Seong H Kim

List of Publications by Year
in descending order

Source: https://exaly.com/author-pdf/6499315/publications.pdf

Version: 2024-02-01

228 papers	10,506 citations	30047 54 h-index	48277 88 g-index
231 all docs	231 docs citations	231 times ranked	9663 citing authors

#	Article	IF	Citations
1	Evolution of the Adsorbed Water Layer Structure on Silicon Oxide at Room Temperature. Journal of Physical Chemistry B, 2005, 109, 16760-16763.	1.2	614
2	Polymerâ€“inorganic solidâ€“electrolyte interphase for stable lithium metal batteries under lean electrolyte conditions. Nature Materials, 2019, 18, 384-389.	13.3	587
3	Nanotribology and MEMS. Nano Today, 2007, 2, 22-29.	6.2	329
4	Effects of ball milling on the structure of cotton cellulose. Cellulose, 2019, 26, 305-328.	2.4	253
5	Organosulfide-plasticized solid-electrolyte interphase layer enables stable lithium metal anodes for long-cycle lithium-sulfur batteries. Nature Communications, 2017, 8, 850.	5.8	240
6	Effects of adsorbed water layer structure on adhesion force of silicon oxide nanoasperity contact in humid ambient. Journal of Chemical Physics, 2006, 124, 174712.	1.2	205
7	Characterization of crystalline cellulose in biomass: Basic principles, applications, and limitations of XRD, NMR, IR, Raman, and SFG. Korean Journal of Chemical Engineering, 2013, 30, 2127-2141.	1.2	154
8	Hydrogen-Bonding Network and OH Stretch Vibration of Cellulose: Comparison of Computational Modeling with Polarized IR and SFG Spectra. Journal of Physical Chemistry B, 2015, 119, 15138-15149.	1.2	152
9	A comparative review of the aqueous corrosion of glasses, crystalline ceramics, and metals. Npj Materials Degradation, 2018, 2, .	2.6	150
10	Self-Formed Hybrid Interphase Layer on Lithium Metal for High-Performance Lithiumâ€“Sulfur Batteries. ACS Nano, 2018, 12, 1500-1507.	7.3	149
11	Probing cellulose structures with vibrational spectroscopy. Cellulose, 2019, 26, 35-79.	2.4	132
12	Shear-Induced Structural Changes and Origin of Ultralow Friction of Hydrogenated Diamond-like Carbon (DLC) in Dry Environment. ACS Applied Materials & Interfaces, 2017, 9, 16704-16714.	4.0	127
13	Nanomanufacturing of silicon surface with a single atomic layer precision via mechanochemical reactions. Nature Communications, 2018, 9, 1542.	5.8	124
14	Superhydrophobic CFxCoating via In-Line Atmospheric RF Plasma of Heâ^'CF4â^'H2. Langmuir, 2005, 21, 12213-12217.	1.6	123
15	Water Adsorption on Hydrophilic and Hydrophobic Surfaces of Silicon. Journal of Physical Chemistry C, 2018, 122, 11385-11391.	1.5	118
16	Direct fabrication of enzyme-carrying polymer nanofibers by electrospinning. Journal of Materials Chemistry, 2005, 15, 3241.	6.7	111
17	Effect of Humidity on Friction and Wearâ€”A Critical Review. Lubricants, 2018, 6, 74.	1.2	106
18	In-situ Vapor-Phase Lubrication of MEMS. Tribology Letters, 2008, 29, 67-74.	1.2	105

#	Article	IF	Citations
19	Mechanochemistry at Solid Surfaces: Polymerization of Adsorbed Molecules by Mechanical Shear at Tribological Interfaces. ACS Applied Materials & Interfaces, 2017, 9, 3142-3148.	4.0	99
20	Selective Detection of Crystalline Cellulose in Plant Cell Walls with Sum-Frequency-Generation (SFG) Vibration Spectroscopy. Biomacromolecules, 2011, 12, 2434-2439.	2.6	98
21	Macro- to Nanoscale Wear Prevention via Molecular Adsorption. Langmuir, 2008, 24, 155-159.	1.6	97
22	Role of Tribochemistry in Nanowear of Single-Crystalline Silicon. ACS Applied Materials & Interfaces, 2012, 4, 1585-1593.	4.0	93
23	Sum-Frequency-Generation Vibration Spectroscopy and Density Functional Theory Calculations with Dispersion Corrections (DFT-D2) for Cellulose Iî± and Iî². Journal of Physical Chemistry B, 2013, 117, 6681-6692.	1.2	90
24	Experimental and Density Functional Theory Study of the Tribochemical Wear Behavior of SiO₂ in Humid and Alcohol Vapor Environments. Langmuir, 2009, 25, 13052-13061.	1.6	89
25	Cellulose synthase complexes act in a concerted fashion to synthesize highly aggregated cellulose in secondary cell walls of plants. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 11348-11353.	3.3	86
26	Characterization of Starch Polymorphic Structures Using Vibrational Sum Frequency Generation Spectroscopy. Journal of Physical Chemistry B, 2014, 118, 1775-1783.	1.2	85
27	Structural Insight in the Interfacial Effect in Ferroelectric Polymer Nanocomposites. Advanced Materials, 2020, 32, e2005431.	11.1	84
28	Fabrication of Superhydrophobic Surfaces. Journal of Adhesion Science and Technology, 2008, 22, 235-250.	1.4	83
29	Effects of Surface Chemistry on Structure and Thermodynamics of Water Layers at Solidâ^'Vapor Interfaces. Journal of Physical Chemistry C, 2009, 113, 2128-2133.	1.5	83
30	Understanding Run-In Behavior of Diamond-Like Carbon Friction and Preventing Diamond-Like Carbon Wear in Humid Air. Langmuir, 2011, 27, 12702-12708.	1.6	82
31	Probing crystal structure and mesoscale assembly of cellulose microfibrils in plant cell walls, tunicate tests, and bacterial films using vibrational Sum Frequency Generation (SFG) spectroscopy. Physical Chemistry Chemical Physics, 2014, 16, 10844.	1.3	82
32	Perturbation ofBrachypodium distachyon CELLULOSE SYNTHASE A4or7results in abnormal cell walls. BMC Plant Biology, 2013, 13, 131.	1.6	81
33	Humidity Dependence of Tribochemical Wear of Monocrystalline Silicon. ACS Applied Materials & Interfaces, 2015, 7, 14785-14792.	4.0	80
34	Effects of Water on Tribochemical Wear of Silicon Oxide Interface: Molecular Dynamics (MD) Study with Reactive Force Field (ReaxFF). Langmuir, 2016, 32, 1018-1026.	1.6	80
35	Review on Electromechanical Coupling Properties of Biomaterials. ACS Applied Bio Materials, 2018, 1, 936-953.	2.3	80
36	Fabrication of Electrically Conducting Polypyrrole-Poly(ethylene oxide) Composite Nanofibers. Macromolecular Rapid Communications, 2005, 26, 1599-1603.	2.0	77

