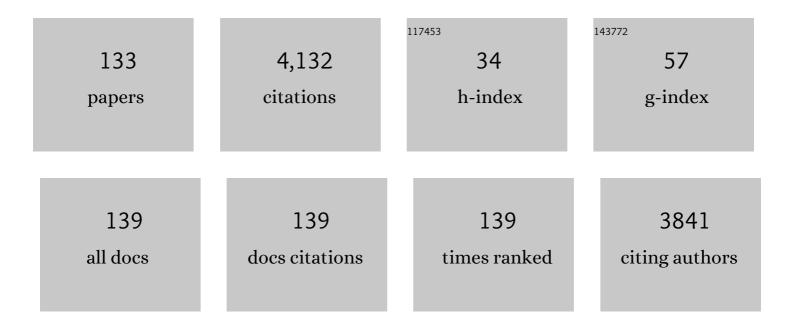
## Garth J Simpson

List of Publications by Year in descending order

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#	Article	IF	CITATIONS
1	A Unified Treatment of Selection Rules and Symmetry Relations for Sum-Frequency and Second Harmonic Spectroscopies. Journal of Physical Chemistry B, 2004, 108, 3548-3562.	1.2	263
2	An electrochemical fabrication process for the assembly of anisotropically oriented collagen bundles. Biomaterials, 2008, 29, 3278-3288.	5.7	224
3	Thiophene Hydrodesulfurization over Alumina-Supported Molybdenum Carbide and Nitride Catalysts: Adsorption Sites, Catalytic Activities, and Nature of the Active Surface. Journal of Catalysis, 1996, 164, 109-121.	3.1	184
4	An SHG Magic Angle:Â Dependence of Second Harmonic Generation Orientation Measurements on the Width of the Orientation Distribution. Journal of the American Chemical Society, 1999, 121, 2635-2636.	6.6	157
5	Chirality in Nonlinear Optics. Annual Review of Physical Chemistry, 2009, 60, 345-365.	4.8	131
6	Molecular Origins of the Remarkable Chiral Sensitivity of Second-Order Nonlinear Optics. ChemPhysChem, 2004, 5, 1301-1310.	1.0	122
7	Second-Order Nonlinear Optical Imaging of Chiral Crystals. Annual Review of Analytical Chemistry, 2011, 4, 419-437.	2.8	115
8	Selective Detection of Protein Crystals by Second Harmonic Microscopy. Journal of the American Chemical Society, 2008, 130, 14076-14077.	6.6	109
9	Electronic and Vibrational Second-Order Nonlinear Optical Properties of Protein Secondary Structural Motifs. Journal of Physical Chemistry B, 2005, 109, 20009-20026.	1.2	76
10	Surface Roughness by Contact versus Tapping Mode Atomic Force Microscopy. Langmuir, 1999, 15, 1429-1434.	1.6	73
11	Parts per Million Powder X-ray Diffraction. Analytical Chemistry, 2015, 87, 10950-10955.	3.2	70
12	Molecular Orientation and Angular Distribution Probed by Angle-Resolved Absorbance and Second Harmonic Generation. Analytical Chemistry, 2000, 72, 887-898.	3.2	68
13	Selective Detection and Quantitation of Organic Molecule Crystallization by Second Harmonic Generation Microscopy. Analytical Chemistry, 2010, 82, 5425-5432.	3.2	68
14	Nonlinear Optical Imaging of Integral Membrane Protein Crystals in Lipidic Mesophases. Analytical Chemistry, 2010, 82, 491-497.	3.2	68
15	The general failure of Kleinman symmetry in practical nonlinear optical applications. Chemical Physics Letters, 2004, 390, 8-13.	1.2	67
16	Assembly of Dithiocarbamate-Anchored Monolayers on Gold Surfaces in Aqueous Solutions. Langmuir, 2008, 24, 8660-8666.	1.6	57
17	High frame-rate multichannel beam-scanning microscopy based on Lissajous trajectories. Optics Express, 2014, 22, 24224.	1.7	57
18	Impact of Polymers on the Precipitation Behavior of Highly Supersaturated Aqueous Danazol Solutions. Molecular Pharmaceutics, 2014, 11, 3027-3038.	2.3	57

