Jacqueline Krim

List of Publications by Year
in descending order

143 papers	6,612 citations	76326 40 h-index	66911 78 g-index
148 all docs	148 docs citations	148 times ranked	3470 citing authors

#	Article	IF	Citations
1	Shear activation of ZDDP reaction films in the presence and absence of nanodiamonds. Applied Surface Science Advances, 2022, 7, 100214.	6.8	4
2	QCM Study of Tribotronic Control in Ionic Liquids and Nanoparticle Suspensions. Tribology Letters, 2021, 69, 1.	2.6	8
3	Tribotronic control and cyclic voltammetry of platinum interfaces with metal oxide nanofluids. Applied Surface Science, 2021, 566, 150675.	6.1	4
4	Continuum Model Analysis of QCM Nanotribological Data to Obtain Friction Coefficients for 304SS Contacts Lubricated by Water and TiO2 Nanoparticle Suspensions. Frontiers in Mechanical Engineering, 2020, 6, .	1.8	2
5	Dynamics of Neutral and Charged Nanodiamonds in Aqueous Media Confined between Gold Surfaces under Normal and Shear Loading. ACS Omega, 2020, 5, 10349-10358.	3.5	2
6	Correlation of high frequency QCM sphere-plate stiffness measurements with macroscopic frictional contacts in thin film and bulk stainless steel materials. Sensors and Actuators A: Physical, 2020, 306, 111913.	4.1	6
7	Nanotribological Performance Factors for Aqueous Suspensions of Oxide Nanoparticles and Their Relation to Macroscale Lubricity. Lubricants, 2019, 7, 49.	2.9	6
8	Synergistic effect of nanodiamonds on the adsorption of tricresyl phosphate on iron oxide surfaces. Applied Physics Letters, 2019, 114, .	3.3	12
9	Vibration can enhance stick-slip behavior for granular friction. Granular Matter, 2019, 21, 1.	2.2	9
10	Controlling Friction With External Electric or Magnetic Fields: 25 Examples. Frontiers in Mechanical Engineering, 2019, 5, .	1.8	30
11	Tuning Nanoscale Friction by Applying Weak Magnetic Fields to Reorient Adsorbed Oxygen Molecules. Condensed Matter, 2019, 4, 1.	1.8	11
12	Dielectric and Electrostatic Properties of the Silica Nanoparticleâ€“Water Interface by EPR of pH-Sensitive Spin Probes. Journal of Physical Chemistry C, 2019, 123, 29972-29985.	3.1	7
13	Tuning friction and slip at solid-nanoparticle suspension interfaces by electric fields. Scientific Reports, 2019, 9, 18584.	3.3	10
14	A Tribological Study of Î³-Fe2O3 Nanoparticles in Aqueous Suspension. Tribology Letters, 2018, 66, 1.	2.6	11
15	In situ, real time studies of thermal reaction film formation temperatures for iron and 304SS surfaces immersed in 5% tricresyl phosphate in base oil. Tribology International, 2018, 126, 106-115.	5.9	12
16	Interdependent Roles of Electrostatics and Surface Functionalization on the Adhesion Strengths of Nanodiamonds to Gold in Aqueous Environments Revealed by Molecular Dynamics Simulations. Journal of Physical Chemistry Letters, 2018, 9, 4396-4400.	4.6	6
17	Synergistic Effect of Nanodiamond and Phosphate Ester Anti-Wear Additive Blends. Lubricants, 2018, 6, 56.	2.9	14
18	Simultaneous stress and mass change measurements arising from laser induced detuning of a quartz crystal microbalance. Journal of Applied Physics, 2018, 124, .	2.5	8

