Y Ron Shen

List of Publications by Year
in descending order

110 papers	10,432 citations	76294 40 h-index	36008 97 g-index
114 all docs	114 docs citations	114 times ranked	7027 citing authors

#	Article	IF	Citations
1	Surface properties probed by second-harmonic and sum-frequency generation. Nature, 1989, 337, 519-525.	13.7	2,191
2	Mapping molecular orientation and conformation at interfaces by surface nonlinear optics. Physical Review B, 1999, 59, 12632-12640.	1.1	766
3	Optical Second Harmonic Generation at Interfaces. Annual Review of Physical Chemistry, 1989, 40, 327-350.	4.8	717
4	Liquid Interfaces:Â A Study by Sum-Frequency Vibrational Spectroscopy. Journal of Physical Chemistry B, 1999, 103, 3292-3307.	1.2	575
5	General considerations on optical second-harmonic generation from surfaces and interfaces. Physical Review B, 1986, 33, 8254-8263.	1.1	411
6	New Information on Water Interfacial Structure Revealed by Phase-Sensitive Surface Spectroscopy. Physical Review Letters, 2005, 94, 046102.	2.9	381
7	Linear and nonlinear wave propagation in negative refraction metamaterials. Physical Review B, 2004, 69, .	1.1	310
8	Structure and charging of hydrophobic material/water interfaces studied by phase-sensitive sum-frequency vibrational spectroscopy. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 15148-15153.	3.3	280
9	Valley and band structure engineering of folded MoS2 bilayers. Nature Nanotechnology, 2014, 9, 825-829.	15.6	267
10	Surface Vibrational Spectroscopic Study of Surface Melting of Ice. Physical Review Letters, 2001, 86, 1554-1557.	2.9	265
11	Unveiling Microscopic Structures of Charged Water Interfaces by Surface-Specific Vibrational Spectroscopy. Physical Review Letters, 2016, 116, 016101.	2.9	244
12	Phase-Sensitive Sum-Frequency Spectroscopy. Annual Review of Physical Chemistry, 2013, 64, 129-150.	4.8	241
13	Bulk contribution in surface second-harmonic generation. Physical Review B, 1988, 38, 7985-7989.	1.1	236
14	Generation of Farâ€Infrared Radiation by Picosecond Light Pulses in LiNbO3. Applied Physics Letters, 1971, 19, 320-323.	1.5	230
15	Gate-tunable third-order nonlinear optical response of massless Dirac fermions in graphene. Nature Photonics, 2018, 12, 430-436.	15.6	194
16	Basic Theory of Surface Sum-Frequency Generation. Journal of Physical Chemistry C, 2012, 116, 15505-15509.	1.5	179
17	Local and nonlocal surface nonlinearities for surface optical second-harmonic generation. Physical Review B, 1987, 35, 4420-4426.	1.1	145
18	Evaluation of Surface vs Bulk Contributions in Sum-Frequency Vibrational Spectroscopy Using Reflection and Transmission Geometriesâ€. Journal of Physical Chemistry B, 2000, 104, 3349-3354.	1.2	134