#	Article	IF	Citations
37	Cellulose polymorphism study with sum-frequency-generation (SFG) vibration spectroscopy: identification of exocyclic CH2OH conformation and chain orientation. Cellulose, 2013, 20, 991-1000.	2.4	76
38	Electrokinetic Phenomena Enhanced Lithiumâ€ion Transport in Leaky Film for Stable Lithium Metal Anodes. Advanced Energy Materials, 2019, 9, 1900704.	10.2	76
39	Mutations in the Pectin Methyltransferase QUASIMODO2 Influence Cellulose Biosynthesis and Wall Integrity in Arabidopsis. Plant Cell, 2020, 32, 3576-3597.	3.1	72
40	Cellulose polymorphs and physical properties of cotton fabrics processed with commercial textile mills for mercerization and liquid ammonia treatments. Textile Reseach Journal, 2014, 84, 1692-1699.	1.1	71
41	Quantification of crystalline cellulose in lignocellulosic biomass using sum frequency generation (SFG) vibration spectroscopy and comparison with other analytical methods. Carbohydrate Polymers, 2012, 89, 802-809.	5.1	69
42	Cellulose microfibril orientation in onion (Allium cepa L.) epidermis studied by atomic force microscopy (AFM) and vibrational sum frequency generation (SFG) spectroscopy. Cellulose, 2014, 21, 1075-1086.	2.4	68
43	Mechanochemical Wear of Soda Lime Silica Glass in Humid Environments. Journal of the American Ceramic Society, 2014, 97, 2061-2068.	1.9	67
44	Deposition of stable hydrophobic coatings with in-line CH4 atmospheric rf plasma. Journal of Materials Chemistry, 2006, 16, 977.	6.7	65
45	Progressive structural changes of Avicel, bleached softwood and bacterial cellulose during enzymatic hydrolysis. Scientific Reports, 2015, 5, 15102.	1.6	64
46	Tribology of Si/SiO₂ in Humid Air: Transition from Severe Chemical Wear to Wearless Behavior at Nanoscale. Langmuir, 2015, 31, 149-156.	1.6	64
47	Hydrogen bonding interactions of H2O and SiOH on a boroaluminosilicate glass corroded in aqueous solution. Npj Materials Degradation, 2020, 4, .	2.6	64
48	Thejiaoyao1Mutant Is an Allele ofkorrigan1That Abolishes Endoglucanase Activity and Affects the Organization of Both Cellulose Microfibrils and Microtubules inArabidopsisÂ Â. Plant Cell, 2014, 26, 2601-2616.	3.1	63
49	Specular reflectance (SR) and attenuated total reflectance (ATR) infrared (IR) spectroscopy of transparent flat glass surfaces: A case study for soda lime float glass. Journal of Non-Crystalline Solids, 2015, 428, 189-196.	1.5	63
50	Chemical and physical origins of friction on surfaces with atomic steps. Science Advances, 2019, 5, eaaw0513.	4.7	62
51	Surface Structure of Hydrogenated Diamond-like Carbon: Origin of Run-In Behavior Prior to Superlubricious Interfacial Shear. Langmuir, 2015, 31, 1711-1721.	1.6	61
52	Self-accelerated corrosion of nuclear waste forms at material interfaces. Nature Materials, 2020, 19, 310-316.	13.3	61
53	Hydronium Ions in Sodaâ€lime Silicate Glass Surfaces. Journal of the American Ceramic Society, 2013, 96, 458-463.	1.9	60
54	Average molecular orientations in the adsorbed water layers on silicon oxide in ambient conditions. Physical Chemistry Chemical Physics, 2008, 10, 4981.	1.3	58

