

# Richard A Mathies

## List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/919428/publications.pdf>

Version: 2024-02-01

195  
papers

20,182  
citations

9264

74  
h-index

11052

137  
g-index

199  
all docs

199  
docs citations

199  
times ranked

12816  
citing authors

#	ARTICLE	IF	CITATIONS
1	The first step in vision: femtosecond isomerization of rhodopsin. <i>Science</i> , 1991, 254, 412-415.	12.6	821
2	Conical intersection dynamics of the primary photoisomerization event in vision. <i>Nature</i> , 2010, 467, 440-443.	27.8	779
3	Functional Integration of PCR Amplification and Capillary Electrophoresis in a Microfabricated DNA Analysis Device. <i>Analytical Chemistry</i> , 1996, 68, 4081-4086.	6.5	741
4	Vibrationally coherent photochemistry in the femtosecond primary event of vision. <i>Science</i> , 1994, 266, 422-424.	12.6	619
5	Structural Observation of the Primary Isomerization in Vision with Femtosecond-Stimulated Raman. <i>Science</i> , 2005, 310, 1006-1009.	12.6	600
6	From Femtoseconds to Biology: Mechanism of Bacteriorhodopsin's Light-Driven Proton Pump. <i>Annual Review of Biophysics and Biophysical Chemistry</i> , 1991, 20, 491-518.	12.2	540
7	Direct observation of the femtosecond excited-state cis-trans isomerization in bacteriorhodopsin. <i>Science</i> , 1988, 240, 777-779.	12.6	539
8	Monolithic membrane valves and diaphragm pumps for practical large-scale integration into glass microfluidic devices. <i>Sensors and Actuators B: Chemical</i> , 2003, 89, 315-323.	7.8	458
9	Mapping GFP structure evolution during proton transfer with femtosecond Raman spectroscopy. <i>Nature</i> , 2009, 462, 200-204.	27.8	410
10	High-Speed DNA Genotyping Using Microfabricated Capillary Array Electrophoresis Chips. <i>Analytical Chemistry</i> , 1997, 69, 2181-2186.	6.5	333
11	Femtosecond broadband stimulated Raman spectroscopy: Apparatus and methods. <i>Review of Scientific Instruments</i> , 2004, 75, 4971-4980.	1.3	285
12	Effective Rejection of Fluorescence Interference in Raman Spectroscopy Using a Shifted Excitation Difference Technique. <i>Applied Spectroscopy</i> , 1992, 46, 707-711.	2.2	284
13	Microfabricated 384-Lane Capillary Array Electrophoresis Bioanalyzer for Ultrahigh-Throughput Genetic Analysis. <i>Analytical Chemistry</i> , 2002, 74, 5076-5083.	6.5	271
14	Fully integrated PCR-capillary electrophoresis microsystem for DNA analysis. <i>Lab on A Chip</i> , 2001, 1, 102.	6.0	270
15	Radial Capillary Array Electrophoresis Microplate and Scanner for High-Performance Nucleic Acid Analysis. <i>Analytical Chemistry</i> , 1999, 71, 5354-5361.	6.5	269
16	Wave packet theory of dynamic absorption spectra in femtosecond pump-probe experiments. <i>Journal of Chemical Physics</i> , 1990, 92, 4012-4029.	3.0	265
17	Development and evaluation of a microdevice for amino acid biomarker detection and analysis on Mars. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2005, 102, 1041-1046.	7.1	257
18	Fluorescence energy transfer dye-labeled primers for DNA sequencing and analysis. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 1995, 92, 4347-4351.	7.1	256

