Ellen Backus

List of Publications by Year
in descending order

91 papers	3,889 citations	101384 36 h-index	138251 58 g-index
95 all docs	95 docs citations	95 times ranked	3152 citing authors

#	Article	IF	Citations
1	Liquid flow along a solid surface reversibly alters interfacial chemistry. Science, 2014, 344, 1138-1142.	6.0	187
2	Water at charged interfaces. Nature Reviews Chemistry, 2021, 5, 466-485.	13.8	186
3	Ice-nucleating bacteria control the order and dynamics of interfacial water. Science Advances, 2016, 2, e1501630.	4.7	182
4	Molecular Structure and Dynamics of Water at the Waterâ€“Air Interface Studied with Surfaceâ€Specific Vibrational Spectroscopy. Angewandte Chemie - International Edition, 2015, 54, 5560-5576.	7.2	132
5	Experimental and theoretical evidence for bilayer-by-bilayer surface melting of crystalline ice. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 227-232.	3.3	131
6	Molecular hydrophobicity at a macroscopically hydrophilic surface. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 1520-1525.	3.3	109
7	Aqueous Heterogeneity at the Air/Water Interface Revealed by 2Dâ€HDâ€SFG Spectroscopy. Angewandte Chemie - International Edition, 2014, 53, 8146-8149.	7.2	106
8	Water orientation and hydrogen-bond structure at the fluorite/water interface. Scientific Reports, 2016, 6, 24287.	1.6	101
9	Both Inter- and Intramolecular Coupling of Oâ€“H Groups Determine the Vibrational Response of the Water/Air Interface. Journal of Physical Chemistry Letters, 2016, 7, 4591-4595.	2.1	101
10	Water Bending Mode at the Waterâ€“Vapor Interface Probed by Sum-Frequency Generation Spectroscopy: A Combined Molecular Dynamics Simulation and Experimental Study. Journal of Physical Chemistry Letters, 2013, 4, 1872-1877.	2.1	100
11	Molecular Structure and Modeling of Waterâ€“Air and Iceâ€“Air Interfaces Monitored by Sum-Frequency Generation. Chemical Reviews, 2020, 120, 3633-3667.	23.0	97
12	Surface-specific vibrational spectroscopy of the water/silica interface: screening and interference. Physical Chemistry Chemical Physics, 2017, 19, 16875-16880.	1.3	91
13	Chemisorbed and Physisorbed Water at the TiO₂/Water Interface. Journal of Physical Chemistry Letters, 2017, 8, 2195-2199.	2.1	89
14	Determining In Situ Protein Conformation and Orientation from the Amide-I Sum-Frequency Generation Spectrum: Theory and Experiment. Journal of Physical Chemistry A, 2013, 117, 6311-6322.	1.1	81
15	Dynamic Surface Tension of Surfactants in the Presence of High Salt Concentrations. Langmuir, 2020, 36, 7956-7964.	1.6	81
16	Nuclear Quantum Effects Affect Bond Orientation of Water at the Water-Vapor Interface. Physical Review Letters, 2012, 109, 226101.	2.9	79
17	Mechanism of vibrational energy dissipation of free OH groups at the airâ€“water interface. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 18780-18785.	3.3	77
18	Saturation of charge-induced water alignment at model membrane surfaces. Science Advances, 2018, 4, eaap7415.	4.7	76