#	Article	IF	Citations
55	Cellulose produced by Gluconacetobacter xylinus strains ATCC 53524 and ATCC 23768: Pellicle formation, post-synthesis aggregation and fiber density. Carbohydrate Polymers, 2015, 133, 270-276.	5.1	58
56	Surface science of single-site heterogeneous olefin polymerization catalysts. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 15289-15294.	3.3	57
57	Hydrothermal reactions of soda lime silica glass â€“ Revealing subsurface damage and alteration of mechanical properties and chemical structure of glass surfaces. Journal of Non-Crystalline Solids, 2016, 452, 93-101.	1.5	56
58	Thermal Poling of Sodaâ€Lime Silica Glass with Nonblocking Electrodesâ€”Part 1: Effects of Sodium Ion Migration and Water Ingress on Glass Surface Structure. Journal of the American Ceramic Society, 2016, 99, 1221-1230.	1.9	55
59	Thickness and Structure of Adsorbed Water Layer and Effects on Adhesion and Friction at Nanoasperity Contact. Colloids and Interfaces, 2019, 3, 55.	0.9	54
60	Recent Advances in Corrosion Science Applicable To Disposal of High-Level Nuclear Waste. Chemical Reviews, 2021, 121, 12327-12383.	23.0	52
61	Environmental effects on initiation and propagation of surface defects on silicate glasses: scratch and fracture toughness study. Applied Physics A: Materials Science and Processing, 2014, 116, 519-528.	1.1	51
62	Comprehensive analysis of cellulose content, crystallinity, and lateral packing in Gossypium hirsutum and Gossypium barbadense cotton fibers using sum frequency generation, infrared and Raman spectroscopy, and X-ray diffraction. Cellulose, 2015, 22, 971-989.	2.4	51
63	Running-in process of Si-SiO x /SiO2 pair at nanoscaleâ€”Sharp drops in friction and wear rate during initial cycles. Friction, 2013, 1, 81-91.	3.4	50
64	Analysis of Water and Hydroxyl Species in Soda Lime Glass Surfaces Using Attenuated Total Reflection (ATR)â€IR Spectroscopy. Journal of the American Ceramic Society, 2016, 99, 128-134.	1.9	50
65	Fabrication of electrically-conducting nonwoven porous mats of polystyreneâ€“polypyrrole coreâ€“shell nanofibers via electrospinning and vapor phase polymerization. Journal of Materials Chemistry, 2008, 18, 5155.	6.7	49
66	Adsorption Isotherm and Orientation of Alcohols on Hydrophilic SiO₂ under Ambient Conditions. Journal of Physical Chemistry C, 2009, 113, 10632-10641.	1.5	49
67	Monitoring Meso-Scale Ordering of Cellulose in Intact Plant Cell Walls Using Sum Frequency Generation Spectroscopy. Plant Physiology, 2013, 163, 907-913.	2.3	49
68	Absence of Sum Frequency Generation in Support of Orthorhombic Symmetry of Î±-Chitin. Macromolecules, 2016, 49, 7025-7031.	2.2	49
69	Effects of contact pressure, counter-surface and humidity on wear of soda-lime-silica glass at nanoscale. Tribology International, 2016, 94, 675-681.	3.0	48
70	Decomposition Reaction of Organophosphorus Nerve Agents on Solid Surfaces with Atmospheric Radio Frequency Plasma Generated Gaseous Species. Langmuir, 2007, 23, 8074-8078.	1.6	47
71	Effects of humidity and counter-surface on tribochemical wear of soda-lime-silica glass. Wear, 2015, 342-343, 100-106.	1.5	47
72	Atomic force microscopy based nanoindentation study of onion abaxial epidermis walls in aqueous environment. Journal of Applied Physics, 2015, 117, .	1.1	47

#	Article	IF	Citations
73	Multimodal Broadband Vibrational Sum Frequency Generation (MM-BB-V-SFG) Spectrometer and Microscope. Journal of Physical Chemistry B, 2016, 120, 102-116.	1.2	47
74	Mechanochemical Association Reaction of Interfacial Molecules Driven by Shear. Langmuir, 2018, 34, 5971-5977.	1.6	46
75	Effects of Gas or Vapor Adsorption on Adhesion, Friction, and Wear of Solid Interfaces. Langmuir, 2014, 30, 2977-2992.	1.6	45
76	Spectroscopic ellipsometry study of thickness and porosity of the alteration layer formed on international simple glass surface in aqueous corrosion conditions. Npj Materials Degradation, 2018, 2, .	2.6	44
77	Searching for correlations between vibrational spectral features and structural parameters of silicate glass network. Journal of the American Ceramic Society, 2020, 103, 3575-3589.	1.9	43
78	Quantification of oxygenated species on a diamond-like carbon (DLC) surface. Applied Surface Science, 2011, 257, 7633-7638.	3.1	42
79	Molecular dynamics study of correlations between <scp>IR</scp> peak position and bond parameters of silica and silicate glasses: Effects of temperature and stress. Journal of the American Ceramic Society, 2018, 101, 178-188.	1.9	41
80	Friction-induced subsurface densification of glass at contact stress far below indentation damage threshold. Acta Materialia, 2020, 189, 166-173.	3.8	41
81	Characterization of surface structures of dealkalized soda lime silica glass using X-ray photoelectron, specular reflection infrared, attenuated total reflection infrared and sum frequency generation spectroscopies. Journal of Non-Crystalline Solids, 2017, 474, 24-31.	1.5	40
82	Effects of gas adsorption isotherm and liquid contact angle on capillary force for sphere-on-flat and cone-on-flat geometries. Journal of Colloid and Interface Science, 2010, 352, 549-557.	5.0	39
83	Effects of Plant Cell Wall Matrix Polysaccharides on Bacterial Cellulose Structure Studied with Vibrational Sum Frequency Generation Spectroscopy and X-ray Diffraction. Biomacromolecules, 2014, 15, 2718-2724.	2.6	39
84	Effect of mechanical disruption on the effectiveness of three reactors used for dilute acid pretreatment of corn stover Part 1: chemical and physical substrate analysis. Biotechnology for Biofuels, 2014, 7, 57.	6.2	39
85	Tribochemistry of Carbon Films in Oxygen and Humid Environments: Oxidative Wear and Galvanic Corrosion. Langmuir, 2016, 32, 1996-2004.	1.6	39
86	Thermal Poling of Sodaâ€Lime Silica Glass with Nonblocking Electrodesâ€”Part 2: Effects on Mechanical and Mechanochemical Properties. Journal of the American Ceramic Society, 2016, 99, 1231-1238.	1.9	38
87	Friction at single-layer graphene step edges due to chemical and topographic interactions. Carbon, 2019, 154, 67-73.	5.4	38
88	Boundary lubrication effect of organic residue left on surface after evaporation of organic cleaning solvent. Wear, 2016, 350-351, 21-26.	1.5	36
89	Toward an understanding of the increase in enzymatic hydrolysis by mechanical refining. Biotechnology for Biofuels, 2018, 11, 289.	6.2	36
90	Ultralow Boundary Lubrication Friction by Three-Way Synergistic Interactions among Ionic Liquid, Friction Modifier, and Dispersant. ACS Applied Materials & Interfaces, 2020, 12, 17077-17090.	4.0	36

