19
81	Vibrational Properties and Specific Heat of Ultrananocrystalline Diamond: Molecular Dynamics Simulations. <i>Journal of Physical Chemistry C</i> , 2011 , 115, 21691-21699	3.8	19
80	Nanoscale in situ study of ZDDP tribofilm growth at aluminum-based interfaces using atomic force microscopy. <i>Tribology International</i> , 2020 , 143, 106075	4.9	19
79	Solid state magnetic resonance investigation of the thermally-induced structural evolution of silicon oxide-doped hydrogenated amorphous carbon. <i>Carbon</i> , 2016 , 105, 163-175	10.4	18
78	An In Situ Method for Simultaneous Friction Measurements and Imaging of Interfacial Tribochemical Film Growth in Lubricated Contacts. <i>Tribology Letters</i> , 2018 , 66, 1	2.8	18
77	Quantitative Evaluation of the Carbon Hybridization State by Near Edge X-ray Absorption Fine Structure Spectroscopy. <i>Analytical Chemistry</i> , 2016 , 88, 2817-24	7.8	17
76	Atomic Friction Modulation on the Reconstructed Au(111) Surface. <i>Tribology Letters</i> , 2011 , 43, 369-378	2.8	17
75	Experiments and simulations of the humidity dependence of friction between nanoasperities and graphite: The role of interfacial contact quality. <i>Physical Review Materials</i> , 2018 , 2,	3.2	17
74	Nanoscale Generation of Robust Solid Films from Liquid-Dispersed Nanoparticles via in Situ Atomic Force Microscopy: Growth Kinetics and Nanomechanical Properties. <i>ACS Applied Materials & Interfaces</i> , 2018 , 10, 40335-40347	9.5	17
73	Novel Metal Silicide Thin Films by Design via Controlled Solid-State Diffusion. <i>Chemistry of Materials</i> , 2015 , 27, 4247-4253	9.6	16

72	Nanocrystalline diamond AFM tips for chemical force spectroscopy: fabrication and photochemical functionalization. <i>Journal of Materials Chemistry</i> , 2012 , 22, 12682		16
71	Mechanisms of Contact, Adhesion, and Failure of Metallic Nanoasperities in the Presence of Adsorbates: Toward Conductive Contact Design. <i>ACS Nano</i> , 2017 , 11, 490-500	16.7	15
70	Measurement of the Length and Strength of Adhesive Interactions in a Nanoscale SiliconDiamond Interface. <i>Advanced Materials Interfaces</i> , 2015 , 2, 1400547	4.6	15
69	Small amplitude reciprocating wear performance of diamond-like carbon films: dependence of film composition and counterface material. <i>Tribology Letters</i> , 2007 , 27, 79-88	2.8	15
68	Friction Anisotropy of MoS: Effect of Tip-Sample Contact Quality. <i>Journal of Physical Chemistry Letters</i> , 2020 , 11, 6900-6906	6.4	15
67	Thermally Induced Structural Evolution of Silicon- and Oxygen-Containing Hydrogenated Amorphous Carbon: A Combined Spectroscopic and Molecular Dynamics Simulation Investigation. <i>Langmuir</i> , 2018 , 34, 2989-2995	4	14
66	Tribochemistry and material transfer for the ultrananocrystalline diamond-silicon nitride interface revealed by x-ray photoelectron emission spectromicroscopy. <i>Journal of Vacuum Science & Technology B</i> , 2007 , 25, 1700		14
65	Origin of Friction in Superlubric Graphite Contacts. <i>Physical Review Letters</i> , 2020 , 125, 126102	7.4	14
64	Friction. Slippery when dry. <i>Science</i> , 2015 , 348, 1087-8	33.3	13
63	Next-Generation Nanoelectromechanical Switch Contact Materials: A Low-Power Mechanical Alternative to Fully Electronic Field-Effect Transistors.. <i>IEEE Nanotechnology Magazine</i> , 2015 , 9, 18-24	1.7	12
62	Tribology on the Small Scale 2019 ,		12
61	Correcting for Tip Geometry Effects in Molecular Simulations of Single-Asperity Contact. <i>Tribology Letters</i> , 2017 , 65, 1	2.8	11