#	Article	IF	Citations
19	Lipid Carbonyl Groups Terminate the Hydrogen Bond Network of Membrane-Bound Water. Journal of Physical Chemistry Letters, 2015, 6, 4499-4503.	2.1	74
20	Comparative Study of Direct and Phase-Specific Vibrational Sum-Frequency Generation Spectroscopy: Advantages and Limitations. Journal of Physical Chemistry B, 2011, 115, 15362-15369.	1.2	73
21	Influence of Surfactants on Sodium Chloride Crystallization in Confinement. Langmuir, 2017, 33, 4260-4268.	1.6	69
22	On the Role of Fresnel Factors in Sum-Frequency Generation Spectroscopy of Metalâ€“Water and Metal-Oxideâ€“Water Interfaces. Journal of Physical Chemistry C, 2012, 116, 23351-23361.	1.5	65
23	Molecular Insight into the Slipperiness of Ice. Journal of Physical Chemistry Letters, 2018, 9, 2838-2842.	2.1	63
24	Laser-Heating-Induced Displacement of Surfactants on the Water Surface. Journal of Physical Chemistry B, 2012, 116, 2703-2712.	1.2	60
25	The surface roughness, but not the water molecular orientation varies with temperature at the waterâ€“air interface. Physical Chemistry Chemical Physics, 2015, 17, 23559-23564.	1.3	60
26	Two Types of Water at the Waterâ€“Surfactant Interface Revealed by Time-Resolved Vibrational Spectroscopy. Journal of the American Chemical Society, 2015, 137, 14912-14919.	6.6	58
27	The Surface of Ice under Equilibrium and Nonequilibrium Conditions. Accounts of Chemical Research, 2019, 52, 1006-1015.	7.6	57
28	Probing the Mineralâ€“Water Interface with Nonlinear Optical Spectroscopy. Angewandte Chemie - International Edition, 2021, 60, 10482-10501.	7.2	56
29	Observation and Identification of a New OH Stretch Vibrational Band at the Surface of Ice. Journal of Physical Chemistry Letters, 2017, 8, 3656-3660.	2.1	53
30	Surface-charge-induced orientation of interfacial water suppresses heterogeneous ice nucleation on <i>Î±</i>-alumina (0001). Atmospheric Chemistry and Physics, 2017, 17, 7827-7837.	1.9	52
31	Orientational Distribution of Free O-H Groups of Interfacial Water is Exponential. Physical Review Letters, 2018, 121, 246101.	2.9	49
32	Structure from Dynamics: Vibrational Dynamics of Interfacial Water as a Probe of Aqueous Heterogeneity. Journal of Physical Chemistry B, 2018, 122, 3667-3679.	1.2	47
33	Excess Hydrogen Bond at the Ice-Vapor Interface around 200ÂK. Physical Review Letters, 2017, 119, 133003.	2.9	45
34	Surface Potential of a Planar Charged Lipidâ€“Water Interface. What Do Vibrating Plate Methods, Second Harmonic and Sum Frequency Measure?. Journal of Physical Chemistry Letters, 2018, 9, 5685-5691.	2.1	44
35	Nature of Excess Hydrated Proton at the Waterâ€“Air Interface. Journal of the American Chemical Society, 2020, 142, 945-952.	6.6	41
36	Molecular Modeling of Water Interfaces: From Molecular Spectroscopy to Thermodynamics. Journal of Physical Chemistry B, 2016, 120, 3785-3796.	1.2	39

#	Article	IF	Citations
37	Trimethylamine-<i>N</i>-oxide: its hydration structure, surface activity, and biological function, viewed by vibrational spectroscopy and molecular dynamics simulations. Physical Chemistry Chemical Physics, 2017, 19, 6909-6920.	1.3	39
38	Unveiling Heterogeneity of Interfacial Water through the Water Bending Mode. Journal of Physical Chemistry Letters, 2019, 10, 6936-6941.	2.1	38
39	Molecular Dynamics Simulations of SFG Librational Modes Spectra of Water at the Waterâ€"Air Interface. Journal of Physical Chemistry C, 2016, 120, 18665-18673.	1.5	34
40	Evidence for auto-catalytic mineral dissolution from surface-specific vibrational spectroscopy. Nature Communications, 2018, 9, 3316.	5.8	34
41	Unveiling the Amphiphilic Nature of TMAO by Vibrational Sum Frequency Generation Spectroscopy. Journal of Physical Chemistry C, 2016, 120, 17435-17443.	1.5	33
42	Hydration and Orientation of Carbonyl Groups in Oppositely Charged Lipid Monolayers on Water. Journal of Physical Chemistry B, 2019, 123, 1085-1089.	1.2	33
43	Oppositely Charged Ions at Waterâ€"Air and Waterâ€"Oil Interfaces: Contrasting the Molecular Picture with Thermodynamics. Journal of Physical Chemistry Letters, 2016, 7, 825-830.	2.1	29
44	Surface-Specific Spectroscopy of Water at a Potentiostatically Controlled Supported Graphene Monolayer. Journal of Physical Chemistry C, 2019, 123, 24031-24038.	1.5	29
45	The Surface Activity of the Hydrated Proton Is Substantially Higher than That of the Hydroxide Ion. Angewandte Chemie - International Edition, 2019, 58, 15636-15639.	7.2	28
46	Ultrafast Reorientational Dynamics of Leucine at the Airâ€"Water Interface. Journal of the American Chemical Society, 2016, 138, 5226-5229.	6.6	26
47	Water in Contact with a Cationic Lipid Exhibits Bulklike Vibrational Dynamics. Journal of Physical Chemistry B, 2016, 120, 10069-10078.	1.2	26
48	Use of Ion Exchange To Regulate the Heterogeneous Ice Nucleation Efficiency of Mica. Journal of the American Chemical Society, 2020, 142, 17956-17965.	6.6	26
49	Reduced Near-Resonant Vibrational Coupling at the Surfaces of Liquid Water and Ice. Journal of Physical Chemistry Letters, 2018, 9, 1290-1294.	2.1	21
50	Correlating the secondary protein structure of natural spider silk with its guiding properties for Schwann cells. Materials Science and Engineering C, 2020, 116, 111219.	3.8	21
51	Fast Light-Driven Motion of Polydopamine Nanomembranes. Nano Letters, 2022, 22, 578-585.	4.5	21
52	Conical Ionic Amphiphiles Endowed with Micellization Ability but Lacking Airâ€"Water and Oilâ€"Water Interfacial Activity. Journal of the American Chemical Society, 2017, 139, 7677-7680.	6.6	19
53	Time-Resolved Sum Frequency Generation Spectroscopy: A Quantitative Comparison Between Intensity and Phase-Resolved Spectroscopy. Journal of Physical Chemistry A, 2018, 122, 2401-2410.	1.1	19
54	Counteracting Interfacial Energetics for Wetting of Hydrophobic Surfaces in the Presence of Surfactants. Langmuir, 2018, 34, 12344-12349.	1.6	19