#	Article	IF	Citations
91	Vibrational spectroscopy analysis of silica and silicate glass networks. Journal of the American Ceramic Society, 2022, 105, 2355-2384.	1.9	36
92	Coadsorption of n-Propanol and Water on SiO₂: Study of Thickness, Composition, and Structure of Binary Adsorbate Layer Using Attenuated Total Reflection Infrared (ATR-IR) and Sum Frequency Generation (SFG) Vibration Spectroscopy. Journal of Physical Chemistry C, 2012, 116, 9909-9916.	1.5	35
93	Effects of Nanoscale Surface Texture and Lubricant Molecular Structure on Boundary Lubrication in Liquid. Langmuir, 2013, 29, 13419-13426.	1.6	35
94	Lubrication by Physisorbed Molecules in Equilibrium with Vapor at Ambient Condition: Effects of Molecular Structure and Substrate Chemistry. Langmuir, 2014, 30, 6469-6478.	1.6	35
95	Functional Specialization of Cellulose Synthase Isoforms in a Moss Shows Parallels with Seed Plants. Plant Physiology, 2017, 175, 210-222.	2.3	34
96	Dehydration-induced physical strains of cellulose microfibrils in plant cell walls. Carbohydrate Polymers, 2018, 197, 337-348.	5.1	34
97	Complex refractive index of silica, silicate, borosilicate, and boroaluminosilicate glasses â€“ Analysis of glass network vibration modes with specular-reflection IR spectroscopy. Journal of Non-Crystalline Solids, 2018, 494, 94-103.	1.5	34
98	Effects of Delignification on Crystalline Cellulose in Lignocellulose Biomass Characterized by Vibrational Sum Frequency Generation Spectroscopy and X-ray Diffraction. Bioenergy Research, 2015, 8, 1750-1758.	2.2	33
99	What Governs Friction of Silicon Oxide in Humid Environment: Contact Area between Solids, Water Meniscus around the Contact, or Water Layer Structure?. Langmuir, 2017, 33, 9673-9679.	1.6	33
100	Probing Hydrogen-Bonding Interactions of Water Molecules Adsorbed on Silica, Sodium Calcium Silicate, and Calcium Aluminosilicate Glasses. Journal of Physical Chemistry C, 2018, 122, 17792-17801.	1.5	33
101	Superhydrophilic Polymer Brushes with High Durability and Anti-fogging Activity. ACS Applied Polymer Materials, 2021, 3, 5291-5301.	2.0	33
102	Is Ultra-Low Friction Needed to Prevent Wear of Diamond-Like Carbon (DLC)? An Alcohol Vapor Lubrication Study for Stainless Steel/DLC Interface. Tribology Letters, 2011, 42, 285-291.	1.2	32
103	Mechanochemistry of Physisorbed Molecules at Tribological Interfaces: Molecular Structure Dependence of Tribochemical Polymerization. Langmuir, 2017, 33, 2717-2724.	1.6	32
104	Surface Chemistry Dependence of Mechanochemical Reaction of Adsorbed Moleculesâ€”An Experimental Study on Tribopolymerization of Î±-Pinene on Metal, Metal Oxide, and Carbon Surfaces. Langmuir, 2018, 34, 2432-2440.	1.6	32
105	Distinguishing Surface versus Bulk Hydroxyl Groups of Cellulose Nanocrystals Using Vibrational Sum Frequency Generation Spectroscopy. Journal of Physical Chemistry Letters, 2018, 9, 70-75.	2.1	32
106	Tribochemical synthesis of nano-lubricant films from adsorbed molecules at sliding solid interface: Tribo-polymers from Î±-pinene, pinane, and n-decane. Surface Science, 2016, 648, 352-359.	0.8	31
107	Comparative physical and chemical analyses of cotton fibers from two near isogenic upland lines differing in fiber wall thickness. Cellulose, 2017, 24, 2385-2401.	2.4	31
108	Subsurface structural change of silica upon nanoscale physical contact: Chemical plasticity beyond topographic elasticity. Acta Materialia, 2021, 208, 116694.	3.8	31

