Roland Bennewitz

List of Publications by Year
in descending order

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137	6,178	87843 38	74108 75
papers	citations	h-index	g-index

140	140	140	5284
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Relationship between corrosion and nanoscale friction on a metallic glass. Beilstein Journal of Nanotechnology, 2022, 13, 236-244.	1.5	0
2	Atomic-scale stick-slip friction on a metallic glass in corrosive solutions. Tribology International, 2022, 171, 107545.	3.0	1
3	Bending as Key Mechanism in the Tactile Perception of Fibrillar Surfaces. Advanced Materials Interfaces, 2022, 9, 2101380.	1.9	3
4	Perception of Friction in Tactile Exploration of Micro-structured Rubber Samples. Lecture Notes in Computer Science, 2022, , 21-29.	1.0	0
5	Molecular stiffness cues of an interpenetrating network hydrogel for cell adhesion. Materials Today Bio, 2022, 15, 100323.	2.6	1
6	Nanoscale friction and growth of surface oxides on a metallic glass under electrochemical polarization. Tribology International, 2021, 158, 106925.	3.0	18
7	Optoregulated force application to cellular receptors using molecular motors. Nature Communications, 2021, 12, 3580.	5.8	19
8	Nanomechanics of self-assembled DNA building blocks. Nanoscale, 2021, 13, 9371-9380.	2.8	7
9	Tactile perception of randomly rough surfaces. Scientific Reports, 2020, 10, 15800.	1.6	20
10	Role of Hair Coverage and Sweating for Textile Friction on the Forearm. Tribology Letters, 2020, 68, 1.	1.2	3
11	Molecular kinetics and cooperative effects in friction and adhesion of fast reversible bonds. Physical Chemistry Chemical Physics, 2019, 21, 17170-17175.	1.3	4
12	Molecular Rheology of a Nanometer-Confined Ionic Liquid. Journal of Physical Chemistry C, 2019, 123, 28284-28290.	1.5	16
13	Single layer graphene induces load-bearing molecular layering at the hexadecane-steel interface. Nanotechnology, 2019, 30, 46LT01.	1.3	6
14	In Situ Observation Reveals Local Detachment Mechanisms and Suction Effects in Micropatterned Adhesives. Advanced Functional Materials, 2019, 29, 1807713.	7.8	34
15	The mechanics of single cross-links which mediate cell attachment at a hydrogel surface. Nanoscale, 2019, 11, 11596-11604.	2.8	7
16	Modeling the Contact Mechanics of Hydrogels. Lubricants, 2019, 7, 35.	1.2	6
17	Correlation of friction and wear across length scales for PEEK sliding against steel. Tribology International, 2019, 136, 462-468.	3.0	11
18	Adhesion: In Situ Observation Reveals Local Detachment Mechanisms and Suction Effects in Micropatterned Adhesives (Adv. Funct. Mater. 14/2019). Advanced Functional Materials, 2019, 29, 1970091.	7.8	2