#	Article	IF	Citations
55	How surface-specific is 2nd-order non-linear spectroscopy?. Journal of Chemical Physics, 2019, 151, 230901.	1.2	19
56	Liquid flow reversibly creates a macroscopic surface charge gradient. Nature Communications, 2021, 12, 4102.	5.8	19
57	Unraveling the Origin of the Apparent Charge of Zwitterionic Lipid Layers. Journal of Physical Chemistry Letters, 2019, 10, 6355-6359.	2.1	17
58	High-Performance Humidity Sensing in Ï€-Conjugated Molecular Assemblies through the Engineering of Electron/Proton Transport and Device Interfaces. Journal of the American Chemical Society, 2022, 144, 2546-2555.	6.6	17
59	Interaction of a Patterned Amphiphilic Polyphenylene Dendrimer with a Lipid Monolayer: Electrostatic Interactions Dominate. Langmuir, 2015, 31, 1980-1987.	1.6	16
60	Water Orientation at the Calcite-Water Interface. Journal of Physical Chemistry Letters, 2021, 12, 7605-7611.	2.1	16
61	Phase-Sensitive Sum-Frequency Generation Measurements Using a Femtosecond Nonlinear Interferometer. Journal of Physical Chemistry C, 2019, 123, 7266-7270.	1.5	15
62	Interfacial Water Ordering Is Insufficient to Explain Ice-Nucleating Protein Activity. Journal of Physical Chemistry Letters, 2021, 12, 218-223.	2.1	15
63	Probing ultrafast temperature changes of aqueous solutions with coherent terahertz pulses. Optics Letters, 2014, 39, 1717.	1.7	14
64	Surface Charges at the CaF₂/Water Interface Allow Very Fast Intermolecular Vibrationalâ€Energy Transfer. Angewandte Chemie - International Edition, 2020, 59, 13116-13121.	7.2	14
65	Synthesis at the Airâ€"Water Interface of a Two-Dimensional Semi-Interpenetrating Network Based on Poly(dimethylsiloxane) and Cellulose Acetate Butyrate. Langmuir, 2014, 30, 11919-11927.	1.6	13
66	The surface affinity of cations depends on both the cations and the nature of the surface. Journal of Chemical Physics, 2019, 150, 044706.	1.2	13
67	How water flips at charged titanium dioxide: an SFG-study on the waterâ€"TiO₂ interface. Physical Chemistry Chemical Physics, 2019, 21, 8956-8964.	1.3	13
68	Sum-Frequency Generation Spectroscopy of Cinnamate Modified Cellulosic Polymer at the Airâ€"Water Interface. Journal of Physical Chemistry B, 2012, 116, 6041-6049.	1.2	12
69	Single-crystal <i>I</i> _{<i>h</i>} ice surfaces unveil connection between macroscopic and molecular structure. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 5349-5354.	3.3	12
70	Interfacial Vibrational Dynamics of Ice I_h and Liquid Water. Journal of the American Chemical Society, 2020, 142, 12005-12009.	6.6	11
71	Decoding the molecular water structure at complex interfaces through surface-specific spectroscopy of the water bending mode. Physical Chemistry Chemical Physics, 2020, 22, 10934-10940.	1.3	11
72	Ice Nucleation at the Waterâ€"Sapphire Interface: Transient Sum-Frequency Response without Evidence for Transient Ice Phase. Journal of Physical Chemistry C, 2018, 122, 24760-24764.	1.5	10