#	Article	IF	Citations
19	Quartz crystal microbalance apparatus for study of viscous liquids at high temperatures. Review of Scientific Instruments, 2017, 88, 025112.	1.3	24
20	A Combined QCM and AFM Study Exploring the Nanoscale Lubrication Mechanism of Silica Nanoparticles in Aqueous Suspension. Tribology Letters, 2017, 65, 1.	2.6	15
21	A comparative study of the nanoscale and macroscale tribological attributes of alumina and stainless steel surfaces immersed in aqueous suspensions of positively or negatively charged nanodiamonds. Beilstein Journal of Nanotechnology, 2017, 8, 2045-2059.	2.8	10
22	Tribological properties of nanodiamonds in aqueous suspensions: effect of the surface charge. RSC Advances, 2015, 5, 78933-78940.	3.6	21
23	Nanodiamond-based Nanolubricants: Experiment and Modeling. Materials Research Society Symposia Proceedings, 2014, 1703, 1.	0.1	0
24	Surface science, MEMS and NEMS: Progress and opportunities for surface science research performed on, or by, microdevices. Progress in Surface Science, 2013, 88, 171-211.	8.3	101
25	Quartz Crystal Microbalance (QCM) Applications to Tribology. , 2013, , 2727-2733.		1
26	Scanning tunneling microscope-quartz crystal microbalance study of temperature gradients at an asperity contact. Review of Scientific Instruments, 2013, 84, 014901.	1.3	3
27	Frictional temperature rise in a sliding physisorbed monolayer of Kr/graphene. Journal of Physics Condensed Matter, 2012, 24, 424201.	1.8	9
28	Temperature dependence of nanoscale friction for Fe on YBCO. Journal of Applied Physics, 2012, 111, .	2.5	20
29	Friction and energy dissipation mechanisms in adsorbed molecules and molecularly thin films. Advances in Physics, 2012, 61, 155-323.	14.4	177
30	Impact of oxygen and argon plasma exposure on the roughness of gold film surfaces. Thin Solid Films, 2012, 520, 6201-6206.	1.8	34
31	Resolution of the transfer direction of field-evaporated gold atoms for nanofabrication and microelectromechanical system applications. Applied Physics Letters, 2011, 98, 044102.	3.3	15
32	Electrical Contact Resistance and Device Lifetime Measurements of Au-RuO2-Based RF MEMS Exposed to Hydrocarbons in Vacuum and Nitrogen Environments. Tribology Letters, 2011, 44, 305-314.	2.6	18
33	Stickâ€“Slip and the Transition to Steady Sliding in a 2D Granular Medium and a Fixed Particle Lattice. Pure and Applied Geophysics, 2011, 168, 2259-2275.	1.9	26
34	Impact of adsorbed organic monolayers on vacuum electron tunneling contributions to electrical resistance at an asperity contact. Journal of Applied Physics, 2011, 110, .	2.5	9
35	A Nano- to Macroscale Tribological Study of PFTS and TCP Lubricants for Si MEMS Applications. Tribology Letters, 2010, 38, 69-78.	2.6	16
36	Contact voltage-induced softening of RF microelectromechanical system gold-on-gold contacts at cryogenic temperatures. Journal of Applied Physics, 2010, 108, .	2.5	18

#	Article	IF	Citations
37	Temperature dependence of single-asperity friction for a diamond on diamondlike carbon interface. Journal of Applied Physics, 2010, 107, .	2.5	17
38	Impact of in situ oxygen plasma cleaning on the resistance of Ru and Au-Ru based rf microelectromechanical system contacts in vacuum. Journal of Applied Physics, 2010, 107, .	2.5	43
39	Contact degradation in hot/cold operation of direct contact micro-switches. Journal of Micromechanics and Microengineering, 2010, 20, 105028.	2.6	35
40	Evaluation of Oxygen Plasma and UV Ozone Methods for Cleaning of Occluded Areas in MEMS Devices. Journal of Microelectromechanical Systems, 2010, 19, 1292-1298.	2.5	37
41	Tribo-Induced Melting Transition at a Sliding Asperity Contact. Physical Review Letters, 2009, 103, 205502.	7.8	21
42	Magic-Sized Diamond Nanocrystals. Physical Review Letters, 2009, 102, 136104.	7.8	12
43	Sliding Friction Measurements of Molecularly Thin Ethanol and Pentanol Films: How Friction andÂSpreading Impact Lubricity. Journal of Low Temperature Physics, 2009, 157, 252-267.	1.4	5
44	Comparison of Au and Auâ€“Ni Alloys as Contact Materials for MEMS Switches. Journal of Microelectromechanical Systems, 2009, 18, 287-295.	2.5	64
45	Temperature dependence of asperity contact and contact resistance in gold RF MEMS switches. Journal of Micromechanics and Microengineering, 2009, 19, 025006.	2.6	32
46	Friction, force chains, and falling fruit. Physics Today, 2009, 62, 66-67.	0.3	7
47	Nanoscale design of adaptive tribological coatings for goldâ€“ytrium based nanocomposites. Tribology - Materials, Surfaces and Interfaces, 2009, 3, 145-150.	1.4	0
48	Cryogenic Performance of RF MEMS Switch Contacts. Journal of Microelectromechanical Systems, 2008, 17, 1460-1467.	2.5	19
49	Gas adsorption on aC60monolayer. Physical Review E, 2008, 77, 041603.	2.1	16
50	Tribological degradation of fluorocarbon coated silicon microdevice surfaces in normal and sliding contact. Journal of Applied Physics, 2008, 104, .	2.5	38
51	The role of creep in the time-dependent resistance of Ohmic gold contacts in radio frequency microelectromechanical system devices. Journal of Applied Physics, 2008, 104, .	2.5	28
52	RF MEMS Behavior, Surface Roughness and Asperity Contact. Materials Research Society Symposia Proceedings, 2007, 1052, 1.	0.1	0
53	Surface roughness, asperity contact and gold RF MEMS switch behavior. Journal of Micromechanics and Microengineering, 2007, 17, 2006-2015.	2.6	83
54	Multiscale Analysis of Liquid Lubrication Trends from Industrial Machines to Micro-Electrical-Mechanical Systems. Langmuir, 2007, 23, 9253-9257.	3.5	17