60	Ultrananocrystalline diamond tip integrated onto a heated atomic force microscope cantilever. <i>Nanotechnology</i> , 2012 , 23, 495302	3.4	11
59	Scanning Probe Studies of Nanoscale Adhesion Between Solids in the Presence of Liquids and Monolayer Films 2007 , 951-980		11
58	Nanoscale Friction Behavior of Transition-Metal Dichalcogenides: Role of the Chalcogenide. <i>ACS Nano</i> , 2020 , 14, 16013-16021	16.7	11
57	Vibrations of the Beetle's scanning probe microscope: Identification of a new mode, generalized analysis, and characterization methodology. <i>Review of Scientific Instruments</i> , 2006 , 77, 033706	1.7	10
56	Sticky but Slick: Reducing Friction Using Associative and Nonassociative Polymer Lubricant Additives. <i>ACS Applied Polymer Materials</i> , 2020 , 2, 4062-4070	4.3	10
55	Silicon Oxide-Rich Diamond-Like Carbon: A Conformal, Ultrasooth Thin Film Material with High Thermo-Oxidative Stability. <i>Advanced Materials Interfaces</i> , 2019 , 6, 1801416	4.6	10

54	Nanotribological Printing: A Nanoscale Additive Manufacturing Method. <i>Nano Letters</i> , 2018 , 18, 6756-6763	6.5	10
53	Adhesion Mechanics between Nanoscale Silicon Oxide Tips and Few-Layer Graphene. <i>Tribology Letters</i> , 2017 , 65, 1	2.8	9
52	Covalent Bonding and Atomic-Level Plasticity Increase Adhesion in Silicon-Diamond Nanocontacts. <i>ACS Applied Materials & Interfaces</i> , 2019 , 11, 40734-40748	9.5	9
51	Dynamic shear force microscopy of viscosity in nanometer-confined hexadecane layers. <i>Journal of Physics Condensed Matter</i> , 2016 , 28, 134004	1.8	9
50	. <i>Journal of Microelectromechanical Systems</i> , 2012 , 21, 431-442	2.5	9
49	Direct torsional actuation of microcantilevers using magnetic excitation. <i>Applied Physics Letters</i> , 2014 , 105, 093101	3.4	9
48	Abrasion of Steel by Ceramic Coatings: Comparison of RF-DLC to Sputtered B4C. <i>Tribology Letters</i> , 2002 , 12, 43-50	2.8	9
47	In-plane contributions to phase contrast in intermittent contact atomic force microscopy. <i>Ultramicroscopy</i> , 2003 , 97, 145-50	3.1	9
46	AFM at the Macroscale: Methods to Fabricate and Calibrate Probes for Millinewton Force Measurements. <i>Tribology Letters</i> , 2019 , 67, 1	2.8	9
45	Heterogeneity in the Small-Scale Deformation Behavior of Disordered Nanoparticle Packings. <i>Nano Letters</i> , 2016 , 16, 2455-62	11.5	8
44	Understanding the Tip-Sample Contact 2013 , 15-48		8
43	Characterization of Microscale Wear in a Polysilicon-Based MEMS Device Using AFM and PEEM-EXAFS Spectromicroscopy. <i>Tribology Letters</i> , 2009 , 36, 233-238	2.8	8
42	In situ oxygen plasma cleaning of microswitch surfaces—comparison of Ti and graphite electrodes. <i>Journal of Micromechanics and Microengineering</i> , 2016 , 26, 115020	2	8
41	Constraints on the Physical Mechanism of Frictional Aging From Nanoindentation. <i>Geophysical Research Letters</i> , 2018 , 45, 13,306	4.9	8
40	The strong effect on MEMS switch reliability of film deposition conditions and electrode geometry. <i>Microelectronics Reliability</i> , 2019 , 98, 131-143	1.2	7
39	Investigation of the Mechanics, Composition, and Functional Behavior of Thick Tribofilms Formed from Silicon- and Oxygen-Containing Hydrogenated Amorphous Carbon. <i>Tribology Letters</i> , 2019 , 67, 1	2.8	7
38	Sliding History-Dependent Adhesion of Nanoscale Silicon Contacts Revealed by in Situ Transmission Electron Microscopy. <i>Langmuir</i> , 2019 , 35, 15628-15638	4	7
