Sylvie Roke

List of Publications by Year
in descending order

115 papers	5,097 citations	87888 38 h-index	95266 68 g-index
119 all docs	119 docs citations	119 times ranked	4138 citing authors

#	Article	IF	Citations
1	Protons and Hydroxide Ions in Aqueous Systems. Chemical Reviews, 2016, 116, 7642-7672.	47.7	358
2	Second Harmonic and Sum-Frequency Generation from Aqueous Interfaces Is Modulated by Interference. Journal of Physical Chemistry C, 2016, 120, 9165-9173.	3.1	249
3	The Orientation and Charge of Water at the Hydrophobic Oil Dropletâ€“Water Interface. Journal of the American Chemical Society, 2011, 133, 10204-10210.	13.7	213
4	Nonlinear Light Scattering and Spectroscopy of Particles and Droplets in Liquids. Annual Review of Physical Chemistry, 2012, 63, 353-378.	10.8	208
5	Water-Mediated Ion Pairing: Occurrence and Relevance. Chemical Reviews, 2016, 116, 7626-7641.	47.7	195
6	Vibrational Spectroscopic Investigation of the Phase Diagram of a Biomimetic Lipid Monolayer. Physical Review Letters, 2003, 90, 128101.	7.8	159
7	Electrolytes induce long-range orientational order and free energy changes in the H-bond network of bulk water. Science Advances, 2016, 2, e1501891.	10.3	151
8	Nonlinear optical scattering: The concept of effective susceptibility. Physical Review B, 2004, 70, .	3.2	150
9	Vibrational Sum Frequency Scattering from a Submicron Suspension. Physical Review Letters, 2003, 91, 258302.	7.8	135
10	Nonlinear Mie theory for second-harmonic and sum-frequency scattering. Physical Review B, 2009, 79, .	3.2	121
11	Surface Structure of Sodium Dodecyl Sulfate Surfactant and Oil at the Oil-in-Water Droplet Liquid/Liquid Interface: A Manifestation of a Nonequilibrium Surface State. Journal of Physical Chemistry B, 2011, 115, 2970-2978.	2.6	121
12	The Interfacial Tension of Nanoscopic Oil Droplets in Water Is Hardly Affected by SDS Surfactant. Journal of the American Chemical Society, 2010, 132, 2122-2123.	13.7	113
13	Luminescence of Exchange Coupled Pairs of Transition Metal Ions. Journal of the Electrochemical Society, 2001, 148, E313.	2.9	112
14	A Molecular View of Cholesterol-Induced Condensation in a Lipid Monolayer. Journal of Physical Chemistry B, 2004, 108, 19083-19085.	2.6	95
15	Optical imaging of surface chemistry and dynamics in confinement. Science, 2017, 357, 784-788.	12.6	89
16	Charge transfer across Câ€“Hâ‹…â‹…â‹…O hydrogen bonds stabilizes oil droplets in water. Science, 2021, 374, 1366-1370.	12.6	88
17	Specific Ion Effects in Amphiphile Hydration and Interface Stabilization. Journal of the American Chemical Society, 2014, 136, 2040-2047.	13.7	85
18	Charge Asymmetry at Aqueous Hydrophobic Interfaces and Hydration Shells. Angewandte Chemie - International Edition, 2014, 53, 9560-9563.	13.8	79