#	Article	IF	Citations
109	Water Adsorption Isotherms on CH₃-, OH-, and COOH-Terminated Organic Surfaces at Ambient Conditions Measured with PM-RAIRS. Langmuir, 2012, 28, 15263-15269.	1.6	30
110	Vibrational sum-frequency-generation (SFG) spectroscopy study of the structural assembly of cellulose microfibrils in reaction woods. Cellulose, 2014, 21, 2219-2231.	2.4	30
111	Friction and Tribochemical Wear Behaviors of Native Oxide Layer on Silicon at Nanoscale. Tribology Letters, 2017, 65, 1.	1.2	30
112	Surface Structure Dependence of Mechanochemical Etching: Scanning Probe-Based Nanolithography Study on Si(100), Si(110), and Si(111). ACS Applied Materials & Interfaces, 2019, 11, 20583-20588.	4.0	30
113	Involvement of CesA4, CesA7-A/B and CesA8-A/B in secondary wall formation in Populus trichocarpa wood. Tree Physiology, 2020, 40, 73-89.	1.4	30
114	Spectral changes in Siâ€“Oâ€“Si stretching band of porous glass network upon ingress of water. Journal of Non-Crystalline Solids, 2020, 527, 119722.	1.5	30
115	Tribochemical Polymerization of Adsorbed n-Pentanol on SiO₂ during Rubbing: When Does It Occur and Is It Responsible for Effective Vapor Phase Lubrication?. Langmuir, 2010, 26, 16299-16304.	1.6	29
116	Elemental areal density calculation and oxygen speciation for flat glass surfaces using x-ray photoelectron spectroscopy. Journal of Non-Crystalline Solids, 2016, 450, 185-193.	1.5	29
117	Vibrational Sum Frequency Generation Spectroscopy Study of Hydrous Species in Soda Lime Silica Float Glass. Langmuir, 2016, 32, 6035-6045.	1.6	29
118	Effects of Al:Si and (AlÂ+ÂNa):Si ratios on the properties of the international simple glass, part II: Structure. Journal of the American Ceramic Society, 2021, 104, 183-207.	1.9	29
119	Quantum Mechanical Calculations of Vibrational Sum-Frequency-Generation (SFG) Spectra of Cellulose: Dependence of the CH and OH Peak Intensity on the Polarity of Cellulose Chains within the SFG Coherence Domain. Journal of Physical Chemistry Letters, 2017, 8, 55-60.	2.1	28
120	Effect of heat treatment on the surface chemical structure of glass: Oxygen speciation from in situ XPS analysis. Journal of the American Ceramic Society, 2018, 101, 644-656.	1.9	28
121	Correlations of Apparent Cellulose Crystallinity Determined by XRD, NMR, IR, Raman, and SFG Methods. Advances in Polymer Science, 2015, , 115-131.	0.4	27
122	Comparison and validation of Fourier transform infrared spectroscopic methods for monitoring secondary cell wall cellulose from cotton fibers. Cellulose, 2018, 25, 49-64.	2.4	27
123	Activation Volume in Shear-Driven Chemical Reactions. Tribology Letters, 2021, 69, 1.	1.2	27
124	Humidity Effects on Friction and Wear Between Dissimilar Metals. Tribology Letters, 2012, 48, 305-313.	1.2	26
125	Effects of surface initial condition on aqueous corrosion of glassâ€”A study with a model nuclear waste glass. Journal of the American Ceramic Society, 2019, 102, 1652-1664.	1.9	26
126	Temperature-Dependent Mechanochemical Wear of Silicon in Water: The Role of Siâ€“OH Surfacial Groups. Langmuir, 2019, 35, 7735-7743.	1.6	26

#	Article	IF	Citations
127	Insights into the mechanisms controlling the residual corrosion rate of borosilicate glasses. Npj Materials Degradation, 2020, 4, .	2.6	26
128	Relaxor Ferroelectric Polymers: Insight into High Electrical Energy Storage Properties from a Molecular Perspective. Small Science, 2021, 1, 2000061.	5.8	26
129	Vapors in the ambientâ€"A complication in tribological studies or an engineering solution of tribological problems?. Friction, 2015, 3, 85-114.	3.4	25
130	Atomistic understanding of surface wear process of sodium silicate glass in dry versus humid environments. Journal of the American Ceramic Society, 2020, 103, 3060-3069.	1.9	25
131	Effects of mechanical stretching on average orientation of cellulose and pectin in onion epidermis cell wall: A polarized FT-IR study. Cellulose, 2017, 24, 3145-3154.	2.4	25
132	Correlation between <scp>IR</scp> peak position and bond parameter of silica glass: Molecular dynamics study on fictive temperature (cooling rate) effect. Journal of the American Ceramic Society, 2018, 101, 5419-5427.	1.9	24
133	Vibrational Sum Frequency Generation (SFG) Analysis of Ferroelectric Response of PVDF-Based Copolymer and Terpolymer. Macromolecules, 2017, 50, 2838-2844.	2.2	23
134	Inhomogeneity of Cellulose Microfibril Assembly in Plant Cell Walls Revealed with Sum Frequency Generation Microscopy. Journal of Physical Chemistry B, 2018, 122, 5006-5019.	1.2	23
135	Dependence of water adsorption on the surface structure of silicon wafers aged under different environmental conditions. Physical Chemistry Chemical Physics, 2019, 21, 26041-26048.	1.3	23
136	Empirical relationship between interfacial shear stress and contact pressure in micro- and macro-scale friction. Tribology International, 2021, 155, 106780.	3.0	23
137	Ionic Conductivity in Sodiumâ€"Alkaline Earthâ€"Aluminosilicate Glasses. Journal of the American Ceramic Society, 2016, 99, 1239-1247.	1.9	22
138	Dependence of Sum Frequency Generation (SFG) Spectral Features on the Mesoscale Arrangement of SFG-Active Crystalline Domains Interspersed in SFG-Inactive Matrix: A Case Study with Cellulose in Uniaxially Aligned Control Samples and Alkali-Treated Secondary Cell Walls of Plants. Journal of Physical Chemistry C, 2017, 121, 10249-10257.	1.5	22
139	Effect of glass composition on the hardness of surface layers on aluminosilicate glasses formed through reaction with strong acid. Journal of the American Ceramic Society, 2018, 101, 657-665.	1.9	22
140	Effect of water on topological constraints in silica glass. Scripta Materialia, 2019, 160, 48-52.	2.6	22
141	Experimental and Theoretical Study of Azimuth Angle and Polarization Dependences of Sum-Frequency-Generation Vibrational Spectral Features of Uniaxially Aligned Cellulose Crystals. Journal of Physical Chemistry C, 2017, 121, 18876-18886.	1.5	21
142	Hemicelluloseâ€"Cellulose Composites Reveal Differences in Cellulose Organization after Dilute Acid Pretreatment. Biomacromolecules, 2019, 20, 893-903.	2.6	21
143	Topological understanding of the mixed alkaline earth effect in glass. Journal of Non-Crystalline Solids, 2020, 527, 119696.	1.5	21
144	Interplay between solution chemistry and mechanical activation in friction-induced material removal of silicon surface in aqueous solution. Tribology International, 2020, 148, 106319.	3.0	21