#	Article	IF	Citations
55	A new test facility for efficient evaluation of MEMS contact materials. Journal of Micromechanics and Microengineering, 2007, 17, 1788-1795.	2.6	35
56	QCM tribology studies of thin adsorbed films. Nano Today, 2007, 2, 38-43.	11.9	29
57	Dynamics of Vapor-phase Organophosphates on Silicon and OTS. Tribology Letters, 2007, 27, 269-276.	2.6	5
58	C60Molecular Bearings and the Phenomenon of Nanomapping. Physical Review Letters, 2006, 96, 186104.	7.8	32
59	STM, QCM, and the Windshield Wiper Effect:Â A Joint Theoreticalâ^'Experimental Study of Adsorbate Mobility and Lubrication at High Sliding Rates. Langmuir, 2006, 22, 9606-9609.	3.5	17
60	Superconductivity Dependent Friction of Water, Nitrogen, and Superheated He Films Adsorbed on Pb(111). Physical Review Letters, 2006, 96, 226107.	7.8	62
61	Scanning tunneling microscopy characterization of the surface morphology of copper films grown on mica and quartz. Thin Solid Films, 2005, 489, 325-329.	1.8	14
62	OTS adsorption: A dynamic QCM study. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2005, 262, 81-86.	4.7	15
63	Quartz-crystal microbalance studies of the slippage of solid and liquid krypton monolayers on metal(111) andC60surfaces. Physical Review B, 2005, 72, .	3.2	13
64	Impact of Substrate Corrugation on the Sliding Friction Levels of Adsorbed Films. Physical Review Letters, 2005, 95, 076101.	7.8	49
65	Applications of the Piezoelectric Quartz Crystal Microbalance for Microdevice Development. , 2005, , 227-259.		3
66	Friction at the nano-scale. Physics World, 2005, 18, 31-34.	0.0	14
67	Bridging the Gap between Macro- and Nanotribology: A Quartz Crystal Microbalance Study of Tricresylphosphate Uptake on Metal and Oxide Surfaces. Physical Review Letters, 2004, 92, 176101.	7.8	16
68	Scanning Tunneling Microscope-Quartz Crystal Microbalance Studies of "Real World" and Model Lubricants. ACS Symposium Series, 2004, , 1-18.	0.5	1
69	STM-QCM Studies of Vapor Phase Lubricants. , 2003, , 361-375.		1
70	Surface science and the atomic-scale origins of friction: what once was old is new again. Surface Science, 2002, 500, 741-758.	1.9	118
71	Resource Letter: FMMLS-1: Friction at macroscopic and microscopic length scales. American Journal of Physics, 2002, 70, 890-897.	0.7	82
72	Title is missing!. Tribology Letters, 2002, 13, 179-186.	2.6	22