37	A Numerical Contact Model Based on Real Surface Topography. <i>Tribology Letters</i> , 2013 , 50, 331-347	2.8	7

36	Thermomechanical stability of ultrananocrystalline diamond. <i>Journal of Applied Physics</i> , 2012 , 111, 054913	7
35	Measurements of In-Plane Material Properties with Scanning Probe Microscopy. <i>MRS Bulletin</i> , 2004 , 29, 472-477	3.2 7
34	Stick-Slip Instabilities for Interfacial Chemical Bond-Induced Friction at the Nanoscale. <i>Journal of Physical Chemistry B</i> , 2018 , 122, 991-999	3.4 7
33	Valence Band Control of Metal Silicide Films via Stoichiometry. <i>Journal of Physical Chemistry Letters</i> , 2016 , 7, 2573-8	6.4 6
32	Development and assessment of next-generation nanoelectromechanical switch contact materials 2014 ,	6
31	Unraveling the Friction Evolution Mechanism of Diamond-Like Carbon Film during Nanoscale Running-In Process toward Superlubricity. <i>Small</i> , 2021 , 17, e2005607	11 6
30	Novel materials solutions and simulations for nanoelectromechanical switches 2015 ,	5
29	On the integration of ultrananocrystalline diamond (UNCD) with CMOS chip. <i>AIP Advances</i> , 2017 , 7, 035124	4
28	Memory Distance for Interfacial Chemical Bond-Induced Friction at the Nanoscale. <i>ACS Nano</i> , 2019 , 13, 7425-7434	16.7 4
27	Linear Aging Behavior at Short Timescales in Nanoscale Contacts. <i>Physical Review Letters</i> , 2020 , 124, 026801	7.4 4
26	Nanoscale Wear as a Stress-Assisted Chemical Reaction: An in-situ TEM Study. <i>Microscopy and Microanalysis</i> , 2014 , 20, 1542-1543	0.5 4
25	Cooperativity Between Zirconium Dioxide Nanoparticles and Extreme Pressure Additives in Forming Protective Tribofilms: Toward Enabling Low Viscosity Lubricants. <i>Tribology Letters</i> , 2020 , 68, 1	2.8 4
24	Disordered Nanoparticle Packings under Local Stress Exhibit Avalanche-Like, Environmentally Dependent Plastic Deformation. <i>Nano Letters</i> , 2018 , 18, 5418-5425	11.5 3
23	Effectiveness of oxygen plasma versus UHV bakeout in cleaning MEMS switch surfaces 2015 ,	3
22	Assessment of the mechanical integrity of silicon and diamond-like-carbon coated silicon atomic force microscope probes 2010 ,	3
21	Bifurcation of nanoscale thermolubric friction behavior for sliding on MoS ₂ . <i>Physical Review Materials</i> , 2021 , 5,	3.2 3
20	Mechanochemical Effects of Adsorbates at Nanoelectromechanical Switch Contacts. <i>ACS Applied Materials & Interfaces</i> , 2019 , 11, 39238-39247	9.5 2
19	Temperature dependence of nanoscale friction investigated with thermal AFM probes. <i>Materials Research Society Symposia Proceedings</i> , 2009 , 1226, 50201	2

18	Nanoscale Run-In of Silicon Oxide-Doped Hydrogenated Amorphous Carbon: Dependence of Interfacial Shear Strength on Sliding Length and Humidity. <i>Tribology Letters</i> , 2020 , 68, 1	2.8	2
17	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. <i>ACS Applied Materials & Interfaces</i> , 2021 , 13, 12610-12621	9.5	2
16	Quantitative determination of the interaction potential between two surfaces using frequency-modulated atomic force microscopy. <i>Beilstein Journal of Nanotechnology</i> , 2020 , 11, 729-739	3	1
15	Influence of Chemical Bonding on the Variability of Diamond-Like Carbon Nanoscale Adhesion: An In-Situ TEM/Nanoindentation and Molecular Dynamics Study. <i>Microscopy and Microanalysis</i> , 2018 , 24, 1822-1823	0.5	1
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13	Multiscale Roughness of MEMS Surfaces 2004 , 133		1
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