#	Article	IF	Citations
145	Conductance and Configuration of Molecular Gold-Water-Gold Junctions under Electric Fields. Matter, 2020, 3, 166-179.	5.0	21
146	Water adsorption on silica and calciumâ€boroaluminosilicate glass surfacesâ€"Thickness and hydrogen bonding of water layer. Journal of the American Ceramic Society, 2021, 104, 1568-1580.	1.9	21
147	Influence of acid leaching surface treatment on indentation cracking of soda lime silicate glass. Journal of Non-Crystalline Solids, 2020, 543, 120144.	1.5	21
148	Effects of fictive temperature on the leaching of soda lime silica glass surfaces. Journal of the American Ceramic Society, 2017, 100, 1424-1431.	1.9	20
149	Relative abundance of subsurface hydroxyl and molecular water species in silicate and aluminosilicate glasses. Journal of Non-Crystalline Solids, 2019, 510, 179-185.	1.5	19
150	Maskless Fabrication of Nanowells Using Chemically Reactive Colloids. Nano Letters, 2011, 11, 672-676.	4.5	18
151	Origin of Ultra-Low Friction of Boric Acid: Role of Vapor Adsorption. Tribology Letters, 2015, 58, 1.	1.2	18
152	Effects of tempering and heat strengthening on hardness, indentation fracture resistance, and wear of soda lime float glass. International Journal of Applied Glass Science, 2019, 10, 431-440.	1.0	18
153	Chemical structure and mechanical properties of soda lime silica glass surfaces treated by thermal poling in inert and reactive ambient gases. Journal of the American Ceramic Society, 2018, 101, 2951-2964.	1.9	17
154	Magnetic field effects on cellulose nanocrystal ordering in a non-aqueous solvent. Cellulose, 2020, 27, 7901-7910.	2.4	17
155	Nanoasperity Adhesion of the Silicon Surface in Humid Air: The Roles of Surface Chemistry and Oxidized Layer Structures. Langmuir, 2020, 36, 5483-5491.	1.6	17
156	Synergy between surface mechanochemistry and subsurface dissolution on wear of soda lime silica glass in basic solution. Journal of the American Ceramic Society, 2021, 104, 428-436.	1.9	17
157	Corrected direct force balance method for atomic force microscopy lateral force calibration. Review of Scientific Instruments, 2009, 80, 066101.	0.6	16
158	Synthesis of polymeric lubricating films directly at the sliding interface via mechanochemical reactions of allyl alcohols adsorbed from the vapor phase. RSC Advances, 2014, 4, 26081-26086.	1.7	16
159	Differences in surface failure modes of soda lime silica glass under normal indentation versus tangential shear: A comparative study on Na⁺/K⁺â€ion exchange effects. Journal of the American Ceramic Society, 2019, 102, 1665-1676.	1.9	16
160	Origin of High Friction at Graphene Step Edges on Graphite. ACS Applied Materials & Interfaces, 2021, 13, 1895-1902.	4.0	16
161	Effects of Vapor Environment and Counter-Surface Chemistry on Tribochemical Wear of Silicon Wafers. Tribology Letters, 2014, 53, 365-372.	1.2	15
162	Rheological modifiers for petroleum cokeâ€"water slurry. Fuel Processing Technology, 2016, 144, 290-298.	3.7	15