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19	Surface Propensities of Atmospherically Relevant Ions in Salt Solutions Revealed by Phase-Sensitive Sum Frequency Vibrational Spectroscopy. Journal of Physical Chemistry Letters, 2011, 2, 1946-1949.	2.1	116
20	Refractive Indices and Optical Anisotropy of Homologous Liquid Crystals. Molecular Crystals and Liquid Crystals, 1976, 36, 193-207.	0.9	111
21	Environment-Induced Surface Structural Changes of a Polymer:Â Anin SituIR + Visible Sum-Frequency Spectroscopic Study. Journal of Physical Chemistry B, 1997, 101, 9060-9064.	1.2	109
22	Non-linear optical spectroscopy as a novel probe for molecular chirality. International Reviews in Physical Chemistry, 2005, 24, 257-299.	0.9	105
23	Structural definition of the BIL and DL: a new universal methodology to rationalize non-linearÏ‡⁽²⁾(Ï‰) SFG signals at charged interfaces, includingÏ‡⁽³⁾(Ï‰) contributions. Physical Chemistry Chemical Physics, 2018, 20, 5190-5199.	1.3	90
24	Mechanism of Electric Power Generation from Ionic Droplet Motion on Polymer Supported Graphene. Journal of the American Chemical Society, 2018, 140, 13746-13752.	6.6	87
25	A few selected applications of surface nonlinear optical spectroscopy.. Proceedings of the National Academy of Sciences of the United States of America, 1996, 93, 12104-12111.	3.3	86
26	Nonlinear optical spectroscopy of photonic metamaterials. Physical Review B, 2008, 78, .	1.1	85
27	Bulk contribution from isotropic media in surface sum-frequency generation. Physical Review B, 2002, 66, .	1.1	74
28	Optical parametric amplification in a lithium triborate crystal tunable from 0.65 to 2.5 Î¼m. Applied Physics Letters, 1991, 59, 2805-2807.	1.5	68
29	Phase reference in phase-sensitive sum-frequency vibrational spectroscopy. Journal of Chemical Physics, 2016, 144, 244711.	1.2	64
30	Probing the charge-transfer state of CO on Pt(111) by two-dimensional infrared-visible sum frequency generation spectroscopy. Physical Review B, 2004, 69, .	1.1	59
31	Phaseâ€matched farâ€infrared generation by optical mixing of dye laser beams. Applied Physics Letters, 1973, 23, 669-671.	1.5	57
32	Effect of pH on the Water/Î±-Al₂O₃ (11Ì…02) Interface Structure Studied by Sum-Frequency Vibrational Spectroscopy. Journal of Physical Chemistry C, 2011, 115, 13887-13893.	1.5	56
33	Surface Studies of Polymer Blends by Sum Frequency Vibrational Spectroscopy, Atomic Force Microscopy, and Contact Angle Goniometry. Journal of Physical Chemistry B, 1998, 102, 6225-6230.	1.2	54
34	OPTICAL PHYSICS: Enhanced: Solitons Made Simple. Science, 1997, 276, 1520-1520.	6.0	48
35	Invited Lecture. Studies of liquid crystal monolayers and films by optical second harmonic generation. Liquid Crystals, 1989, 5, 635-643.	0.9	46
36	Vibrational and electronic spectroscopy of pyridine and benzene adsorbed on the Rh(111) crystal surface. Journal of Chemical Physics, 1988, 88, 441-450.	1.2	45