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19	Obtaining molecular orientation from second harmonic and sum frequency scattering experiments in water: Angular distribution and polarization dependence. Journal of Chemical Physics, 2010, 132, 234702.	3.0	78
20	Nonlinear Optical Spectroscopy of Soft Matter Interfaces. ChemPhysChem, 2009, 10, 1380-1388.	2.1	69
21	Separating surface structure and surface charge with second-harmonic and sum-frequency scattering. Physical Review B, 2010, 82, .	3.2	67
22	Sum frequency generation scattering from the interface of an isotropic particle: Geometrical and chiral effects. Physical Review B, 2007, 75, .	3.2	66
23	Time- vs. frequency-domain femtosecond surface sum frequency generation. Chemical Physics Letters, 2003, 370, 227-232.	2.6	64
24	Theory of optical second-harmonic and sum-frequency scattering from arbitrarily shaped particles. Journal of the Optical Society of America B: Optical Physics, 2011, 28, 1374.	2.1	60
25	Laser-Heating-Induced Displacement of Surfactants on the Water Surface. Journal of Physical Chemistry B, 2012, 116, 2703-2712.	2.6	60
26	Optical label-free and model-free probe of the surface potential of nanoscale and microscopic objects in aqueous solution. Physical Review B, 2016, 94, .	3.2	59
27	Direct comparison of phase-sensitive vibrational sum frequency generation with maximum entropy method: Case study of water. Journal of Chemical Physics, 2011, 135, 224701.	3.0	58
28	Surface molecular view of colloidal gelation. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 13310-13314.	7.1	57
29	The interfacial structure of water droplets in a hydrophobic liquid. Nature Communications, 2017, 8, 15548.	12.8	56
30	Label-free second harmonic and hyper Rayleigh scattering with high efficiency. Optics Express, 2013, 21, 815.	3.4	54
31	Molecular Mechanism for the Interactions of Hofmeister Cations with Macromolecules in Aqueous Solution. Journal of the American Chemical Society, 2020, 142, 19094-19100.	13.7	53
32	Sum frequency spectroscopy of the hydrophobic nanodroplet/water interface: Absence of hydroxyl ion and dangling OH bond signatures. Chemical Physics Letters, 2014, 615, 124-131.	2.6	49
33	Intermolecular Headgroup Interaction and Hydration as Driving Forces for Lipid Transmembrane Asymmetry. Journal of the American Chemical Society, 2016, 138, 4053-4060.	13.7	48
34	The Molecular Mechanism of Nanodroplet Stability. ACS Nano, 2017, 11, 12111-12120.	14.6	46
35	High throughput second harmonic imaging for label-free biological applications. Optics Express, 2014, 22, 31102.	3.4	43
36	Characterization of the interface of binary mixed DOPC:DOPS liposomes in water: The impact of charge condensation. Journal of Chemical Physics, 2017, 146, 044701.	3.0	42

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37	Comparison of scattering and reflection SFG: a question of phase-matching. Physical Chemistry Chemical Physics, 2012, 14, 6826.	2.8	40
38	Nonlinear light scattering from clusters and single particles. Journal of Chemical Physics, 2009, 130, 214710.	3.0	39
39	Surface Impurities Are Not Responsible For the Charge on the Oil/Water Interface: A Comment. Angewandte Chemie - International Edition, 2012, 51, 12938-12940.	13.8	39
40	Chemistry of Lipid Membranes from Models to Living Systems: A Perspective of Hydration, Surface Potential, Curvature, Confinement and Heterogeneity. Journal of the American Chemical Society, 2019, 141, 12168-12181.	13.7	39
41	Generation and application of high power femtosecond pulses in the vibrational fingerprint region. Applied Physics B: Lasers and Optics, 2008, 91, 315-318.	2.2	38
42	Three Dimensional Nano â€œLangmuir Troughâ€•for Lipid Studies. Nano Letters, 2015, 15, 5558-5563.	9.1	38
43	Label-free and charge-sensitive dynamic imaging of lipid membrane hydration on millisecond time scales. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, 4081-4086.	7.1	38
44	Detection of Buried Microstructures by Nonlinear Light Scattering Spectroscopy. Physical Review Letters, 2009, 102, 095502.	7.8	36
45	Stern Layer Formation Induced by Hydrophobic Interactions: A Molecular Level Study. Journal of the American Chemical Society, 2013, 135, 19330-19335.	13.7	36
46	The Jones-Ray effect reinterpreted: Surface tension minima of low ionic strength electrolyte solutions are caused by electric field induced water-water correlations. Chemical Physics Letters, 2017, 684, 433-442.	2.6	36
47	Surface Characterization of Colloidal Silica Nanoparticles by Second Harmonic Scattering: Quantifying the Surface Potential and Interfacial Water Order. Journal of Physical Chemistry C, 2019, 123, 20393-20404.	3.1	36
48	From Hydrophobic to Hydrophilic: The Structure and Density of the Hexadecane Droplet/Alkanol/Water Interface. Journal of Physical Chemistry C, 2015, 119, 17725-17734.	3.1	35
49	Orientational ordering of water in extended hydration shells of cations is ion-specific and is correlated directly with viscosity and hydration free energy. Physical Chemistry Chemical Physics, 2017, 19, 24678-24688.	2.8	32
50	Interfaceâ€“solvent effects during colloidal phase transitions. Journal of Physics Condensed Matter, 2005, 17, S3469-S3479.	1.8	31
51	Sodium Dodecyl Sulfate at Waterâ€“Hydrophobic Interfaces: A Simulation Study. Journal of Physical Chemistry B, 2012, 116, 11936-11942.	2.6	31
52	Probing Rotational and Translational Diffusion of Nanodoublers in Living Cells on Microsecond Time Scales. Nano Letters, 2014, 14, 2552-2557.	9.1	29
53	Probing nanoscopic droplet interfaces in aqueous solution with vibrational sum-frequency scattering: A study of the effects of path length, droplet density and pulse energy. Chemical Physics Letters, 2011, 512, 76-80.	2.6	28
54	Solvent fluctuations and nuclear quantum effects modulate the molecular hyperpolarizability of water. Physical Review B, 2017, 96, .	3.2	28