#	Article	IF	Citations
163	Effect of Atomic Corrugation on Adhesion and Friction: A Model Study with Graphene Step Edges. Journal of Physical Chemistry Letters, 2019, 10, 6455-6461.	2.1	15
164	Near-field corrosion interactions between glass and corrosion resistant alloys. Npj Materials Degradation, 2020, 4, .	2.6	15
165	Effects of Al:Si and (AlÂ+ÂNa):Si ratios on the properties of the international simple glass, part I: Physical properties. Journal of the American Ceramic Society, 2021, 104, 167-182.	1.9	15
166	Differences in indentation and wear behaviors between the two sides of thermally tempered soda lime silica glass. Journal of the American Ceramic Society, 2021, 104, 4718-4727.	1.9	15
167	Indentation and abrasion in glass products: Lessons learned and yet to be learned. International Journal of Applied Glass Science, 2022, 13, 308-337.	1.0	15
168	Statistical mechanics of topological fluctuations in glass-forming liquids. Physica A: Statistical Mechanics and Its Applications, 2018, 510, 787-801.	1.2	14
169	Competitive Adsorption of Lubricant Base Oil and Ionic Liquid Additives at Air/Liquid and Solid/Liquid Interfaces. Langmuir, 2020, 36, 7582-7592.	1.6	14
170	Beyond the Average: Spatial and Temporal Fluctuations in Oxide Glass-Forming Systems. Chemical Reviews, 2023, 123, 1774-1840.	23.0	14
171	InÂvitro synthesis of cellulose microfibrils by a membrane protein from protoplasts of the non-vascular plant Physcomitrella patens. Biochemical Journal, 2015, 470, 195-205.	1.7	13
172	Mechanochemical Reactions of Adsorbates at Tribological Interfaces: Tribopolymerizations of Allyl Alcohol Coadsorbed with Water on Silicon Oxide. Langmuir, 2019, 35, 15451-15458.	1.6	13
173	Atomic Force Microscopy (AFM) Analysis of an Object Larger and Sharper than the AFM Tip. Microscopy and Microanalysis, 2019, 25, 1106-1111.	0.2	13
174	Distinguishing Mesoscale Polar Order (Unidirectional vs Bidirectional) of Cellulose Microfibrils in Plant Cell Walls Using Sum Frequency Generation Spectroscopy. Journal of Physical Chemistry B, 2020, 124, 8071-8081.	1.2	13
175	Improved Substrate Protection and Self-Healing of Boundary Lubrication Film Consisting of Polydimethylsiloxane with Cationic Side Groups. Tribology Letters, 2011, 41, 33-40.	1.2	12
176	Effects of Nanoscale Surface Texturing on Self-Healing of Boundary Lubricant Film via Lateral Flow. Tribology Letters, 2011, 44, 287-292.	1.2	12
177	Tailoring the wettability of glass using a double-dielectric barrier discharge reactor. Heliyon, 2018, 4, e00522.	1.4	12
178	Anisotropic Optical and Frictional Properties of Langmuirâ€“Blodgett Film Consisting of Uniaxiallyâ€Aligned Rodâ€Shaped Cellulose Nanocrystals. Advanced Materials Interfaces, 2020, 7, 1902169.	1.9	12
179	Network structure in alteration layer of boroaluminosilicate glass formed by aqueous corrosion. Journal of Non-Crystalline Solids, 2021, 553, 120494.	1.5	12
180	Oxidation-induced changes of mechanochemical reactions at GaAsâ€“SiO2 interface: The competitive roles of water adsorption, mechanical property, and oxidized structure. Applied Surface Science, 2021, 548, 149205.	3.1	12

#	Article	IF	Citations
181	Does cellulose II exist in native alga cell walls? Cellulose structure of Derbesia cell walls studied with SFG, IR and XRD. Cellulose, 2015, 22, 3531-3540.	2.4	11
182	Correlation between crystalline cellulose structure and cellulose synthase complex shape: a spectroscopic study with unicellular freshwater alga Micrasterias. Cellulose, 2020, 27, 57-69.	2.4	11
183	Measuring nanoscale friction at graphene step edges. Friction, 2020, 8, 802-811.	3.4	11
184	Reactive molecular dynamics simulations of thermal and shear-driven oligomerization. Applied Surface Science, 2022, 591, 153209.	3.1	11
185	Humidity Effects on In Situ Vapor Phase Lubrication with n-Pentanol. Tribology Letters, 2014, 55, 177-186.	1.2	10
186	Compression-Induced Topographic Corrugation of Air/Surfactant/Water Interface: Effect of Nanoparticles Adsorbed beneath the Interface. Journal of Physical Chemistry C, 2019, 123, 25628-25634.	1.5	10
187	Effect of Ambient Chemistry on Friction at the Basal Plane of Graphite. ACS Applied Materials & Interfaces, 2019, 11, 40800-40807.	4.0	10
188	Effects of acid leaching treatment of sodaâ€lime silicate glass on crack initiation and fracture. Journal of the American Ceramic Society, 2021, 104, 4550-4558.	1.9	10
189	Inverse Relationship between Thickness and Wear of Fluorinated Graphene: â€œThinner Is Betterâ€. Nano Letters, 0, , .	4.5	10
190	Dissolution of silica component of glass network at early stage of corrosion in initially silicaâ€saturated solution. Journal of the American Ceramic Society, 2019, 102, 6649-6657.	1.9	9
191	Environmental effects on superlubricity of hydrogenated diamond-like carbon: Understanding tribochemical kinetics in O2 and H2O environments. Applied Surface Science, 2022, 580, 152299.	3.1	9
192	Fundamental Understanding of Environmental Effects on Adhesion and Friction: Alcohol and Water Adsorption Cases. Tribology Letters, 2013, 50, 157-168.	1.2	8
193	Effect of Gas Environment on Mechanochemical Reaction: A Model Study with Tribo-Polymerization of Î±-Pinene in Inert, Oxidative, and Reductive Gases. Tribology Letters, 2019, 67, 1.	1.2	8
194	Competitive Adsorption of Ionic Liquids Versus Friction Modifier and Anti-Wear Additive at Solid/Lubricant Interfaceâ€”Speciation with Vibrational Sum Frequency Generation Spectroscopy. Lubricants, 2020, 8, 98.	1.2	8
195	Chemical durability of borosilicate pharmaceutical glasses: Mixed alkaline earth effect with varying [MgO]/[CaO] ratio. Journal of the American Ceramic Society, 2021, 104, 3973-3981.	1.9	8
196	Vanadium Oxidation States and Structural Role in Aluminoborosilicate Glasses: An Integrated Experimental and Molecular Dynamics Simulation Study. Journal of Physical Chemistry B, 2021, 125, 12365-12377.	1.2	8
197	Photothermal Atomic Force Microscopy Coupled with Infrared Spectroscopy (AFM-IR) Analysis of High Extinction Coefficient Materials: A Case Study with Silica and Silicate Glasses. Analytical Chemistry, 2022, 94, 5231-5239.	3.2	8
198	Factors governing wear of soda lime silicate glass: Insights from comparison between nano- and macro-scale wear. Tribology International, 2022, 171, 107566.	3.0	8