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19	Structural origins of circular dichroism in surface second harmonic generation. Journal of Chemical Physics, 2002, 117, 3398-3410.	1.2	56
20	Experimental Confirmation of the Importance of Orientation in the Anomalous Chiral Sensitivity of Second Harmonic Generation. Journal of the American Chemical Society, 2003, 125, 9111-9115.	6.6	56
21	Measurement of Orientation in Organic Thin Films. Accounts of Chemical Research, 2000, 33, 781-789.	7.6	50
22	Screening of protein crystallization trials by second order nonlinear optical imaging of chiral crystals (SONICC). Methods, 2011, 55, 379-386.	1.9	50
23	Visual Methods for Interpreting Optical Nonlinearity at the Molecular Level. Accounts of Chemical Research, 2007, 40, 953-960.	7.6	45
24	Two-photon excited UV fluorescence for protein crystal detection. Acta Crystallographica Section D: Biological Crystallography, 2011, 67, 839-846.	2.5	45
25	Ellipsometric Approach for the Real-Time Detection of Label-Free Protein Adsorption by Second Harmonic Generation. Journal of the American Chemical Society, 2004, 126, 5001-5007.	6.6	44
26	Nonlinear Optical Imaging for Sensitive Detection of Crystals in Bulk Amorphous Powders. Journal of Pharmaceutical Sciences, 2012, 101, 4201-4213.	1.6	43
27	Effect of Substrates on Naproxen-Polyvinylpyrrolidone Solid Dispersions Formed via the Drop Printing Technique. Journal of Pharmaceutical Sciences, 2013, 102, 638-648.	1.6	41
28	Polarization-Modulated Second Harmonic Generation Ellipsometric Microscopy at Video Rate. Analytical Chemistry, 2014, 86, 8448-8456.	3.2	41
29	Molecular and surface hyperpolarizability of oriented chromophores of low symmetry. Physical Review B, 2002, 66, .	1.1	40
30	Crystallization and Dissolution Behavior of Naproxen/Polyethylene Glycol Solid Dispersions. Journal of Physical Chemistry B, 2013, 117, 1494-1500.	1.2	38
31	Self-Consistent Approach for Simplifying the Molecular Interpretation of Nonlinear Optical and Multiphoton Phenomena. Journal of Physical Chemistry A, 2005, 109, 1316-1323.	1.1	36
32	Stimulated Raman scattering imaging by continuous-wave laser excitation. Optics Letters, 2013, 38, 1479.	1.7	36
33	Infrared Spectroscopy and Temperature-Programmed Desorption Study of Adsorbed Thiophene on Î <sup>3</sup> -Al2O3. Langmuir, 1996, 12, 1500-1510.	1.6	35
34	Molecular Design Strategies for Optimizing the Nonlinear Optical Properties of Chiral Crystals. Crystal Growth and Design, 2008, 8, 2589-2594.	1.4	35
35	Finding the Needle in the Haystack: Characterization of Trace Crystallinity in a Commercial Formulation of Paclitaxel Protein-Bound Particles by Raman Spectroscopy Enabled by Second Harmonic Generation Microscopy. Molecular Pharmaceutics, 2015, 12, 2378-2383.	2.3	34
36	Direct Determination of Effective Interfacial Optical Constants by Nonlinear Optical Null Ellipsometry of Chiral Films. Analytical Chemistry, 2005, 77, 215-224.	3.2	33