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37	Second-harmonic generation fromC60thin films at 1.064 Î¼m. Physical Review B, 1995, 51, 10057-10067.	1.1	45
38	Exploring new opportunities with sum-frequency nonlinear optical spectroscopy. Pure and Applied Chemistry, 2001, 73, 1589-1598.	0.9	45
39	Competitive Molecular Adsorption at Liquid/Solid Interfaces:â€‰ A Study by Sum-Frequency Vibrational Spectroscopy. Journal of Physical Chemistry C, 2007, 111, 2069-2076.	1.5	44
40	Surface Vibrational Modes of<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>Î±</mml:mi></mml:math>-Quartz(0001) Probed by Sum-Frequency Spectroscopy. Physical Review Letters, 2008, 101, 016101.	2.9	44
41	Raman Scattering from Nematic Liquidâ€Crystalline Azoxybenzenes. Journal of Chemical Physics, 1972, 56, 2654-2664.	1.2	40
42	Study of monolayer polymerization using nonlinear optics. Journal of Chemical Physics, 1986, 85, 7374-7376.	1.2	40
43	Wavelength Modulation Spectra and Electronic Band Structure of SnS₂ and SnSe₂. Physica Status Solidi (B): Basic Research, 1976, 75, 303-314.	0.7	39
44	Polymer Adsorption on Graphite and CVD Graphene Surfaces Studied by Surface-Specific Vibrational Spectroscopy. Nano Letters, 2015, 15, 6501-6505.	4.5	39
45	Measurement of Refractive Indices and Study of Isotropic-Nematic Phase Transition by the Surface Plasmon Technique. Molecular Crystals and Liquid Crystals, 1980, 59, 97-108.	0.9	38
46	Surface sum-frequency vibrational spectroscopy of nonpolar media. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 5883-5887.	3.3	38
47	Graphene-doped polymer nanofibers for low-threshold nonlinear optical waveguiding. Light: Science and Applications, 2015, 4, e348-e348.	7.7	38
48	Surface pH and Ion Affinity at the Alcohol-Monolayer/Water Interface Studied by Sum-Frequency Spectroscopy. Journal of Physical Chemistry C, 2016, 120, 15224-15229.	1.5	37
49	Elastic ice microfibers. Science, 2021, 373, 187-192.	6.0	35
50	Domain pattern excited by surface acoustic waves in a nematic film. Applied Physics Letters, 1976, 28, 473-475.	1.5	33
51	Picosecond, narrowâ€band, widely tunable optical parametric oscillator using a temperatureâ€tuned lithium borate crystal. Applied Physics Letters, 1993, 62, 1457-1459.	1.5	32
52	Phase-sensitive sum frequency vibrational spectroscopic study of air/water interfaces: H2O, D2O, and diluted isotopic mixtures. Journal of Chemical Physics, 2019, 150, 144701.	1.2	32
53	Structure of the Submonolayer of Ethanol Adsorption on a Vapor/Fused Silica Interface Studied with Sum Frequency Vibrational Spectroscopy. Journal of Physical Chemistry A, 2015, 119, 4573-4580.	1.1	29
54	What the Diffuse Layer (DL) Reveals in Non-Linear SFG Spectroscopy. Minerals (Basel, Switzerland), 2018, 8, 305.	0.8	28

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55	Absorption, Photoluminescence, and Resonant Raman Scattering in Bil₃. Physica Status Solidi (B): Basic Research, 1974, 61, 419-427.	0.7	26
56	Sum-Frequency Vibrational Spectroscopic Study of Surface Glass Transition of Poly(vinyl alcohol). Macromolecules, 2003, 36, 3303-3306.	2.2	26
57	Applications of Molecular Theory of Sum-Frequency Generations To Study Molecular Chiralityâ€. Journal of Physical Chemistry A, 2004, 108, 8058-8076.	1.1	25
58	Sum-frequency phonon spectroscopy on<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>Î±</mml:mi></mml:math>-quartz. Physical Review B, 2008, 78, .	1.1	23
59	Correlation between Backward Stimulated Raman Pulse and Moving Focus in Liquids. Applied Physics Letters, 1971, 19, 285-287.	1.5	22
60	Theoretical analysis and simulation of pulsed laser heating at interface. Journal of Applied Physics, 2018, 123, .	1.1	22
61	Surface photon echoes in the infrared range. Applied Physics B, Photophysics and Laser Chemistry, 1990, 50, 535-539.	1.5	21
62	Facet-specific interaction between methanol and TiO ₂ probed by sum-frequency vibrational spectroscopy. Proceedings of the National Academy of Sciences of the United States of America, 2018, 115, E3888-E3894.	3.3	21
63	Gate-Controlled Sum-Frequency Vibrational Spectroscopy for Probing Charged Oxide/Water Interfaces. Journal of Physical Chemistry Letters, 2019, 10, 5943-5948.	2.1	21
64	Revisiting the basic theory of sum-frequency generation. Journal of Chemical Physics, 2020, 153, 180901.	1.2	21
65	Mapping Dynamical Magnetic Responses of Ultrathin Micron-Size Superconducting Films Using Nitrogen-Vacancy Centers in Diamond. Nano Letters, 2019, 19, 5697-5702.	4.5	18
66	Nucleation and dissociation of methane clathrate embryo at the gasâ€“water interface. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 23410-23415.	3.3	18
67	Surface-Induced Anisotropic Orientations of Interfacial Ethanol Molecules at Air/Sapphire(11Ì…02) and Ethanol/Sapphire(11Ì…02) Interfaces. Journal of Physical Chemistry Letters, 2011, 2, 1831-1835.	2.1	16
68	Coherent phonon generation by optical mixing in a oneâ€dimensional superlattice. Journal of Applied Physics, 1973, 44, 1417-1419.	1.1	14
69	Measurements of dc Kerr Constants for a Homologous Series of Nematic Compounds. Molecular Crystals and Liquid Crystals, 1977, 43, 287-294.	0.9	14
70	Scattering of Light by Magnons. Journal of Applied Physics, 1967, 38, 1490-1495.	1.1	13
71	Local Refractive Index Measurement on a Cholesteric Liquid Crystal Using the Surface Plasmon Technique. Molecular Crystals and Liquid Crystals, 1981, 67, 261-275.	0.9	13
72	Absence of detectable MOKE signals from spin Hall effect in metals. Applied Physics Letters, 2017, 110, 042401.	1.5	13