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55	Membrane water for probing neuronal membrane potentials and ionic fluxes at the single cell level. Nature Communications, 2018, 9, 5287.	12.8	27
56	Wide-field medium-repetition-rate multiphoton microscopy reduces photodamage of living cells. Biomedical Optics Express, 2016, 7, 1458.	2.9	26
57	Femtosecond sum frequency generation at the metalâ€“liquid interface. Surface Science, 2005, 593, 79-88.	1.9	25
58	Label-free spectroscopic detection of vesicles in water using vibrational sum frequency scattering. Soft Matter, 2011, 7, 4959.	2.7	25
59	Second-Harmonic Scattering as a Probe of Structural Correlations in Liquids. Journal of Physical Chemistry Letters, 2016, 7, 4311-4316.	4.6	25
60	Surface Potential and Interfacial Water Order at the Amorphous TiO₂Nanoparticle/Aqueous Interface. Journal of Physical Chemistry C, 2020, 124, 10961-10974.	3.1	25
61	Vesicle Photonics. Annual Review of Materials Research, 2013, 43, 283-305.	9.3	23
62	Communication: Mean-field theory of water-water correlations in electrolyte solutions. Journal of Chemical Physics, 2017, 146, .	3.0	22
63	Surface and bulk structure of poly-(lactic acid) films studied by vibrational sum frequency generation spectroscopy. Chemical Physics Letters, 2007, 449, 191-195.	2.6	21
64	Ultrafast Surface Dynamics Studied with Femtosecond Sum Frequency Generation. Journal of Physical Chemistry A, 2001, 105, 1683-1686.	2.5	20
65	The interfacial structure of nano- and micron-sized oil and water droplets stabilized with SDS and Span80. Journal of Chemical Physics, 2019, 150, 204704.	3.0	20
66	Polyelectrolytes induce water-water correlations that result in dramatic viscosity changes and nuclear quantum effects. Science Advances, 2019, 5, eaay1443.	10.3	20
67	Imaging the Heterogeneity of the Oxygen Evolution Reaction on Gold Electrodes Operando: Activity is Highly Local. ACS Catalysis, 2020, 10, 6084-6093.	11.2	20
68	Polycation Interactions with Zwitterionic Phospholipid Monolayers on Oil Nanodroplet Suspensions in Water (D₂O) Probed by Sum Frequency Scattering. Journal of Physical Chemistry B, 2018, 122, 5049-5056.	2.6	19
69	Analysis of Complex Spectra Using Fourier Filtering. Journal of Physical Chemistry C, 2013, 117, 26582-26587.	3.1	18
70	On the stability and necessary electrophoretic mobility of bare oil nanodroplets in water. Journal of Chemical Physics, 2020, 152, 241104.	3.0	18
71	Zwitterionic and Charged Lipids Form Remarkably Different Structures on Nanoscale Oil Droplets in Aqueous Solution. Langmuir, 2018, 34, 1042-1050.	3.5	17
72	Specific Ion Effects at the Interface of Nanometer-Sized Droplets in Water: Structure and Stability. Journal of Physical Chemistry C, 2019, 123, 16621-16630.	3.1	17