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37	Mechanism of the Chiral SHG Activity of Bacteriorhodopsin Films. Journal of the American Chemical Society, 2006, 128, 10994-10995.	6.6	32
38	Orientation-Insensitive Methodology for Second Harmonic Generation. 2. Application to Adsorption Isotherm and Kinetics Measurements. Analytical Chemistry, 2000, 72, 3407-3411.	3.2	31
39	Molecular Self-Assembly of Mixed High-Beta Zwitterionic and Neutral Ground-State NLO Chromophores. Chemistry of Materials, 2008, 20, 1778-1787.	3.2	31
40	Selection Rules and Symmetry Relations for Four-Wave Mixing Measurements of Uniaxial Assemblies. Journal of Physical Chemistry B, 2008, 112, 5834-5848.	1.2	31
41	Integrated nonlinear optical imaging microscope for on-axis crystal detection and centering at a synchrotron beamline. Journal of Synchrotron Radiation, 2013, 20, 531-540.	1.0	31
42	NLOPredict: Visualization and data analysis software for nonlinear optics. Journal of Computational Chemistry, 2007, 28, 1996-2002.	1.5	30
43	Towards protein-crystal centering using second-harmonic generation (SHG) microscopy. Acta Crystallographica Section D: Biological Crystallography, 2013, 69, 843-851.	2.5	30
44	Polarization characterization in surface second harmonic generation by nonlinear optical null ellipsometry. Analytica Chimica Acta, 2003, 496, 133-142.	2.6	29
45	Polarization-dependent two-photon absorption for the determination of protein secondary structure: A theoretical study. Chemical Physics Letters, 2008, 455, 6-12.	1.2	29
46	Polarization-resolved second-harmonic generation microscopy as a method to visualize protein-crystal domains. Acta Crystallographica Section D: Biological Crystallography, 2013, 69, 74-81.	2.5	29
47	Modular ellipsometric approach for mining structural information from nonlinear optical polarization analysis. Physical Review B, 2005, 72, .	1.1	28
48	Kinetic Trapping of Metastable Amino Acid Polymorphs. Journal of the American Chemical Society, 2014, 136, 2404-2412.	6.6	28
49	Statistical Treatment of Photon/Electron Counting: Extending the Linear Dynamic Range from the Dark Count Rate to Saturation. Analytical Chemistry, 2010, 82, 10129-10134.	3.2	27
50	Fluorescence-Detected Mid-Infrared Photothermal Microscopy. Journal of the American Chemical Society, 2021, 143, 10809-10815.	6.6	27
51	Quantification of "Local―Surface Orientation:  Theory and Experiment. Journal of Physical Chemistry B, 1999, 103, 1525-1531.	1.2	26
52	Imaging the Nonlinear Susceptibility Tensor of Collagen by Nonlinear Optical Stokes Ellipsometry. Biophysical Journal, 2016, 111, 1361-1374.	0.2	26
53	Characterization of Phase Transformations for Amorphous Solid Dispersions of a Weakly Basic Drug upon Dissolution in Biorelevant Media. Pharmaceutical Research, 2019, 36, 174.	1.7	26
54	Molecular Orientation at Surfaces:  Surface Roughness Contributions to Measurements Based on Linear Dichroism. Journal of Physical Chemistry B, 1999, 103, 3800-3811.	1.2	25