#	ARTICLE	IF	CITATIONS
19	High-throughput genetic analysis using microfabricated 96-sample capillary array electrophoresis microplates. Proceedings of the National Academy of Sciences of the United States of America, 1998, 95, 2256-2261.	7.1	255
20	Microfabricated bioprocessor for integrated nanoliter-scale Sanger DNA sequencing. Proceedings of the National Academy of Sciences of the United States of America, 2006, 103, 7240-7245.	7.1	252
21	High throughput DNA sequencing with a microfabricated 96-lane capillary array electrophoresis bioprocessor. Proceedings of the National Academy of Sciences of the United States of America, 2002, 99, 574-579.	7.1	251
22	Development and multiplexed control of latching pneumatic valves using microfluidic logical structures. Lab on A Chip, 2006, 6, 623.	6.0	224
23	Resonance Raman Cross-Sections and Vibronic Analysis of Rhodamine 6G from Broadband Stimulated Raman Spectroscopy. ChemPhysChem, 2008, 9, 697-699.	2.1	222
24	Optimization of High-Speed DNA Sequencing on Microfabricated Capillary Electrophoresis Channels. Analytical Chemistry, 1999, 71, 566-573.	6.5	221
25	Integrated microfluidic bioprocessor for single-cell gene expression analysis. Proceedings of the National Academy of Sciences of the United States of America, 2008, 105, 20173-20178.	7.1	216
26	Rapid and Fully Microfluidic Ebola Virus Detection with CRISPR-Cas13a. ACS Sensors, 2019, 4, 1048-1054.	7.8	215
27	Assignment and interpretation of hydrogen out-of-plane vibrations in the resonance Raman spectra of rhodopsin and bathorhodopsin. Biochemistry, 1982, 21, 384-393.	2.5	214
28	Capillary array electrophoresis: an approach to high-speed, high-throughput DNA sequencing. Nature, 1992, 359, 167-169.	27.8	214
29	High-Performance Single Cell Genetic Analysis Using Microfluidic Emulsion Generator Arrays. Analytical Chemistry, 2010, 82, 3183-3190.	6.5	210
30	Excited state geometry changes from preresonance Raman intensities: Isoprene and hexatriene. Journal of Chemical Physics, 1982, 77, 3857-3866.	3.0	203
31	High-Throughput Single Copy DNA Amplification and Cell Analysis in Engineered Nanoliter Droplets. Analytical Chemistry, 2008, 80, 3522-3529.	6.5	196
32	Ultrafast excited-state isomerization in phytochrome revealed by femtosecond stimulated Raman spectroscopy. Proceedings of the National Academy of Sciences of the United States of America, 2009, 106, 1784-1789.	7.1	190
33	Femtosecond Time-Resolved Stimulated Raman Spectroscopy: Application to the Ultrafast Internal Conversion in $\beta$ -Carotene. Journal of Physical Chemistry A, 2003, 107, 8208-8214.	2.5	184
34	Turn Geometry for Minimizing Band Broadening in Microfabricated Capillary Electrophoresis Channels. Analytical Chemistry, 2000, 72, 3030-3037.	6.5	172
35	Single-molecule fluorescence detection: autocorrelation criterion and experimental realization with phycoerythrin. Proceedings of the National Academy of Sciences of the United States of America, 1989, 86, 4087-4091.	7.1	166
36	Programmable Cell Adhesion Encoded by DNA Hybridization. Angewandte Chemie - International Edition, 2006, 45, 896-901.	13.8	165

#	ARTICLE	IF	CITATIONS
37	Wavelength Dependent Cis-Trans Isomerization in Vision. <i>Biochemistry</i> , 2001, 40, 13774-13778.	2.5	163
38	Femtosecond Stimulated Raman Spectroscopy. <i>ChemPhysChem</i> , 2016, 17, 1224-1251.	2.1	153
39	PMMA/PDMS valves and pumps for disposable microfluidics. <i>Lab on A Chip</i> , 2009, 9, 3088.	6.0	150
40	Femtosecond Time-Resolved Optical and Raman Spectroscopy of Photoinduced Spin Crossover: Temporal Resolution of Low-to-High Spin Optical Switching. <i>Journal of the American Chemical Society</i> , 2008, 130, 14105-14107.	13.7	149
41	Resonance Raman excitation profiles of bacteriorhodopsin. <i>Journal of Chemical Physics</i> , 1983, 79, 603-613.	3.0	144
42	Theory of femtosecond stimulated Raman spectroscopy. <i>Journal of Chemical Physics</i> , 2004, 121, 3632-3642.	3.0	140
43	Excited-state torsional dynamics of cis-stilbene from resonance Raman intensities. <i>Journal of Chemical Physics</i> , 1984, 81, 1552-1558.	3.0	137
44	Direct Cell Surface Modification with DNA for the Capture of Primary Cells and the Investigation of Myotube Formation on Defined Patterns. <i>Langmuir</i> , 2009, 25, 6985-6991.	3.5	135
45	Single-Molecule Detection of DNA Separations in Microfabricated Capillary Electrophoresis Chips Employing Focused Molecular Streams. <i>Analytical Chemistry</i> , 1999, 71, 5137-5145.	6.5	134
46	Femtosecond Stimulated Raman Study of Excited-State Evolution in Bacteriorhodopsin. <i>Journal of Physical Chemistry B</i> , 2005, 109, 10449-10457.	2.6	129
47	Single-Cell Multiplex Gene Detection and Sequencing with Microfluidically Generated Agarose Emulsions. <i>Angewandte Chemie - International Edition</i> , 2011, 50, 390-395.	13.8	129
48	Excited-state vibrational dynamics toward the polaron in methylammonium lead iodide perovskite. <i>Nature Communications</i> , 2018, 9, 2525.	12.8	129
49	Integrated microfluidic systems for high-performance genetic analysis. <i>Trends in Biotechnology</i> , 2009, 27, 572-581.	9.3	125
50	Microfabrication Technology for the Production of Capillary Array Electrophoresis Chips. <i>Biomedical Microdevices</i> , 1998, 1, 7-26.	2.8	121
51	Femtosecond Broadband Stimulated Raman: A New Approach for High-Performance Vibrational Spectroscopy. <i>Applied Spectroscopy</i> , 2003, 57, 1317-1323.	2.2	121
52	Raman cross section measurements in the visible and ultraviolet using an integrating cavity: Application to benzene, cyclohexane, and cacodylate. <i>Journal of Chemical Physics</i> , 1986, 84, 2068-2074.	3.0	118
53	Femtosecond Time-Resolved Stimulated Raman Spectroscopy of the S <sub>2</sub> (1Bu <sup>+</sup> ) Excited State of <sup>12</sup> C-Carotene. <i>Journal of Physical Chemistry A</i> , 2004, 108, 5921-5925.	2.5	109
54	DNA sequencing using a four-color confocal fluorescence capillary array scanner. <i>Electrophoresis</i> , 1996, 17, 1852-1859.	2.4	107