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73	Transient domains of ordered water induced by divalent ions lead to lipid membrane curvature fluctuations. Communications Chemistry, 2020, 3, .	4.5	17
74	Interfacial Structure and Hydration of 3D Lipid Monolayers in Aqueous Solution. Journal of Physical Chemistry B, 2017, 121, 2808-2813.	2.6	16
75	Temperature dependence of water-water and ion-water correlations in bulk water and electrolyte solutions probed by femtosecond elastic second harmonic scattering. Journal of Chemical Physics, 2018, 148, 222835.	3.0	16
76	The Diverse Nature of Ion Speciation at the Nanoscale Hydrophobic/Water Interface. Journal of Physical Chemistry B, 2019, 123, 2414-2423.	2.6	16
77	The Jonesâ€“Ray Effect Is Not Caused by Surface-Active Impurities. Journal of Physical Chemistry Letters, 2018, 9, 6739-6743.	4.6	15
78	Interaction of Oil and Lipids in Freestanding Lipid Bilayer Membranes Studied with Label-Free High-Throughput Wide-Field Second-Harmonic Microscopy. Langmuir, 2018, 34, 11305-11310.	3.5	15
79	Delocalized Surface Modes Reveal Three-Dimensional Structures of Complex Biomolecules. Journal of Physical Chemistry C, 2008, 112, 7531-7534.	3.1	13
80	Spatiotemporal Imaging of Water in Operating Voltage-Gated Ion Channels Reveals the Slow Motion of Interfacial Ions. Nano Letters, 2019, 19, 7608-7613.	9.1	13
81	Self-Assembly at Water Nanodroplet Interfaces Quantified with Nonlinear Light Scattering. Langmuir, 2020, 36, 9317-9322.	3.5	13
82	Surface-Specific Interaction of the Extracellular Domain of Protein L1 with Nitrilotriacetic Acid-Terminated Self-Assembled Monolayers. Langmuir, 2010, 26, 1051-1056.	3.5	11
83	Biodegradable Harmonophores for Targeted High-Resolution In Vivo Tumor Imaging. ACS Nano, 2021, 15, 4144-4154.	14.6	11
84	Membraneâ€“Proteinâ€“Hydration Interaction of Î±-Synuclein with Anionic Vesicles Probed via Angle-Resolved Second-Harmonic Scattering. Journal of Physical Chemistry B, 2019, 123, 1044-1049.	2.6	10
85	Vibrational Sum Frequency Scattering in Absorptive Media: A Theoretical Case Study of Nano-objects in Water. Journal of Physical Chemistry C, 2020, 124, 23078-23085.	3.1	10
86	The Presence of Ultralow Densities of Nanocrystallites in Amorphous Poly(lactic acid) Microspheres. Journal of Physical Chemistry B, 2013, 117, 8906-8910.	2.6	9
87	Toward Vibrational Dynamics at Liquidâ€“Liquid and Nano-Interfaces: Time-Resolved Sum-Frequency Scattering. Journal of Physical Chemistry B, 2014, 118, 3366-3371.	2.6	9
88	Freezing effects of oil-in-water emulsions studied by sum-frequency scattering spectroscopy. Journal of Chemical Physics, 2016, 145, 044706.	3.0	9
89	Hyaluronan orders water molecules in its nanoscale extended hydration shells. Science Advances, 2021, 7, .	10.3	9
90	Lipid Melting Transitions Involve Structural Redistribution of Interfacial Water. Journal of Physical Chemistry B, 2021, 125, 12457-12465.	2.6	9