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19	Tribological Response of PEEK to Temperature Induced by Frictional and External Heating. Tribology Letters, 2019, 67, 1.	1.2	22
20	Contact Area and Shear Stress in Repeated Single-Asperity Sliding of Steel on Polymer. Tribology Letters, 2019, 67, 1.	1.2	13
21	Friction in Passive Tactile Perception Induces Phase Coherency in Late Somatosensory Single Trial Sequences. IEEE Transactions on Neural Systems and Rehabilitation Engineering, 2019, 27, 129-138.	2.7	3
22	Friction and wear of PEEK in continuous sliding and unidirectional scratch tests. Tribology International, 2018, 122, 108-113.	3.0	44
23	Friction force microscopy of tribochemistry and interfacial ageing for the SiO_x/Si/Au system. Beilstein Journal of Nanotechnology, 2018, 9, 1647-1658.	1.5	11
24	Molecular Layering in Nanometer-Confined Lubricants. Tribology Letters, 2018, 66, 1.	1.2	17
25	Tribology of a Braille Display and EEG Correlates. Tribology Letters, 2018, 66, 1.	1.2	73
26	Single-molecule force spectroscopy of fast reversible bonds. Physical Chemistry Chemical Physics, 2017, 19, 5239-5245.	1.3	11
27	Dynamic shear force microscopy of confined liquids at a gold electrode. Faraday Discussions, 2017, 199, 299-309.	1.6	19
28	Nanotribology and voltage-controlled friction: general discussion. Faraday Discussions, 2017, 199, 349-376.	1.6	0
29	Electrovariable nanoplasmonics: general discussion. Faraday Discussions, 2017, 199, 603-613.	1.6	1
30	Electroactuators: from understanding to micro-robotics and energy conversion: general discussion. Faraday Discussions, 2017, 199, 525-545.	1.6	2
31	Multivalent Adhesion and Friction Dynamics Depend on Attachment Flexibility. Journal of Physical Chemistry C, 2017, 121, 15888-15896.	1.5	9
32	Electrotunable wetting, and micro- and nanofluidics: general discussion. Faraday Discussions, 2017, 199, 195-237.	1.6	2
33	Importance of surface oxide for the tribology of a Zr-based metallic glass. Friction, 2017, 5, 115-122.	3.4	25
34	Contrast in nanoscale friction between rotational domains of graphene on Pt(111). Carbon, 2017, 113, 132-138.	5.4	33
35	Tribological Synergy of Filler Components in Multifunctional Polyimide Coatings. Advanced Engineering Materials, 2017, 19, 1600363.	1.6	6
36	Interactions between shape-persistent macromolecules as probed by AFM. Beilstein Journal of Organic Chemistry, 2017, 13, 938-951.	1.3	4

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37	Novel Experiments Reveal Scratching and Transfer Film Mechanisms in the Sliding of the PEEK/Steel Tribosystem. Tribology Letters, 2016, 63, 1.	1.2	6
38	Dynamic shear force microscopy of viscosity in nanometer-confined hexadecane layers. Journal of Physics Condensed Matter, 2016, 28, 134004.	0.7	14
39	Friction Mediated by Redox-Active Supramolecular Connector Molecules. Langmuir, 2015, 31, 10708-10716.	1.6	7
40	Lower nanometer-scale size limit for the deformation of a metallic glass by shear transformations revealed by quantitative AFM indentation. Beilstein Journal of Nanotechnology, 2015, 6, 1721-1732.	1.5	10
41	Micro- and Nanotribology of Graphene. Nanoscience and Technology, 2015, , 453-461.	1.5	0
42	Mechanisms of Friction and Wear Reduction by Carbon Fiber Reinforcement of PEEK. Tribology Letters, 2015, 58, 1.	1.2	42
43	Relating tribological stimuli to somatosensory electroencephalographic responses. , 2015, 2015, 8115-8.		1
44	Surface Softening in Metalâ€“Ceramic Sliding Contacts: An Experimental and Numerical Investigation. ACS Nano, 2015, 9, 1478-1491.	7.3	22
45	Dynamic effects in friction and adhesion through cooperative rupture and formation of supramolecular bonds. Nanoscale, 2015, 7, 7674-7681.	2.8	28
46	3D and 2D structural characterization of 1D Al/Al₂O₃ biphasic nanostructures. Journal of Microscopy, 2015, 258, 113-118.	0.8	4
47	Switching adhesion and friction by light using photosensitive guestâ€“host interactions. Chemical Communications, 2015, 51, 1830-1833.	2.2	27
48	Friction Force Microscopy. Nanoscience and Technology, 2015, , 3-16.	1.5	8
49	Young's modulus, fracture strength, and Poisson's ratio of nanocrystalline diamond films. Journal of Applied Physics, 2014, 116, .	1.1	62
50	Preferential sliding directions on graphite. Physical Review B, 2014, 89, .	1.1	32
51	Let it slip. Nature Physics, 2014, 10, 410-411.	6.5	1
52	Atomic Scale Mechanisms of Friction Reduction and Wear Protection by Graphene. Nano Letters, 2014, 14, 7145-7152.	4.5	210
53	Force microscopy of layering and friction in an ionic liquid. Journal of Physics Condensed Matter, 2014, 26, 284110.	0.7	36
54	Surviving the surf: The tribomechanical properties of the periostracum of Mytilus sp.. Acta Biomaterialia, 2014, 10, 3978-3985.	4.1	18