#	ARTICLE	IF	CITATIONS
55	Vibrational Assignment of Torsional Normal Modes of Rhodopsin: Probing Excited-State Isomerization Dynamics along the Reactive C11C12 Torsion Coordinate. <i>Journal of Physical Chemistry B</i> , 1998, 102, 2787-2806.	2.6	107
56	Spontaneous Emission Study of the Femtosecond Isomerization Dynamics of Rhodopsin. <i>The Journal of Physical Chemistry</i> , 1996, 100, 14526-14532.	2.9	106
57	Direct observation of the excited-state cis $\rightarrow$ trans photoisomerization of bacteriorhodopsin: Multilevel line shape theory for femtosecond dynamic hole burning and its application. <i>Journal of Chemical Physics</i> , 1989, 90, 199-208.	3.0	104
58	Ultrafast Spectroscopy of Rhodopsins – Photochemistry at Its Best!. <i>Israel Journal of Chemistry</i> , 1995, 35, 211-226.	2.3	104
59	Optofluidic analysis system for amplification-free, direct detection of Ebola infection. <i>Scientific Reports</i> , 2015, 5, 14494.	3.3	104
60	Resonance Raman analysis of the Pr and Pfr forms of phytochrome. <i>Biochemistry</i> , 1990, 29, 11141-11146.	2.5	101
61	Energy transfer primers: A new fluorescence labeling paradigm for DNA sequencing and analysis. <i>Nature Medicine</i> , 1996, 2, 246-249.	30.7	101
62	Direct observation of the ultrafast intersystem crossing in tris(2,2'-bipyridine)ruthenium(II) using femtosecond stimulated Raman spectroscopy. <i>Molecular Physics</i> , 2006, 104, 1275-1282.	1.7	99
63	Chiral separation of fluorescamine-labeled amino acids using microfabricated capillary electrophoresis devices for extraterrestrial exploration. <i>Journal of Chromatography A</i> , 2003, 1021, 191-199.	3.7	95
64	Lifting Gate Polydimethylsiloxane Microvalves and Pumps for Microfluidic Control. <i>Analytical Chemistry</i> , 2012, 84, 2067-2071.	6.5	94
65	Excited state structure and femtosecond ring-opening dynamics of 1,3-cyclohexadiene from absolute resonance Raman intensities. <i>Journal of Chemical Physics</i> , 1989, 90, 4274-4281.	3.0	92
66	Retinal Analog Study of the Role of Steric Interactions in the Excited State Isomerization Dynamics of Rhodopsin. <i>Biochemistry</i> , 1996, 35, 16230-16240.	2.5	92
67	Supramolecular Ga <sub>4</sub> L <sub>6</sub> Cage Photosensitizes 1,3-Rearrangement of Encapsulated Guest via Photoinduced Electron Transfer. <i>Journal of the American Chemical Society</i> , 2015, 137, 10128-10131.	13.7	92
68	Multiplexed efficient on-chip sample preparation and sensitive amplification-free detection of Ebola virus. <i>Biosensors and Bioelectronics</i> , 2017, 91, 489-496.	10.1	91
69	Enhanced Amine and Amino Acid Analysis Using Pacific Blue and the Mars Organic Analyzer Microchip Capillary Electrophoresis System. <i>Analytical Chemistry</i> , 2009, 81, 2537-2544.	6.5	87
70	Femtosecond Stimulated Raman Exposes the Role of Vibrational Coherence in Condensed-Phase Photoreactivity. <i>Accounts of Chemical Research</i> , 2016, 49, 616-625.	15.6	83
71	Excited-state structure and electronic dephasing time of Nile blue from absolute resonance Raman intensities. <i>Journal of Chemical Physics</i> , 1992, 96, 8037-8045.	3.0	81
72	Immunomagnetic bead-based cell concentration microdevice for dilute pathogen detection. <i>Biomedical Microdevices</i> , 2008, 10, 909-917.	2.8	81