#	Article	IF	Citations
73	Study of contacts in an electrostatically actuated microswitch. Sensors and Actuators A: Physical, 2001, 93, 19-26.	4.1	204
74	Title is missing!. Tribology Letters, 2001, 10, 59-65.	2.6	22
75	A scanning probe and quartz crystal microbalance study of the impact of C60on friction at solid-liquid interfaces. Journal of Physics Condensed Matter, 2001, 13, 4991-4999.	1.8	9
76	Measuring nanomechanical properties of a dynamic contact using an indenter probe and quartz crystal microbalance. Journal of Applied Physics, 2001, 90, 6391-6396.	2.5	69
77	Scanning tunneling microscope measurements of the amplitude of vibration of a quartz crystal oscillator. Journal of Applied Physics, 2000, 88, 4017.	2.5	109
78	Krim Replies:. Physical Review Letters, 1999, 83, 1262-1262.	7.8	12
79	Tuning friction with noise and disorder. Physical Review E, 1999, 59, R4737-R4740.	2.1	30
80	Atomic-Scale Friction in Xe/Ag and N2/Pb. International Journal of Thermophysics, 1998, 19, 827-834.	2.1	14
81	Fundamentals of Friction. MRS Bulletin, 1998, 23, 20-22.	3.5	27
82	Superconductivity-Dependent Sliding Friction. Physical Review Letters, 1998, 80, 1690-1693.	7.8	199
83	Quartz-crystal microbalance studies of the velocity dependence of interfacial friction. Physical Review B, 1998, 58, 5157-5159.	3.2	57
84	Energy Dissipation in Interfacial Friction. MRS Bulletin, 1998, 23, 23-26.	3.5	103
85	Dominance of Phonon Friction for a Xenon Film on a Silver (111) Surface. Physical Review Letters, 1997, 79, 4798-4801.	7.8	112
86	Quartz crystal microbalance studies of disorder-induced lubrication. Faraday Discussions, 1997, 107, 389-397.	3.2	28
87	Sliding Friction of Compressing Xenon Monolayers. , 1997, , 311-316.		3
88	Atomic-Scale Origins of Frictionâ€. Langmuir, 1996, 12, 4564-4566.	3.5	65
89	Friction and damping of. Surface Science, 1996, 368, 49-54.	1.9	10
90	Skewed Height Distributions of Kinetically Roughened Films. Materials Research Society Symposia Proceedings, 1996, 440, 311.	0.1	0

#	Article	IF	Citations
91	Friction at the Atomic Scale. Scientific American, 1996, 275, 74-80.	1.0	167
92	Adsorption isotherms and thermal fluctuations. Physical Review B, 1996, 53, 2073-2082.	3.2	36
93	Surface morphology and kinetic roughening of Ag on Ag(111) studied with scanning tunneling microscopy. Physical Review E, 1996, 54, 349-353.	2.1	13
94	Sliding Friction of Solid Xenon Monolayers and Bilayers on Ag(111). Physical Review Letters, 1996, 76, 803-806.	7.8	153
95	Fractal scaling behavior of water flow patterns on inhomogeneous surfaces. Physical Review E, 1996, 54, 6511-6515.	2.1	8
96	Adequacy of the Lifshitz Theory for Certain Thin Adsorbed Films. Physical Review Letters, 1996, 76, 3606-3609.	7.8	53
97	Electronic Contributions to Sliding Friction. , 1996, , 191-201.		2
98	Electronic contributions to sliding friction. Tribology Letters, 1995, 1, 211.	2.6	8
99	EXPERIMENTAL OBSERVATIONS OF SELF-AFFINE SCALING AND KINETIC ROUGHENING AT SUB-MICRON LENGTHSCALES. International Journal of Modern Physics B, 1995, 09, 599-632.	2.0	265
100	X-ray-reflectivity study of the growth kinetics of vapor-deposited silver films. Physical Review B, 1994, 49, 4902-4907.	3.2	119
101	Adsorption isotherm study of the fractal scaling behavior of vapor-deposited silver films. Physical Review E, 1994, 49, 4179-4184.	2.1	40
102	Spreading diffusion and its relation to sliding friction in molecularly thin adsorbed films. Physical Review E, 1994, 49, 4154-4156.	2.1	9
103	Atomic-scale friction measurements on silver and chemisorbed oxygen surfaces. Thin Solid Films, 1994, 253, 190-193.	1.8	28
104	Quartz crystal microbalance and synchrotron X-ray reflectivity study of water and liquid xenon adsorbed on gold and quartz. Surface Science, 1994, 306, 359-366.	1.9	12
105	Scanning Tunneling Microscopy Study of the Thick Film Limit of Kinetic Roughening. Physical Review Letters, 1994, 73, 3564-3567.	7.8	145
106	Probing Surface Roughness and Porosity through Adsorption of Wetting Layers. Materials Research Society Symposia Proceedings, 1994, 366, 231.	0.1	0
107	Adsorbate surface tension effects for isotherms recorded on fractally rough surfaces. Studies in Surface Science and Catalysis, 1994, , 91-98.	1.5	1
108	Applications of a Combined Scanning Tunneling Microscope and Quartz Microbalance. , 1994, , 303-309.		1