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55	Impact of van der Waals Interactions on Single Asperity Friction. Physical Review Letters, 2013, 111, 035502.	2.9	50
56	Reconstruction of surface potential from Kelvin probe force microscopy images. Nanotechnology, 2013, 24, 295702.	1.3	61
57	Friction on a Microstructured Elastomer Surface. Tribology Letters, 2013, 50, 3-15.	1.2	53
58	Effects of single asperity geometry on friction and wear of PEEK. Wear, 2013, 304, 109-117.	1.5	18
59	Nanotribology of clean and modified gold surfaces. Journal of Materials Research, 2013, 28, 1279-1288.	1.2	14
60	Friction and atomic-layer-scale wear of graphitic lubricants on SiC(0001) in dry sliding. Wear, 2013, 300, 78-81.	1.5	42
61	Surface structures and frictional properties of Au(100) in an electrochemical environment. Surface Science, 2013, 607, 20-24.	0.8	16
62	Structure vs Chemistry: Friction and Wear of Pt-Based Metallic Surfaces. ACS Applied Materials & Interfaces, 2013, 5, 11341-11347.	4.0	35
63	Friction model for single-asperity elastic-plastic contacts. Physical Review B, 2012, 86, .	1.1	28
64	Control of Nanoscale Friction on Gold in an Ionic Liquid by a Potential-Dependent Ionic Lubricant Layer. Physical Review Letters, 2012, 109, 155502.	2.9	201
65	Discharge During Detachment of Micro-Structured PDMS Sheds Light on the Role of Electrostatics in Adhesion. Journal of Adhesion, 2012, 88, 589-607.	1.8	19
66	Temporal development of indentation plasticity on the atomic scale revealed by force microscopy. Physical Review B, 2012, 86, .	1.1	8
67	Controlling microscopic friction on gold surfaces by electrochemical potential. Materials Research Society Symposia Proceedings, 2012, 1423, 13.	0.1	0
68	Friction and Wear on Single-Layer Epitaxial Graphene in Multi-Asperity Contacts. Tribology Letters, 2012, 48, 77-82.	1.2	98
69	Quantitative multichannel NC-AFM data analysis of graphene growth on SiC(0001). Beilstein Journal of Nanotechnology, 2012, 3, 179-185.	1.5	18
70	Stochastic noise in atomic force microscopy. Physical Review E, 2012, 86, 031104.	0.8	18
71	Molecular Order and Disorder in the Frictional Response of Alkanethiol Self-Assembled Monolayers. Journal of Physical Chemistry A, 2011, 115, 6942-6947.	1.1	19
72	Friction and Wear on the Atomic Scale. , 2011, , 243-292.		1