#	ARTICLE	IF	CITATIONS
73	Determination of Pericyclic Photochemical Reaction Dynamics with Resonance Raman Spectroscopy. <i>The Journal of Physical Chemistry</i> , 1994, 98, 5597-5606.	2.9	78
74	Quantitation of homogeneous and inhomogeneous broadening mechanisms in trans- $\beta$ -stilbene using absolute resonance Raman intensities. <i>Journal of Chemical Physics</i> , 1985, 83, 5000-5006.	3.0	76
75	Probing Interfacial Electron Transfer in Coumarin 343 Sensitized TiO <sub>2</sub> Nanoparticles with Femtosecond Stimulated Raman. <i>Journal of the American Chemical Society</i> , 2009, 131, 15630-15632.	13.7	75
76	Evidence for a vibrational phase-dependent isotope effect on the photochemistry of vision. <i>Nature Chemistry</i> , 2018, 10, 449-455.	13.6	75
77	Microsatellite-based cancer detection using capillary array electrophoresis and energy-transfer fluorescent primers. <i>Electrophoresis</i> , 1997, 18, 1742-1749.	2.4	73
78	Femtosecond Time-Resolved Stimulated Raman Reveals the Birth of Bacteriorhodopsin <sup>TM</sup> s J and K Intermediates. <i>Journal of the American Chemical Society</i> , 2009, 131, 7592-7597.	13.7	73
79	Ultra-high throughput rotary capillary array electrophoresis scanner for fluorescent DNA sequencing and analysis. <i>Electrophoresis</i> , 1999, 20, 1508-1517.	2.4	72
80	Origin of negative and dispersive features in anti-Stokes and resonance femtosecond stimulated Raman spectroscopy. <i>Journal of Chemical Physics</i> , 2008, 129, 064507.	3.0	71
81	Protein Dynamics in the Bacteriorhodopsin Photocycle: A Nanosecond Step-Scan FTIR Investigation of the KL to L Transition. <i>The Journal of Physical Chemistry</i> , 1996, 100, 16026-16033.	2.9	70
82	Nitric Oxide Binding to Prokaryotic Homologs of the Soluble Guanylate Cyclase $\beta$ 1 H-NOX Domain. <i>Journal of Biological Chemistry</i> , 2006, 281, 21892-21902.	3.4	66
83	Femtosecond Spectroscopy of a 13-Demethylrhodopsin Visual Pigment Analogue: The Role of Nonbonded Interactions in the Isomerization Process. <i>The Journal of Physical Chemistry</i> , 1996, 100, 17388-17394.	2.9	65
84	Probing structural evolution along multidimensional reaction coordinates with femtosecond stimulated Raman spectroscopy. <i>Physical Chemistry Chemical Physics</i> , 2012, 14, 405-414.	2.8	65
85	Universal Microfluidic Automaton for Autonomous Sample Processing: Application to the Mars Organic Analyzer. <i>Analytical Chemistry</i> , 2013, 85, 7682-7688.	6.5	65
86	Microfluidic Device for Electric Field-Driven Single-Cell Capture and Activation. <i>Analytical Chemistry</i> , 2005, 77, 6935-6941.	6.5	64
87	Multichannel Capillary Electrophoresis Microdevice and Instrumentation for in Situ Planetary Analysis of Organic Molecules and Biomarkers. <i>Analytical Chemistry</i> , 2010, 82, 2372-2379.	6.5	63
88	Characterization of a Conical Intersection in a Charge-Transfer Dimer with Two-Dimensional Time-Resolved Stimulated Raman Spectroscopy. <i>Journal of Physical Chemistry A</i> , 2014, 118, 4955-4965.	2.5	63
89	Fluorescence and Resonance Raman Spectra of the Aqueous Solvated Electron. <i>Journal of Physical Chemistry A</i> , 2001, 105, 10952-10960.	2.5	62
90	Polycyclic Aromatic Hydrocarbon Analysis with the Mars Organic Analyzer Microchip Capillary Electrophoresis System. <i>Analytical Chemistry</i> , 2009, 81, 790-796.	6.5	61