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55	Dynamic Sparse Sampling for Confocal Raman Microscopy. Analytical Chemistry, 2018, 90, 4461-4469.	3.2	25
56	Evaluation of molecular-scale roughness at liquid interfaces. Chemical Physics Letters, 1999, 309, 117-122.	1.2	24
57	Orientation-Insensitive Methodology for Second Harmonic Generation. 1. Theory. Analytical Chemistry, 2000, 72, 3399-3406.	3.2	24
58	New Tools for Surface Second-Harmonic Generation. Applied Spectroscopy, 2001, 55, 16A-32A.	1.2	24
59	Interpreting nonlinear optics of biopolymer assemblies: Finding a hook. Chemical Physics Letters, 2008, 465, 167-174.	1.2	24
60	Nonlinear Optical Stokes Ellipsometry. 2. Experimental Demonstration. Journal of Physical Chemistry C, 2009, 113, 10166-10175.	1.5	23
61	Direct Observation of Transient Ostwald Crystallization Ordering from Racemic Serine Solutions. Journal of the American Chemical Society, 2010, 132, 13598-13599.	6.6	23
62	Nonlinear Optical Stokes Ellipsometry. 1. Theoretical Framework. Journal of Physical Chemistry C, 2009, 113, 10158-10165.	1.5	22
63	Modeling the SHG activities of diverse protein crystals. Acta Crystallographica Section D: Biological Crystallography, 2012, 68, 1513-1521.	2.5	22
64	Drop printing of pharmaceuticals: Effect of molecular weight on PEG coatedâ€naproxen/PEG 3350 solid dispersions. AICHE Journal, 2015, 61, 4502-4508.	1.8	22
65	Second harmonic generation microscopy as a tool for the early detection of crystallization in spray dried dispersions. Journal of Pharmaceutical and Biomedical Analysis, 2017, 146, 86-95.	1.4	22
66	Variation in Supersaturation and Phase Behavior of Ezetimibe Amorphous Solid Dispersions upon Dissolution in Different Biorelevant Media. Molecular Pharmaceutics, 2018, 15, 193-206.	2.3	21
67	Uncoupled oscillator model for interpreting second harmonic generation measurements of oriented chiral systems. Chemical Physics Letters, 2004, 399, 26-32.	1.2	20
68	DNAâ€Based Polymers as Chiral Templates for Secondâ€Order Nonlinear Optical Materials. ChemPhysChem, 2009, 10, 2674-2678.	1.0	20
69	Synchronous digitization for high dynamic range lock-in amplification in beam-scanning microscopy. Review of Scientific Instruments, 2014, 85, 033703.	0.6	20
70	Nanoengineered Structures for Holding and Manipulating Liposomes and Cells. Analytical Chemistry, 2001, 73, 787-791.	3.2	19
71	Statistical connection of binomial photon counting and photon averaging in high dynamic range beam-scanning microscopy. Optics Express, 2012, 20, 10406.	1.7	19
72	Rapid Discrimination of Polymorphic Crystal Forms by Nonlinear Optical Stokes Ellipsometric Microscopy. Analytical Chemistry, 2016, 88, 5760-5768.	3.2	19

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73	Powders Analysis by Second Harmonic Generation Microscopy. Analytical Chemistry, 2016, 88, 3853-3863.	3.2	19
74	Dynamic X-ray diffraction sampling for protein crystal positioning. Journal of Synchrotron Radiation, 2017, 24, 188-195.	1.0	19
75	Unified Theory for Polarization Analysis in Second Harmonic and Sum Frequency Microscopy. Biophysical Journal, 2016, 111, 1553-1568.	0.2	18
76	Evolution of Orientation in the Growth of Azo Dye Zirconium Phosphateâ^'Phosphonate Multilayers. Journal of the American Chemical Society, 1998, 120, 7997-7998.	6.6	17
77	Coupled Electrorotation of Polymer Microspheres for Microfluidic Sensing and Mixing. Analytical Chemistry, 2002, 74, 5099-5104.	3.2	17
78	Water–solid interactions in amorphous maltodextrin-crystalline sucrose binary mixtures. Pharmaceutical Development and Technology, 2014, 19, 247-256.	1.1	17
79	Video-rate two-photon excited fluorescence lifetime imaging system with interleaved digitization. Optics Letters, 2015, 40, 3296.	1.7	17
80	Connection of Jones and Mueller Tensors in Second Harmonic Generation and Multi-Photon Fluorescence Measurements. Journal of Physical Chemistry B, 2016, 120, 3281-3302.	1.2	17
81	Nanoscale Dielectrophoretic Spectroscopy of Individual Immobilized Mammalian Blood Cells. Biophysical Journal, 2006, 91, 2678-2686.	0.2	16
82	Development of a High-Throughput Laser-Induced Acoustic Desorption Probe and Raster Sampling For Laser-Induced Acoustic Desorption/Atmospheric Pressure Chemical Ionization. Analytical Chemistry, 2013, 85, 5720-5726.	3.2	16
83	Ab Initio Prediction of the Diversity of Second Harmonic Generation from Pharmaceutically Relevant Materials. Crystal Growth and Design, 2015, 15, 581-586.	1.4	16
84	Anomalous Diffusion Characterization by Fourier Transform-FRAP with Patterned Illumination. Biophysical Journal, 2020, 119, 737-748.	0.2	16
85	Coupled Electrorotation: Two Proximate Microspheres Spin in Registry with an AC Electric Field. ChemPhysChem, 2002, 3, 416.	1.0	15
86	Second Harmonic Generation of Unpolarized Light. Physical Review Letters, 2017, 119, 193901.	2.9	15
87	Mining the polarization-dependence of nonlinear optical measurements. Analyst, The, 2011, 136, 652-662.	1.7	12
88	Second Harmonic Generation Guided Raman Spectroscopy for Sensitive Detection of Polymorph Transitions. Analytical Chemistry, 2017, 89, 5958-5965.	3.2	12
89	Reduction of Tipâ^'Sample Contact Using Dielectrophoretic Force Scanning Probe Microscopy. Analytical Chemistry, 2005, 77, 8008-8012.	3.2	11
90	Dielectrophoretic Force Microscopy of Aqueous Interfaces. Langmuir, 2005, 21, 1436-1440.	1.6	11