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73	Response to â€œComment on â€˜Phase reference in phase-sensitive sum-frequency vibrational spectroscopyâ€â€™ [J. Chem. Phys. 145, 167101 (2016)]. Journal of Chemical Physics, 2016, 145, 167102.	1.2	11
74	Response to â€œComment on â€˜Phase-sensitive sum frequency vibrational spectroscopic study of air/water interfaces: H2O, D2O, and diluted isotopic mixturesâ€™â€•[J. Chem. Phys. 152, 237101 (2020)]. Journal of Chemical Physics, 2020, 152, 237102.	1.2	11
75	SUM-FREQUENCY GENERATION AS A SURFACE PROBE. Advanced Series in Physical Chemistry, 1995, , 5-53.	1.5	10
76	Theory and Applications of Sumâ€Frequency Generations. Journal of the Chinese Chemical Society, 2014, 61, 77-92.	0.8	10
77	Probing the Mechanisms for Surface-Induced Alignment of Liquid Crystals. Molecular Crystals and Liquid Crystals, 1991, 207, 77-85.	0.7	9
78	Brillouin Scattering in a Cholesteric Liquid Crystal Near the Cholesteric-Isotropic Transition. Molecular Crystals and Liquid Crystals, 1972, 18, 285-296.	0.9	8
79	The Effect of Conjugation Length and Electron Donor Groups on the Second Order Nonlinear Polarizability of Cyano Substituted Aromatic Molecules. Molecular Crystals and Liquid Crystals Incorporating Nonlinear Optics, 1987, 150, 607-616.	0.3	8
80	Collective Rotation of the Molecules of a Nematic Liquid Crystal Driven by the Angular Momentum of Light. Molecular Crystals and Liquid Crystals, 1987, 143, 89-100.	0.9	8
81	Pretransitional Surface Phenomena in Ferroelectric Liquid Crystals. Molecular Crystals and Liquid Crystals, 1993, 225, 55-65.	0.3	7
82	Surface and bulk contributions to the second-harmonic generation in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi mathvariant="normal">B</mml:mi><mml:msub><mml:mi mathvariant="normal">i</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:mi mathvariant="normal">S</mml:mi><mml:msub><mml:mi mathvariant="normal">e</mml:mi><mml:mn>3</mml:mn></mml:msub></mml:mrow></mml:math>. Physi	1.1	7
83	MEASUREMENTS OF SUBNANOSECOND ``FILAMENT'' PULSES USING THE CONVOLUTION TECHNIQUE. Applied Physics Letters, 1969, 14, 380-382.	1.5	5
84	Ultrasonic waves in sandwiched fluid film. Applied Physics Letters, 1976, 28, 699-701.	1.5	5
85	Probing Liquid Crystals with Nonlinear Optical Processes. Molecular Crystals and Liquid Crystals, 1987, 143, 1-6.	0.9	5
86	A note on two-phonon coherent anti-stokes Raman scattering. Journal of Raman Spectroscopy, 1981, 10, 110-112.	1.2	4
87	Surface-Induced Ordering in a Homologous Series of Liquid Crystalsâ€”Orientational Wetting. Molecular Crystals and Liquid Crystals Incorporating Nonlinear Optics, 1990, 179, 419-424.	0.3	4
88	Simultaneous Qâ€Switching of Two Independent Ruby Lasers. Review of Scientific Instruments, 1970, 41, 216-218.	0.6	3
89	Dependence of Liquid Crystal Bulk Alignment on Its Surface Monolayer. Molecular Crystals and Liquid Crystals, 1995, 262, 35-43.	0.3	3
90	Sharing of Na⁺ by Three â^'COO^{â€“} Groups at Deprotonated Carboxyl-Terminated Self-Assembled Monolayer-Charged Aqueous Interface. Journal of Physical Chemistry C, 2018, 122, 9111-9116.	1.5	3