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73	Anion adsorption and atomic friction on Au(111). Electrochimica Acta, 2011, 56, 10694-10700.	2.6	33
74	Switching Atomic Friction by Electrochemical Oxidation. Langmuir, 2011, 27, 2561-2566.	1.6	45
75	Atomic-scale nanoindentation: detection and identification of single glide events in three dimensions by force microscopy. Nanotechnology, 2011, 22, 425703.	1.3	20
76	Ageing of a Microscopic Sliding Gold Contact at Low Temperatures. Physical Review Letters, 2011, 107, 144303.	2.9	34
77	Microscopic Friction Studies on Metal Surfaces. Tribology Letters, 2010, 39, 19-24.	1.2	49
78	Atomic Friction Investigations on Ordered Superstructures. Tribology Letters, 2010, 39, 321-327.	1.2	24
79	Nanotribology â€“ Fundamental Studies of Friction and Plasticity. Advanced Engineering Materials, 2010, 12, 362-367.	1.6	3
80	Discrete contact mechanics of a fibrillar surface with backing layer interactions. Journal of the Mechanics and Physics of Solids, 2010, 58, 1571-1581.	2.3	27
81	Structural and frictional properties of graphene films on SiC(0001) studied by atomic force microscopy. Physical Review B, 2010, 81, .	1.1	143
82	High-resolution friction force microscopy under electrochemical control. Review of Scientific Instruments, 2010, 81, 083701.	0.6	36
83	Friction and Wear on the Atomic Scale. , 2010, , 923-953.		2
84	Friction and Dissipation in Epitaxial Graphene Films. Physical Review Letters, 2009, 102, 086102.	2.9	482
85	Nano-meter scale plasticity in KBr studied by nanoindenter and force microscopy. Materials Research Society Symposia Proceedings, 2009, 1185, 90.	0.1	3
86	A kelvin probe force microscopy of charged indentation-induced dislocation structures in KBr. Nanotechnology, 2009, 20, 264005.	1.3	22
87	Local work function measurements of epitaxial graphene. Applied Physics Letters, 2008, 93, .	1.5	211
88	Dynamic strain measurements in a sliding microstructured contact. Journal of Physics Condensed Matter, 2008, 20, 015004.	0.7	14
89	Atomic-scale friction modulated by a buried interface: Combined atomic and friction force microscopy experiments. Physical Review B, 2008, 78, .	1.1	47
90	Atomic structure and friction of ultrathin films of KBr on Cu(100). Physical Review B, 2008, 77, .	1.1	47

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91	Friction and Wear on the Atomic Scale. , 2008, , 557-605.		3
92	Interpretation of atomic friction experiments based on atomistic simulations. Journal of Vacuum Science & Technology B, 2007, 25, 1547.	1.3	13
93	Asymmetry in the reciprocal epitaxy of NaCl and KBr. Physical Review B, 2007, 75, .	1.1	18
94	Forces, charges, and light emission during the rupture of adhesive contacts. Journal of Applied Physics, 2007, 102, 103509.	1.1	8
95	Nanometre-scale plasticity of Cu(100). Nanotechnology, 2007, 18, 044004.	1.3	20
96	Low-dimensional electron gas at semiconductor surfaces. Solid State Communications, 2007, 142, 617-626.	0.9	26
97	Atomic-Scale Control of Friction by Actuation of Nanometer-Sized Contacts. Science, 2006, 313, 207-210.	6.0	308
98	Structured surfaces of wide band gap insulators as templates for overgrowth of adsorbates. Journal of Physics Condensed Matter, 2006, 18, R417-R435.	0.7	30
99	Atomic-scale yield and dislocation nucleation in KBr. Physical Review B, 2006, 73, .	1.1	34
100	Friction force microscopy. Materials Today, 2005, 8, 42-48.	8.3	42
101	Si(110)5Ã—2â”Au: A metallic chain structure. Physical Review B, 2005, 72, .	1.1	22
102	A versatile instrument for in situ combination of scanning probe microscopy and time-of-flight mass spectrometry. Review of Scientific Instruments, 2005, 76, 103701.	0.6	22
103	Fluctuations and jump dynamics in atomic friction experiments. Physical Review B, 2005, 72, .	1.1	115
104	Friction and Wear on the Atomic Scale. , 2005, , 483-533.		4
105	Cu-TBPP and PTCDA molecules on insulating surfaces studied by ultra-high-vacuum non-contact AFM. Nanotechnology, 2004, 15, S91-S96.	1.3	82
106	Distance dependence of force and dissipation in non-contact atomic force microscopy on Cu(100) and Al(111). Nanotechnology, 2004, 15, S101-S107.	1.3	18
107	Switchable cantilever for a time-of-flight scanning force microscope. Applied Physics Letters, 2004, 84, 1558-1560.	1.5	25
108	Scanning Probe Microscopy. Advanced Texts in Physics, 2004, , .	0.5	301