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91	Computational Investigation of Amine–Oxygen Exciplex Formation. Journal of Physical Chemistry A, 2011, 115, 10159-10165.	1.1	11
92	Influence of substrate roughness on orientation measurements by second-harmonic generation. Chemical Physics Letters, 2000, 317, 276-281.	1.2	10
93	Kinetic Modeling of Accelerated Stability Testing Enabled by Second Harmonic Generation Microscopy. Analytical Chemistry, 2018, 90, 4406-4413.	3.2	10
94	Discrete retardance second harmonic generation ellipsometry. Review of Scientific Instruments, 2007, 78, 013106.	0.6	9
95	Chemically Selective Analysis of Molecular Monolayers by Nonlinear Optical Stokes Ellipsometry. Analytical Chemistry, 2010, 82, 559-566.	3.2	9
96	Imaging local electric fields produced upon synchrotron X-ray exposure. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 696-701.	3.3	9
97	The diffraction barrier broken. Nature, 2006, 440, 879-880.	13.7	8
98	Guiding synchrotron X-ray diffraction by multimodal video-rate protein crystal imaging. Journal of Synchrotron Radiation, 2016, 23, 959-965.	1.0	8
99	Spatial-spectral multiplexing for hyperspectral multiphoton fluorescence imaging. Optics Express, 2017, 25, 32243.	1.7	8
100	Stochastic Differential Scanning Calorimetry by Nonlinear Optical Microscopy. Analytical Chemistry, 2020, 92, 1171-1178.	3.2	8
101	Crystallization Kinetics in Fasted-State Simulated and Aspirated Human Intestinal Fluids. Crystal Growth and Design, 2021, 21, 2807-2820.	1.4	8
102	Axially-offset differential interference contrast microscopy via polarization wavefront shaping. Optics Express, 2019, 27, 3837.	1.7	8
103	Label-Free Autofluorescence-Detected Mid-Infrared Photothermal Microscopy of Pharmaceutical Materials. Analytical Chemistry, 2022, 94, 6512-6520.	3.2	8
104	Calibration-Free Second Harmonic Generation (SHG) Image Analysis for Quantification of Trace Crystallinity Within Final Dosage Forms of Amorphous Solid Dispersions. Applied Spectroscopy, 2018, 72, 1594-1605.	1.2	7
105	Nonlinear optical characterization of pharmaceutical formulations. TrAC - Trends in Analytical Chemistry, 2021, 140, 116241.	5.8	7
106	Real-time dynamic range and signal to noise enhancement in beam-scanning microscopy by integration of sensor characteristics, data acquisition hardware, and statistical methods. Proceedings of SPIE, 2013, 8657, 86570E.	0.8	6
107	In Situ Crystal Growth Rate Distributions of Active Pharmaceutical Ingredients. Molecular Pharmaceutics, 2020, 17, 769-776.	2.3	6
108	Digital Deconvolution Filter Derived from Linear Discriminant Analysis and Application for Multiphoton Fluorescence Microscopy. Analytical Chemistry, 2014, 86, 3508-3516.	3.2	5