#	ARTICLE	IF	CITATIONS
91	Microfluidic Serial Dilution Circuit. <i>Analytical Chemistry</i> , 2006, 78, 7522-7527.	6.5	60
92	An integrated microfluidic processor for single nucleotide polymorphism-based DNA computing. <i>Lab on A Chip</i> , 2005, 5, 1033.	6.0	59
93	Self-assembled cellular microarrays patterned using DNA barcodes. <i>Lab on A Chip</i> , 2007, 7, 1442.	6.0	59
94	Pneumatically actuated microvalve circuits for programmable automation of chemical and biochemical analysis. <i>Lab on A Chip</i> , 2016, 16, 812-819.	6.0	59
95	Micropneumatic Digital Logic Structures for Integrated Microdevice Computation and Control. <i>Journal of Microelectromechanical Systems</i> , 2007, 16, 1378-1385.	2.5	57
96	<b>PRIMARY PHOTOCHEMISTRY OF BACTERIORHODOPSIN: COMPARISON OF FOURIER TRANSFORM INFRARED DIFFERENCE SPECTRA WITH RESONANCE RAMAN SPECTRA</b> . <i>Photochemistry and Photobiology</i> , 1984, 40, 675-679.	2.5	56
97	Resonance Raman Structural Evidence that the Cis-to-Trans Isomerization in Rhodopsin Occurs in Femtoseconds. <i>Journal of Physical Chemistry B</i> , 2001, 105, 1240-1249.	2.6	56
98	Chromophore Structure in Lumirhodopsin and Metarhodopsin I by Time-Resolved Resonance Raman Microchip Spectroscopy. <i>Biochemistry</i> , 2001, 40, 7929-7936.	2.5	56
99	Development of a Tunable Femtosecond Stimulated Raman Apparatus and Its Application to $\hat{I}^2$ -Carotene. <i>Journal of Physical Chemistry B</i> , 2008, 112, 4826-4832.	2.6	56
100	High-resolution capillary array electrophoretic sizing of multiplexed short tandem repeat loci using energy-transfer fluorescent primers. <i>Electrophoresis</i> , 1996, 17, 1485-1490.	2.4	55
101	Direct Observation of Anharmonic Coupling in the Time Domain with Femtosecond Stimulated Raman Scattering. <i>Physical Review Letters</i> , 2006, 96, 238303.	7.8	55
102	Critical Role of Methylammonium Librational Motion in Methylammonium Lead Iodide (CH <sub>3</sub> NH <sub>3</sub> PbI <sub>3</sub> ) Perovskite Photochemistry. <i>Nano Letters</i> , 2017, 17, 4151-4157.	9.1	55
103	End-to-end automated microfluidic platform for synthetic biology: from design to functional analysis. <i>Journal of Biological Engineering</i> , 2016, 10, 3.	4.7	54
104	Femtosecond time-resolved spectroscopy of the primary photochemistry of phytochrome. <i>Biospectroscopy</i> , 1997, 3, 421-433.	0.6	53
105	A digital microfluidic platform for the automation of quantitative biomolecular assays. <i>Lab on A Chip</i> , 2010, 10, 685-691.	6.0	53
106	RESONANCE RAMAN SPECTRA OF THE P <sub>r</sub> -FORM OF PHYTOCHROME. <i>Photochemistry and Photobiology</i> , 1988, 48, 129-136.	2.5	52
107	Raman spectroscopy with intensified vidicon detectors: A study of intact bovine lens proteins. <i>Journal of Raman Spectroscopy</i> , 1978, 7, 349-352.	2.5	50
108	High speed single nucleotide polymorphism typing of a hereditary haemochromatosis mutation with capillary array electrophoresis microplates. <i>Electrophoresis</i> , 2000, 21, 2352-2358.	2.4	50

#	ARTICLE	IF	CITATIONS
109	Digitally programmable microfluidic automaton for multiscale combinatorial mixing and sample processing. <i>Lab on A Chip</i> , 2013, 13, 288-296.	6.0	50
110	Organic amine biomarker detection in the Yungay region of the Atacama Desert with the Urey instrument. <i>Journal of Geophysical Research</i> , 2007, 112, .	3.3	49
111	Dependence of line shapes in femtosecond broadband stimulated Raman spectroscopy on pump-probe time delay. <i>Journal of Chemical Physics</i> , 2005, 122, 024505.	3.0	47
112	Integration of programmable microfluidics and on-chip fluorescence detection for biosensing applications. <i>Biomicrofluidics</i> , 2014, 8, 054111.	2.4	47
113	Single-Cell Forensic Short Tandem Repeat Typing within Microfluidic Droplets. <i>Analytical Chemistry</i> , 2014, 86, 703-712.	6.5	45
114	Absolute resonance Raman intensities demonstrate that the spectral broadening induced by the $\beta$ -ionone ring in retinal is homogeneous. <i>Journal of Chemical Physics</i> , 1986, 84, 633-640.	3.0	44
115	DNA-barcode directed capture and electrochemical metabolic analysis of single mammalian cells on a microelectrode array. <i>Lab on A Chip</i> , 2009, 9, 2010.	6.0	44
116	Chromophore Dynamics in the PYP Photocycle from Femtosecond Stimulated Raman Spectroscopy. <i>Journal of Physical Chemistry B</i> , 2014, 118, 659-667.	2.6	44
117	Classical theory for real-time femtosecond probing of the $\text{NaI}^*$ photodissociation. <i>Journal of Chemical Physics</i> , 1989, 90, 6146-6150.	3.0	43
118	Multiplex dsDNA Fragment Sizing Using Dimeric Intercalation Dyes and Capillary Array Electrophoresis: Ionic Effects on the Stability and Electrophoretic Mobility of DNA-Dye Complexes. <i>Analytical Chemistry</i> , 1997, 69, 1355-1363.	6.5	43
119	Rapid fabrication of nickel molds for prototyping embossed plastic microfluidic devices. <i>Lab on A Chip</i> , 2013, 13, 1468.	6.0	42
120	Reactive and unreactive pathways in a photochemical ring opening reaction from 2D femtosecond stimulated Raman. <i>Physical Chemistry Chemical Physics</i> , 2015, 17, 9231-9240.	2.8	42
121	Genotyping Energy-Transfer-Cassette-labeled Short-Tandem-Repeat Amplicons with Capillary Array Electrophoresis Microchannel Plates. <i>Clinical Chemistry</i> , 2001, 47, 1614-1621.	3.2	41
122	Microfluidic System for Detection of Viral RNA in Blood Using a Barcode Fluorescence Reporter and a Photocleavable Capture Probe. <i>Analytical Chemistry</i> , 2017, 89, 12433-12440.	6.5	41
123	Ultraviolet Resonance Raman Examination of the Light-Induced Protein Structural Changes in Rhodopsin Activation. <i>Biochemistry</i> , 1997, 36, 13153-13159.	2.5	40
124	Generation of narrow-bandwidth picosecond visible pulses from broadband femtosecond pulses for femtosecond stimulated Raman. <i>Applied Physics Letters</i> , 2006, 89, 121124.	3.3	40
125	Inline Injection Microdevice for Attomole-Scale Sanger DNA Sequencing. <i>Analytical Chemistry</i> , 2007, 79, 4499-4506.	6.5	40
126	Microfluidic Linear Hydrogel Array for Multiplexed Single Nucleotide Polymorphism (SNP) Detection. <i>Analytical Chemistry</i> , 2015, 87, 3165-3170.	6.5	40