#	Article	IF	Citations
199	Analyzing Periodic Signals in Rotating Pin-on-Disc Tribotest Measurements Using Discrete Fourier Transform Algorithm. Tribology Letters, 2009, 35, 141-147.	1.2	7
200	Enhanced tribological properties of barium boroaluminosilicate glass by thermal poling. Wear, 2017, 376-377, 337-342.	1.5	7
201	Reply to: How much does corrosion of nuclear waste matrices matter. Nature Materials, 2020, 19, 962-963.	13.3	7
202	Shear-induced unidirectional deposition of bacterial cellulose microfibrils using rising bubble stream cultivation. Carbohydrate Polymers, 2021, 255, 117328.	5.1	7
203	Vibrational sum frequency generation (SFG) spectroscopic study of crystalline cellulose in biomass. , 2013, , .		6
204	Identifying Physical and Chemical Contributions to Friction: A Comparative Study of Chemically Inert and Active Graphene Step Edges. ACS Applied Materials & Interfaces, 2020, 12, 30007-30015.	4.0	6
205	Phenotypic effects of changes in the FTVTxK region of an Arabidopsis secondary wall cellulose synthase compared with results from analogous mutations in other isoforms. Plant Direct, 2021, 5, e335.	0.8	6
206	Statistical Mechanical Model of Topological Fluctuations and the Intermediate Phase in Binary Phosphate Glasses. Journal of Physical Chemistry B, 2019, 123, 7640-7648.	1.2	5
207	Topological Control of Water Reactivity on Glass Surfaces: Evidence of a Chemically Stable Intermediate Phase. Journal of Physical Chemistry Letters, 2019, 10, 3955-3960.	2.1	5
208	Characterization of the Lipid Structure and Fluidity of Lipid Membranes on Epitaxial Graphene and Their Correlation to Graphene Features. Langmuir, 2019, 35, 4726-4735.	1.6	5
209	Flexural stress effect on mechanical and mechanochemical properties of soda lime silicate glass surface. Journal of the American Ceramic Society, 2022, 105, 2847-2857.	1.9	5
210	Vibrational sum frequency generation digital holography. Applied Physics Letters, 2017, 110, 251601.	1.5	4
211	Impact of Drying on Meso- and Nanoscale Structures of Citrus Fiber: A Study by SFG, ATR-IR, XRD, and DLS. Industrial & Engineering Chemistry Research, 2020, 59, 2718-2724.	1.8	4
212	Electric Field-Induced Polarization Responses of Noncentrosymmetric Crystalline Biopolymers in Different Frequency Regimes â€“ A Case Study on Unidirectionally Aligned Î²-Chitin Crystals. Biomacromolecules, 2021, 22, 1901-1909.	2.6	4
213	Effect of humidity on friction, wear, and plastic deformation during nanoscratch of soda lime silica glass. Journal of the American Ceramic Society, 2022, 105, 1367-1374.	1.9	4
214	From a cholesteric non-aqueous cellulose nanocrystal suspension to a highly ordered film. MRS Advances, 2020, 5, 3547-3554.	0.5	3
215	Enzyme-Nanofiber Composites for Biocatalysis Applications. ACS Symposium Series, 2008, , 254-262.	0.5	2
216	Silane Treatment of Diamond-Like Carbon: Improvement of Hydrophobicity, Oleophobicity, and Humidity Tolerance of Friction. Tribology Letters, 2016, 63, 1.	1.2	2

#	Article	IF	Citations
217	Friction of diamond-like carbon: Run-in behavior and environment effects on superlubricity. , 2021, , 275-288.		2
218	Estimating Internal Stress of an Alteration Layer Formed on Corroded Boroaluminosilicate Glass through Spectroscopic Ellipsometry Analysis. ACS Applied Materials & Interfaces, 2021, 13, 50470-50480.	4.0	2
219	Impact of aqueous solution pH on network structure of corrosionâ€induced surface layers of boroaluminosilicate glass. Journal of the American Ceramic Society, 2022, 105, 6581-6592.	1.9	2
220	Scanning Atmospheric Plasma Processes for Surface Decontamination and Superhydrophobic Deposition. ACS Symposium Series, 2009, , 323-336.	0.5	1
221	Back Cover: Macromol. Rapid Commun. 20/2005. Macromolecular Rapid Communications, 2005, 26, 1668-1668.	2.0	0
222	Plasma Surface Functionalization of Poly[bis(2,2,2-trifluoroethoxy)phosphazene]. Materials Research Society Symposia Proceedings, 2006, 951, 41.	0.1	0
223	Sustainable Biocatalytic Nanofibers: Synthesis, Characterization, and Applications of Enzyme-Coated Polymeric Nanofibers. ACS Symposium Series, 2008, , 129-143.	0.5	0
224	Preface to the Molecular Surface Chemistry and Its Applications Special Issue. Langmuir, 2010, 26, 16187-16189.	1.6	0
225	Molecular Surface Science, Nanomaterials & Catalysis: Symposium in Honor of Gabor Somorjai at 80. Topics in Catalysis, 2018, 61, 711-713.	1.3	0
226	Tailoring and Characterization of the Liquid Crystalline Structure of Cellulose Nanocrystals for Opto-Electro-Mechanical Multifunctional Applications. , 2018, , .		0
227	Integrating Density Functional Theory Calculations with Vibrational and Nuclear Magnetic Resonance Spectroscopy. ACS Symposium Series, 2019, , 89-102.	0.5	0
228	Long-term interactive corrosion between International Simple Glass and stainless steel. Npj Materials Degradation, 2022, 6, .	2.6	0