Garth J Simpson

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109	Mueller Tensor Nonlinear Optical Polarization Analysis in Turbid Media. Journal of Physical Chemistry B, 2019, 123, 6643-6650.	1.2	5
110	Disparities of Single-Particle Growth Rates in Buried Versus Exposed Ritonavir Crystals within Amorphous Solid Dispersions. Molecular Pharmaceutics, 2020, 17, 4564-4571.	2.3	5
111	Iterative Non-Negative Matrix Factorization Filter for Blind Deconvolution in Photon/Ion Counting. Analytical Chemistry, 2019, 91, 5286-5294.	3.2	4
112	Intercalating dyes for enhanced contrast in second-harmonic generation imaging of protein crystals. Acta Crystallographica Section D: Biological Crystallography, 2015, 71, 1471-1477.	2.5	4
113	Irradiation of Dye-Doped Microspheres with a Strongly Focused Laser Beam Results in Alignment upon Optical Trapping. Nano Letters, 2002, 2, 207-210.	4.5	3
114	Nonlinear Optical Characterization of Membrane Protein Microcrystals and Nanocrystals. Advances in Experimental Medicine and Biology, 2016, 922, 91-103.	0.8	3
115	Triboluminescence from Pharmaceutical Formulations. Analytical Chemistry, 2018, 90, 6893-6898.	3.2	3
116	Multi-channel beam-scanning imaging at kHz frame rates by Lissajous trajectory microscopy. , 2015, 9330, 933009.		2
117	Theoretical Foundation for Electric-Dipole-Allowed Chiral-Specific Fluorescence Optical Rotary Dispersion (F-ORD) from Interfacial Assemblies. Journal of Physical Chemistry Letters, 2016, 7, 4248-4252.	2.1	2
118	Synchrotron X-Ray Diffraction Dynamic Sampling for Protein Crystal Centering. IS&T International Symposium on Electronic Imaging, 2017, 29, 6-9.	0.3	2
119	Linear fitting of multi-threshold counting data with a pixel-array detector for spectral X-ray imaging. Journal of Synchrotron Radiation, 2014, 21, 1180-1187.	1.0	2
120	Spatially encoded polarization-dependent nonlinear optics. Optics Letters, 2018, 43, 5973.	1.7	2
121	Supramolecular Assembly of His-Tagged Fluorescent Protein Guests within Coiled-Coil Peptide Crystal Hosts: Three-Dimensional Ordering and Protein Thermal Stability. ACS Biomaterials Science and Engineering, 2022, 8, 1860-1866.	2.6	2
122	Synchronous-digitization for video rate polarization modulated beam scanning second harmonic generation microscopy. Proceedings of SPIE, 2015, 9330, 93300A.	0.8	1
123	Second harmonic generation correlation spectroscopy for characterizing translationally diffusing protein nanocrystals. Acta Crystallographica Section D: Structural Biology, 2016, 72, 849-859.	1.1	1
124	The molecular origins of optical nonlinearity: beyond charge-transfer effects. , 2004, 5517, 106.		0
125	Exciton Coupling Model for the Emergence of Second Harmonic Generation from Assemblies of Centrosymmetric Molecules. Journal of Physical Chemistry A, 2014, 118, 4301-4308.	1.1	0
126	Spectral x-ray diffraction using a 6 megapixel photon counting array detector. , 2015, 9401, 940109.		0

Spectral x-ray diffraction using a 6 megapixel photon counting array detector. , 2015, 9401, 940109. 126

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127	Depth-of-field extension in optical imaging for rapid crystal screening. Acta Crystallographica Section D: Structural Biology, 2021, 77, 463-470.	1.1	0
128	Mueller tensor approach for nonlinear optics in turbid media. , 2018, , .		0
129	Dynamic sparse sampling in Raman imaging. , 2018, , .		0
130	Spatiotemporal polarization modulation microscopy with a microretarder array. , 2018, , .		0
131	Connecting Mueller and Jones tensors for describing nonlinear optical conversion of unpolarized light. , 2019, , .		0
132	Spatial encoded polarization dependent nonlinear optical analysis for local tensors imaging of collagenous tissue. , 2019, , .		0
133	Multiagent Consensus Equilibrium in Molecular Structure Determination. Journal of Physical Chemistry A, 2020, 124, 9105-9112.	1.1	Ο