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91	Nonlinear Optics And Surface Science. Materials Research Society Symposia Proceedings, 1985, 51, 39.	0.1	2
92	Correlation of Structure and Mechanical Properties of Polyolefin Surfaces by Ir + Visible Sum Frequency Generation Vibrational Spectroscopy and Atomic Force Microscopy. Materials Research Society Symposia Proceedings, 1998, 522, 175.	0.1	2
93	Dye-Induced Enhancement of Optical Nonlinearity in Liquid Crystals and Ordinary Liquids. Molecular Crystals and Liquid Crystals, 1998, 321, 165-175.	0.3	2
94	Interface Studies with Nonlinear Optics. MRS Bulletin, 1988, 13, 28-30.	1.7	1
95	Multiphoton Excitation Studies on GaN with PS Pulses. Materials Research Society Symposia Proceedings, 1996, 449, 621.	0.1	1
96	Studies of Multiphoton Dissociation of Polyatomic Molecules with Crossed Laser and Molecular Beams. ACS Symposium Series, 1977, , 72-82.	0.5	0
97	Surface Adsorption Studied by Optical SHG: Soluble Monolayers at the Air/Water Interface. Materials Research Society Symposia Proceedings, 1989, 177, 363.	0.1	0
98	Progress in Linear Optics, Non-Linear Optics and Surface Alignment of Liquid Crystals. Molecular Crystals and Liquid Crystals Incorporating Nonlinear Optics, 1990, 179, 365-375.	0.3	0
99	LASER STUDIES OF POLARITONS. Modern Physics Letters B, 1990, 04, 159-162.	1.0	0
100	Optical Studies of Pretransitional Surface Ordering and Disordering in Liquid Crystals. Molecular Crystals and Liquid Crystals, 1992, 223, 85-92.	0.3	0
101	Sum-frequency vibrational spectroscopy of water interfaces. AIP Conference Proceedings, 1993, , .	0.3	0
102	Vibrational Spectroscopy of Rubbed Polymer Surfaces. Molecular Crystals and Liquid Crystals, 2001, 358, 103-108.	0.3	0
103	Nonlinear Optical Spectroscopic Studies of Polymer Surfaces for Liquid Crystal Alignment: Photo-Irradiated Polyimide and Rubbed Polystyrene Surfaces. Molecular Crystals and Liquid Crystals, 2004, 412, 339-349.	0.4	0
104	Phase-sensitive sum-frequency vibrational spectroscopy on water/vapor interfaces. , 2006, , .		0
105	Phase-Sensitive Nonlinear Optical Spectroscopy. , 2007, , .		0
106	Plasmon resonances of strongly coupled nanodisks. , 2007, , .		0
107	Second-harmonic generations in fishet metamaterials. , 2012, , .		0
108	NONLINEAR OPTICAL SPECTROSCOPY FOR INTERFACES. Advanced Series in Applied Physics, 2010, , 19-25.	0.0	0

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109	RETURN TO THE CLASSICS. , 1990, , .		0
110	LASER STUDIES OF POLARITONS. , 1989, , 158-164.		0