#	ARTICLE	IF	CITATIONS
127	Photoactivated Bioconjugation Between <i>ortho</i> -Azidophenols and Anilines: A Facile Approach to Biomolecular Photopatterning. <i>Journal of the American Chemical Society</i> , 2014, 136, 12600-12606.	13.7	39
128	Homogeneity of Phytochrome Cph1 Vibronic Absorption Revealed by Resonance Raman Intensity Analysis. <i>Journal of the American Chemical Society</i> , 2009, 131, 13946-13948.	13.7	38
129	Venus, an Astrobiology Target. <i>Astrobiology</i> , 2021, 21, 1163-1185.	3.0	38
130	Integrated Affinity Capture, Purification, and Capillary Electrophoresis Microdevice for Quantitative Double-Stranded DNA Analysis. <i>Analytical Chemistry</i> , 2007, 79, 8549-8556.	6.5	36
131	Photoexcited structural dynamics of an azobenzene analog 4-nitro-4 <sup>ε</sup> -dimethylamino-azobenzene from femtosecond stimulated Raman. <i>Physical Chemistry Chemical Physics</i> , 2012, 14, 6298.	2.8	36
132	Picosecond time-resolved Raman system for studying photochemical reaction dynamics: application to the primary events in vision. <i>Journal of Raman Spectroscopy</i> , 1999, 30, 777-783.	2.5	35
133	Microvalve Enabled Digital Microfluidic Systems for High-Performance Biochemical and Genetic Analysis. <i>Journal of the Association for Laboratory Automation</i> , 2010, 15, 455-463.	2.8	35
134	Feasibility of Detecting Bioorganic Compounds in Enceladus Plumes with the Enceladus Organic Analyzer. <i>Astrobiology</i> , 2017, 17, 902-912.	3.0	35
135	High-Pressure Gel Loader for Capillary Array Electrophoresis Microchannel Plates. <i>BioTechniques</i> , 2001, 31, 1150-1154.	1.8	34
136	Polymorphism Ratio Sequencing: A New Approach for Single Nucleotide Polymorphism Discovery and Genotyping. <i>Genome Research</i> , 2003, 13, 287-293.	5.5	34
137	Application of the Mars Organic Analyzer to Nucleobase and Amine Biomarker Detection. <i>Astrobiology</i> , 2006, 6, 824-837.	3.0	34
138	Polymerase Chain Reaction-Capillary Electrophoresis Genetic Analysis Microdevice with In-Line Affinity Capture Sample Injection. <i>Analytical Chemistry</i> , 2009, 81, 1371-1377.	6.5	34
139	Vibrational structure of the S <sub>2</sub> (1Bu) excited state of diphenyloctatetraene observed by femtosecond stimulated Raman spectroscopy. <i>Chemical Physics Letters</i> , 2003, 382, 81-86.	2.6	33
140	Capillary Electrophoresis Analysis of Organic Amines and Amino Acids in Saline and Acidic Samples Using the Mars Organic Analyzer. <i>Astrobiology</i> , 2009, 9, 823-831.	3.0	33
141	Single molecule quantitation and sequencing of rare translocations using microfluidic nested digital PCR. <i>Nucleic Acids Research</i> , 2013, 41, e159-e159.	14.5	33
142	Direct Attachment of Microbial Organisms to Material Surfaces Through Sequence-Specific DNA Hybridization. <i>Advanced Materials</i> , 2012, 24, 2380-2385.	21.0	32
143	A coherent picture of vision. <i>Nature Chemistry</i> , 2015, 7, 945-947.	13.6	32
144	Simple interpretation of dephasing in absorption and resonance Raman theory. <i>Journal of Chemical Physics</i> , 1986, 85, 3744-3748.	3.0	31