#	Article	IF	Citations
109	Effect of the form of the height-height correlation function on diffuse x-ray scattering from a self-affine surface. Physical Review B, 1993, 48, 2873-2877.	3.2	127
110	Determination of an atomic-scale frictional force law through quartz-crystal microbalance measurements. Physical Review B, 1993, 48, 9134-9137.	3.2	46
111	Scanning tunneling microscopy observation of self-affine fractal roughness in ion-bombarded film surfaces. Physical Review Letters, 1993, 70, 57-60.	7.8	300
112	Roughness exponents: A paradox resolved. Physical Review E, 1993, 48, 1576-1578.	2.1	95
113	Scanning Tunneling Microscopy Study of the Dynamic Scaling Properties of Rough Vapor-Deposited Silver Films. Materials Research Society Symposia Proceedings, 1993, 317, 111.	0.1	1
114	Sliding friction measurements of molecularly thin films. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1991, 9, 2566-2569.	2.1	22
115	Nanotribology of a Kr monolayer: A quartz-crystal microbalance study of atomic-scale friction. Physical Review Letters, 1991, 66, 181-184.	7.8	409
116	Characterization of The Surface Fractal Dimension of Evaporated Silver and Gold Films Through Adsorption Isotherm Measurements. Studies in Surface Science and Catalysis, 1991, 62, 217-224.	1.5	0
117	X-ray reflectivity and adsorption isotherm study of fractal scaling in vapor-deposited films. Physical Review Letters, 1991, 67, 3408-3411.	7.8	119
118	Probing Film Phase Transitions Through Measurements of Sliding Friction. NATO ASI Series Series B: Physics, 1991, , 169-182.	0.2	2
119	Experimental observation of interfacial slippage at the boundary of molecularly thin films with gold substrates. Physical Review B, 1990, 41, 3466-3472.	3.2	157
120	Pfeifer, Cole, and Krim reply. Physical Review Letters, 1990, 65, 663-663.	7.8	21
121	Slippage of simple liquid films adsorbed on silver and gold substrates. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1990, 8, 3417-3420.	2.1	64
122	Measurement of protein hydration shells using a quartz microbalance. Physical Review Letters, 1989, 63, 1743-1746.	7.8	9
123	Roughness and porosity characterization of carbon and magnetic films through adsorption isotherm measurements. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1989, 7, 2481-2485.	2.1	31
124	Influence of surface melting characteristics on the wetting behavior of solid adsorbed films. Langmuir, 1989, 5, 567-570.	3.5	3
125	Multilayer adsorption on a fractally rough surface. Physical Review Letters, 1989, 62, 1997-2000.	7.8	414
126	Neutron-scattering study of methane bilayer and trilayer films on graphite. Physical Review B, 1988, 37, 4735-4742.	3.2	49

#	Article	IF	Citations
127	Surface melting of multilayer oxygen films on graphite studied by neutron diffraction. Physical Review B, 1988, 38, 8967-8973.	3.2	17
128	Damping of a crystal oscillator by an adsorbed monolayer and its relation to interfacial viscosity. Physical Review B, 1988, 38, 12184-12189.	3.2	220
129	Summary Abstract: Influence of film melting characteristics on the wetting behavior of multilayer oxygen films adsorbed on graphite. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1987, 5, 1096-1097.	2.1	1
130	Triple-point wetting and surface melting of oxygen films adsorbed on graphite. Physical Review Letters, 1987, 58, 583-586.	7.8	92
131	A LEED study of methane films adsorbed on graphite in the monolayer range. Surface Science, 1986, 177, 25-35.	1.9	28
132	Fiber texture and surface composition of evaporated gold films on quartz. Thin Solid Films, 1986, 137, 297-303.	1.8	20
133	Qfactors of quartz oscillator modes as a probe of submonolayer-film dynamics. Physical Review B, 1986, 34, 1403-1404.	3.2	27
134	Incomplete wetting of methane on graphite at low temperatures. Journal De Physique, 1986, 47, 1757-1762.	1.8	19
135	Incomplete wetting ofHe4films on Ag and Au(111) surfaces. Physical Review B, 1985, 31, 7643-7650.	3.2	45
136	Incomplete wetting of helium films. Surface Science, 1985, 162, 421-425.	1.9	13
137	A LEED and neutron diffraction study of hexane adsorbed on graphite in the monolayer range: uniaxial commensurate-incommensurate transition. Surface Science, 1985, 162, 446-451.	1.9	46
138	On the limit of compression of a physisorbed monolayer. Journal De Physique, 1985, 46, 425-433.	1.8	9
139	Complete and incomplete wetting of krypton and oxygen on graphite: Reentrant type-2 growth on a scale of substrate strength. Physical Review B, 1984, 29, 983-987.	3.2	131
140	Triple-Point Wetting of Light Molecular Gases on Au(111) Surfaces. Physical Review Letters, 1984, 52, 640-643.	7.8	154
141	Wetting and nonwetting of molecular films at zero temperature. Physical Review B, 1984, 29, 5074-5080.	3.2	50
142	Measurement and modelling of surface micromachined, electrostatically actuated microswitches. , 0, , .		32
143	Study of contacts in an electrostatically actuated microswitch. , 0, , .		18