#	Article	IF	Citations
73	The role of structural order in heterogeneous ice nucleation. Chemical Science, 2022, 13, 5014-5026.	3.7	10
74	Comparative Adsorption of Acetone on Water and Ice Surfaces. Angewandte Chemie - International Edition, 2019, 58, 3620-3624.	7.2	9
75	Electrolytes Change the Interfacial Water Structure but Not the Vibrational Dynamics. Journal of Physical Chemistry B, 2019, 123, 8610-8616.	1.2	8
76	Distinguishing different excitation pathways in two-dimensional terahertz-infrared-visible spectroscopy. Journal of Chemical Physics, 2021, 154, 174201.	1.2	8
77	Interfacial Water Structure of Binary Liquid Mixtures Reflects Nonideal Behavior. Journal of Physical Chemistry B, 2021, 125, 10639-10646.	1.2	8
78	Lower degree of dissociation of pyruvic acid at water surfaces than in bulk. Physical Chemistry Chemical Physics, 2022, 24, 13510-13513.	1.3	8
79	Orientation independent vibrational dynamics of lipid-bound interfacial water. Physical Chemistry Chemical Physics, 2020, 22, 10142-10148.	1.3	7
80	Antisurfactant (Autophobic) Behavior of Superspreader Surfactant Solutions. Langmuir, 2021, 37, 6243-6247.	1.6	7
81	Poly(ethylene glycol)-<i>block</i>-poly(propylene glycol)-<i>block</i>-poly(ethylene glycol) Copolymer 2D Single Network at the Airâ€“Water Interface. Langmuir, 2020, 36, 9142-9152.	1.6	6
82	Confinement and Cross-Linking of 1,2-Polybutadiene in Two Dimensions at the Airâ€“Water Interface. Langmuir, 2020, 36, 862-871.	1.6	5
83	Interfacial Vibrational Spectroscopy of the Water Bending Mode on Ice <i>I_h</i>. Journal of Physical Chemistry C, 2021, 125, 22937-22942.	1.5	4
84	Untersuchung der Mineralâ€Wasserâ€Grenzschicht mit nichtâ€linearer optischer Spektroskopie. Angewandte Chemie, 2021, 133, 10574-10595.	1.6	3
85	Passively Stabilized Phase-Resolved Collinear SFG Spectroscopy Using a Displaced Sagnac Interferometer. Journal of Physical Chemistry A, 2022, 126, 951-956.	1.1	3
86	Vertically Heterogeneous 2D Semi-Interpenetrating Networks Based on Cellulose Acetate and Cross-Linked Polybutadiene. Langmuir, 2022, 38, 2538-2549.	1.6	3
87	OberflÃchenladungen an der CaF 2 â€Wasserâ€GrenzflÃche erlauben eine sehr schnelle intermolekulare Ãœbertragung von Schwingungsenergie. Angewandte Chemie, 2020, 132, 13217-13222.	1.6	2
88	Adaptation and Recovery of a Styreneâ€Acrylic Acid Copolymer Surface to Water. Macromolecular Rapid Communications, 2022, , 2100733.	2.0	2
89	Das hydratisierte Proton besitzt eine deutlich hÃ¶here OberflÃchenaktivitÃt als das Hydroxidion. Angewandte Chemie, 2019, 131, 15783-15786.	1.6	1
90	Sun <i>etÂal.</i> Reply:. Physical Review Letters, 2019, 123, 099602.	2.9	1

#	Article	IF	Citations
91	Vergleichende Acetonadsorption an Wasserâ€•und EisoberflÃchen. Angewandte Chemie, 2019, 131, 3659-3663.	1.6	0