#	ARTICLE	IF	CITATIONS
145	Analysis of carbonaceous biomarkers with the Mars Organic Analyzer microchip capillary electrophoresis system: Aldehydes and ketones. <i>Electrophoresis</i> , 2010, 31, 3642-3649.	2.4	30
146	Electron Transfer Dynamics of Triphenylamine Dyes Bound to TiO <sub>2</sub> Nanoparticles from Femtosecond Stimulated Raman Spectroscopy. <i>Journal of Physical Chemistry C</i> , 2013, 117, 6990-6997.	3.1	29
147	Femtosecond Raman-induced Kerr effect spectroscopy. <i>Journal of Raman Spectroscopy</i> , 2008, 39, 1526-1530.	2.5	26
148	Analysis of Carbonaceous Biomarkers with the Mars Organic Analyzer Microchip Capillary Electrophoresis System: Carboxylic Acids. <i>Astrobiology</i> , 2011, 11, 519-528.	3.0	26
149	Optimally shaped narrowband picosecond pulses for femtosecond stimulated Raman spectroscopy. <i>Optics Express</i> , 2013, 21, 21685.	3.4	26
150	Detection of mitochondrial deoxyribonucleic acid alterations in urine from urothelial cell carcinoma patients. <i>International Journal of Cancer</i> , 2012, 131, 158-164.	5.1	23
151	Energy-Transfer Cassette Labeling for Capillary Array Electrophoresis Short Tandem Repeat DNA Fragment Sizing. <i>Bioconjugate Chemistry</i> , 2001, 12, 493-500.	3.6	22
152	Structural Dynamics of a Noncovalent Charge Transfer Complex from Femtosecond Stimulated Raman Spectroscopy. <i>Journal of Physical Chemistry B</i> , 2012, 116, 10453-10460.	2.6	22
153	Low Frequency Resonant Impulsive Raman Modes Reveal Inversion Mechanism for Azobenzene. <i>Journal of Physical Chemistry A</i> , 2013, 117, 11472-11478.	2.5	22
154	Polarization dependence of vibrational coupling signals in femtosecond stimulated Raman spectroscopy. <i>Journal of Chemical Physics</i> , 2007, 127, 124501.	3.0	21
155	Conformational Homogeneity and Excited-State Isomerization Dynamics of the Bilin Chromophore in Phytochrome Cph1 from Resonance Raman Intensities. <i>Biophysical Journal</i> , 2012, 102, 709-717.	0.5	21
156	Microfluidic hydrogel arrays for direct genotyping of clinical samples. <i>Biosensors and Bioelectronics</i> , 2016, 79, 371-378.	10.1	21
157	Science Objectives for Flagship-Class Mission Concepts for the Search for Evidence of Life at Enceladus. <i>Astrobiology</i> , 2022, 22, 685-712.	3.0	21
158	Cellular Microfabrication: Observing Intercellular Interactions Using Lithographically-Defined DNA Capture Sequences. <i>Langmuir</i> , 2012, 28, 8120-8126.	3.5	20
159	8,16- and 8,18-methanobacteriorhodopsin. Synthesis and spectroscopy of 8,16- and 8,18-methanoretinal and their interaction with bacterioopsin. <i>Recueil Des Travaux Chimiques Des Pays-Bas</i> , 1989, 108, 83-93.	0.0	19
160	RESONANCE RAMAN SPECTRA OF BACTERIORHODOPSIN MUTANTS WITH SUBSTITUTIONS AT ASP-85, ASP-96, AND ARG-82. <i>Photochemistry and Photobiology</i> , 1991, 53, 341-346.	2.5	19
161	Characterizing organic particle impacts on inert metal surfaces: Foundations for capturing organic molecules during hypervelocity transits of Enceladus plumes. <i>Meteoritics and Planetary Science</i> , 2020, 55, 465-479.	1.6	19
162	Minimizing inhibition of PCR-STR typing using digital agarose droplet microfluidics. <i>Forensic Science International: Genetics</i> , 2015, 14, 203-209.	3.1	18