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91	Water as a contrast agent to quantify surface chemistry and physics using second harmonic scattering and imaging: A perspective. Applied Physics Letters, 2022, 120, .	3.3	9
92	What interactions can distort the orientational distribution of interfacial water molecules as probed by second harmonic and sum frequency generation?. Journal of Chemical Physics, 2016, 145, 044705.	3.0	8
93	Determination and evaluation of the nonadditivity in wetting of molecularly heterogeneous surfaces. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 25516-25523.	7.1	8
94	Mapping Electrochemical Heterogeneity at Gold Surfaces: A Second Harmonic Imaging Study. Journal of Physical Chemistry C, 2020, 124, 20021-20034.	3.1	8
95	Sum frequency and second harmonic generation from the surface of a liquid microjet. Journal of Chemical Physics, 2014, 141, 18C524.	3.0	7
96	Water Structure at the Hydrophobic Nanodroplet Surface Revealed by Vibrational Sum Frequency Scattering Using Isotopic Dilution. Journal of Physical Chemistry B, 2022, 126, 3186-3192.	2.6	7
97	Continuous Photobleaching to Study the Growth Modes of Focal Adhesions. Journal of Adhesion Science and Technology, 2010, 24, 2323-2334.	2.6	4
98	Hydration mediated interfacial transitions on mixed hydrophobic/hydrophilic nanodroplet interfaces. Journal of Chemical Physics, 2018, 149, 234704.	3.0	4
99	Endogenous SHG and 2PEF coherence imaging of substructures in neurons in 3D. Optics Express, 2019, 27, 2235.	3.4	4
100	The adsorption behaviour of isobutane on Pt(533): A combined RAIRS and TPD study. Chemical Physics Letters, 2000, 323, 201-208.	2.6	3
101	Reorganization of adsorbed films by coadsorbing species. Journal of Chemical Physics, 2000, 113, 6376-6381.	3.0	3
102	Comment on â€œWater-water correlations in electrolyte solutions probed by hyper-Rayleigh scatteringâ€• [J. Chem. Phys. 147, 214505 (2017)]. Journal of Chemical Physics, 2018, 149, 167101.	3.0	3
103	Kinetically Stable Triglyceride-Based Nanodroplets and Their Interactions with Lipid-Specific Proteins. Langmuir, 2018, 34, 8983-8993.	3.5	3
104	Imaging Cu2+ binding to charged phospholipid membranes by high-throughput second harmonic wide-field microscopy. Journal of Chemical Physics, 2021, 155, 184704.	3.0	3
105	Mapping of real-time morphological changes in the neuronal cytoskeleton with label-free wide-field second-harmonic imaging: a case study of nocodazole. Neurophotonics, 2019, 6, 1.	3.3	3
106	Handy water: Chiral superstructures around peptide Î²-sheets. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	7.1	2
107	Ultrasensitive Label-Free Detection of Proteinâ€“Membrane Interaction Exemplified by Toxin-Liposome Insertion. Journal of Physical Chemistry Letters, 2022, 13, 3197-3201.	4.6	2
108	Cascading second-order versus direct third-order nonlinear optical processes in a uniaxial crystal. Optics Communications, 2004, 234, 407-417.	2.1	1

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109	Eingeseift vom falschen Modell. Physik der Ã–l-Wasser-Emulsionen. Physik in Unserer Zeit, 2011, 42, 137-143.	0.0	0
110	Aqueous Nanoscale Systems. Chimia, 2017, 71, 278.	0.6	0
111	Probing Neuronal Activity using Membrane Interfacial Water. , 2019, , .		0
112	Probing lipid membranes with vibrational sum-frequency scattering. , 2018, , .		0
113	Label-free dynamic lipid membrane potential imaging. , 2019, , .		0
114	Temperature dependence of intermolecular correlations in bulk water and electrolyte solutions. , 2020, , .		0
115	Tribute to Dor Ben-Amotz. Journal of Physical Chemistry B, 2022, 126, 2943-2945.	2.6	0