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109	Atomic structure of alkali halide surfaces. Applied Physics A: Materials Science and Processing, 2004, 78, 837-841.	1.1	21
110	Observation of Individual Molecules Trapped on a Nanostructured Insulator. Nano Letters, 2004, 4, 2185-2189.	4.5	99
111	Transition from Stick-Slip to Continuous Sliding in Atomic Friction: Entering a New Regime of Ultralow Friction. Physical Review Letters, 2004, 92, 134301.	2.9	501
112	Switchable cantilever fabrication for a novel time-of-flight scanning force microscope. Microelectronic Engineering, 2003, 67-68, 635-643.	1.1	16
113	Silicon adatoms on the Si()5Ã—2â€“Au surface. Surface Science, 2003, 532-535, 928-933.	0.8	38
114	Friction and wear on the atomic scale. Wear, 2003, 254, 859-862.	1.5	50
115	The Cu(1 0 0)-c(2Ã—2) N structure studied by combined nc-AFM/STM. Applied Surface Science, 2003, 210, 43-48.	3.1	4
116	Atomic scale memory at a silicon surface. Nanotechnology, 2002, 13, 499-502.	1.3	100
117	Gd disilicide nanowires attached to Si(111) steps. Nanotechnology, 2002, 13, 545-547.	1.3	52
118	Nanotribology. Chimia, 2002, 56, 562-565.	0.3	3
119	One-dimensional Gd-induced chain structures on Si() surfaces. Surface Science, 2002, 498, L109-L112.	0.8	48
120	Atomic corrugation in nc-AFM of alkali halides. Applied Surface Science, 2002, 188, 232-237.	3.1	32
121	Atomically accurate Si grating with 5.73 nm period. Applied Physics Letters, 2001, 79, 1608-1610.	1.5	109
122	Friction experiments on the nanometre scale. Journal of Physics Condensed Matter, 2001, 13, R619-R642.	0.7	175
123	Atomic-resolution images of radiation damage in KBr. Surface Science, 2001, 474, L197-L202.	0.8	70
124	One-dimensional electronic states at surfaces. Journal of Physics Condensed Matter, 2001, 13, 11097-11113.	0.7	106
125	Contrast inversion in nc-AFM on Si(111)7Ã—7 due to short-range electrostatic interactions. Applied Physics A: Materials Science and Processing, 2001, 72, S19-S22.	1.1	12
126	Atomic friction studies on well-defined surfaces. Tribology Letters, 2001, 10, 51-56.	1.2	56

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127	Carbon nanotubes as tips in non-contact SFM. Applied Surface Science, 2000, 157, 269-273.	3.1	36
128	Using higher flexural modes in non-contact force microscopy. Applied Surface Science, 2000, 157, 337-342.	3.1	38
129	Experimental aspects of dissipation force microscopy. Physical Review B, 2000, 62, 13674-13679.	1.1	112
130	Dynamic force microscopy of copper surfaces: Atomic resolution and distance dependence of tip-sample interaction and tunneling current. Physical Review B, 2000, 62, 16944-16949.	1.1	119
131	Kelvin Probe Force Microscopy on Surfaces:Â Investigation of the Surface Potential of Self-Assembled Monolayers on Gold. Langmuir, 1999, 15, 8184-8188.	1.6	168
132	Ultrathin films of NaCl on Cu(111): a LEED and dynamic force microscopy study. Surface Science, 1999, 438, 289-296.	0.8	108
133	Surface colloid evolution during low-energy electron irradiation of CaF2(111). Surface Science, 1996, 366, 531-544.	0.8	48
134	Electron stimulated desorption from CaF2: penetration depth of electrons and sample charging. Nuclear Instruments & Methods in Physics Research B, 1995, 101, 118-121.	0.6	12
135	Bulk and surface metallization of CaF₂ under low energy electron irradiation. Radiation Effects and Defects in Solids, 1995, 137, 19-24.	0.4	11
136	Characterization of Ca aggregates on CaF2 (111)-surfaces by atomic force, XPS, and fluorescence microscopy. Nuclear Instruments & Methods in Physics Research B, 1994, 91, 623-627.	0.6	17
137	The Role of Plastic Deformation in Nanometer-Scale Wear. Advances in Science and Technology, 0, , .	0.2	2