#	ARTICLE	IF	CITATIONS
163	Difference Bands in Time-Resolved Femtosecond Stimulated Raman Spectra of Photoexcited Intermolecular Electron Transfer from Chloronaphthalene to Tetracyanoethylene. <i>Journal of Physical Chemistry A</i> , 2018, 122, 3594-3605.	2.5	18
164	Microfabricated Linear Hydrogel Microarray for Single-Nucleotide Polymorphism Detection. <i>Analytical Chemistry</i> , 2012, 84, 963-970.	6.5	16
165	Exciton Mobility in Organic Photovoltaic Heterojunctions from Femtosecond Stimulated Raman. <i>Journal of Physical Chemistry Letters</i> , 2015, 6, 2919-2923.	4.6	16
166	Non-Bonded Interactions Drive the Sub-Picosecond Bilin Photoisomerization in the P <sub>fr</sub> State of Phytochrome Cph1. <i>ChemPhysChem</i> , 2016, 17, 369-374.	2.1	15
167	Photons, Femtoseconds and Dipolar Interactions: A Molecular Picture of the Primary Events in Vision. <i>Novartis Foundation Symposium</i> , 1999, 224, 70-101.	1.1	15
168	Molecular Orientation and Optical Properties of 3,3'-Diethylthiatricarbocyanine Iodide Adsorbed to Gold Surfaces: Consequences for Surface-Enhanced Resonance Raman Spectroscopy. <i>Journal of Physical Chemistry C</i> , 2015, 119, 9980-9987.	3.1	14
169	A three-wavelength labeling approach for DNA sequencing using energy transfer primers and capillary electrophoresis. <i>Electrophoresis</i> , 1998, 19, 1403-1414.	2.4	13
170	Excited-state structure and photochemical ring-opening dynamics of 1,3,5-cyclooctatriene from absolute resonance Raman intensities. <i>Journal of Chemical Physics</i> , 1994, 100, 2492-2504.	3.0	12
171	Monitoring transient cell-to-cell interactions in a multi-layered and multi-functional allergy-on-a-chip system. <i>Lab on A Chip</i> , 2019, 19, 1916-1921.	6.0	12
172	Fabrication of high-quality glass microfluidic devices for bioanalytical and space flight applications. <i>MethodsX</i> , 2020, 7, 101043.	1.6	12
173	A 77K cold stage for Raman microprobes and optical microscopy. <i>Review of Scientific Instruments</i> , 1989, 60, 2628-2630.	1.3	11
174	ULTRAVIOLET RESONANCE RAMAN SPECTROSCOPY OF BACTERIORHODOPSIN. <i>Photochemistry and Photobiology</i> , 1990, 52, 605-607.	2.5	10
175	Feasibility of Enceladus plume biosignature analysis: Successful capture of organic ice particles in hypervelocity impacts. <i>Meteoritics and Planetary Science</i> , 2020, 55, .	1.6	10
176	Quantitative evaluation of the feasibility of sampling the ice plumes at Enceladus for biomarkers of extraterrestrial life. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	7.1	9
177	From femtoseconds to biology: Mechanism of bacteriorhodopsin's light-driven proton pump. <i>Journal of Chemical Sciences</i> , 1991, 103, 283-293.	1.5	9
178	Operation of pneumatically-actuated membrane-based microdevices for in situ analysis of extraterrestrial organic molecules after prolonged storage and in multiple orientations with respect to Earth's gravitational field. <i>Sensors and Actuators B: Chemical</i> , 2018, 272, 229-235.	7.8	8
179	High-performance detection of somatic D-loop mutation in urothelial cell carcinoma patients by polymorphism ratio sequencing. <i>Journal of Molecular Medicine</i> , 2016, 94, 1015-1024.	3.9	7
180	Optimization of Fluorescence Labeling of Trace Analytes: Application to Amino Acid Biosignature Detection with Pacific Blue. <i>Analytical Chemistry</i> , 2022, 94, 1240-1247.	6.5	7

#	ARTICLE	IF	CITATIONS
181	Time-Resolved Ultraviolet Resonance Raman of Protein Structural Changes in The KI-Intermediate Of Bacteriorhodopsin. <i>Laser Chemistry</i> , 1999, 19, 165-168.	0.5	6
182	On the Feasibility of Informative Biosignature Measurements Using an Enceladus Plume Organic Analyzer. <i>Planetary Science Journal</i> , 2021, 2, 163.	3.6	6
183	Resonance Raman Characterization of Tetracene Monomer and Nanocrystals: Excited State Lattice Distortions With Implications For Efficient Singlet Fission. <i>Journal of Physical Chemistry A</i> , 2019, 123, 3863-3875.	2.5	5
184	Method for detecting and quantitating capture of organic molecules in hypervelocity impacts. <i>MethodsX</i> , 2021, 8, 101239.	1.6	5
185	Single cell measurement of telomerase expression and splicing using microfluidic emulsion cultures. <i>Nucleic Acids Research</i> , 2015, 43, e104-e104.	14.5	3
186	Ultra-high throughput rotary capillary array electrophoresis scanner for fluorescent DNA sequencing and analysis. <i>Electrophoresis</i> , 1999, 20, 1508-1517.	2.4	3
187	High speed single nucleotide polymorphism typing of a hereditary haemochromatosis mutation with capillary array electrophoresis microplates. <i>Electrophoresis</i> , 2000, 21, 2352-2358.	2.4	3
188	Femtosecond Stimulated Raman Spectroscopy. <i>ChemPhysChem</i> , 2016, 17, 1217-1217.	2.1	2
189	Femtosecond time-resolved spectroscopy of the primary photochemistry of phytochrome. , 1997, 3, 421.		1
190	Femtosecond broadband Stimulated Raman Spectroscopy. , 2008, , .		0
191	Femtosecond Stimulated Raman Spectroscopy. , 2010, , .		0
192	Conical intersection dynamics in a rhodopsin analog: 9-cis isorhodopsin. , 2011, , .		0
193	Conical intersection dynamics in Rhodopsin and its analog isorhodopsin. , 2013, , .		0
194	Forensic Typing of Single Cells Using Droplet Microfluidics. , 2016, , 71-94.		0
195	THE FIRST STEP IN VISION: VISUALIZING WAVEPACKET MOTION THROUGH A CONICAL INTERSECTION. , 2014, , .		0