Martin T Zanni

List of Publications by Citations

127 papers	7,431 citations	43 h-index	84 g-index
267 ext. papers	8,289 ext. citations	7.3 avg, IF	6.28 L-index

#	Paper	IF	Citations
127	Concepts and Methods of 2D Infrared Spectroscopy **2011**,		972
126	How to turn your pump-probe instrument into a multidimensional spectrometer: 2D IR and Vis spectroscopies via pulse shaping. *Physical Chemistry Chemical Physics*, **2009**, 11, 748-61	3.6	300
125	Two-dimensional IR spectroscopy and isotope labeling defines the pathway of amyloid formation with residue-specific resolution. *Proceedings of the National Academy of Sciences of the United States of America*, **2009**, 106, 6614-9	11.5	251
124	Automated 2D IR spectroscopy using a mid-IR pulse shaper and application of this technology to the human islet amyloid polypeptide. *Proceedings of the National Academy of Sciences of the United States of America*, **2007**, 104, 14197-202	11.5	245
123	Two-dimensional heterodyned and stimulated infrared photon echoes of N-methylacetamide-D. *Journal of Chemical Physics*, **2001**, 114, 4579	3.9	232
122	Picosecond dynamics of a membrane protein revealed by 2D IR. *Proceedings of the National Academy of Sciences of the United States of America*, **2006**, 103, 3528-33	11.5	190
121	Mechanism of IAPP amyloid fibril formation involves an intermediate with a transient β-sheet. *Proceedings of the National Academy of Sciences of the United States of America*, **2013**, 110, 19285-90	11.5	182
120	Heterodyned Two-Dimensional Infrared Spectroscopy of Solvent-Dependent Conformations of Acetylproline-NH2 *Journal of Physical Chemistry B*, **2001**, 105, 6520-6535	3.4	178
119	How to Get Insight into Amyloid Structure and Formation from Infrared Spectroscopy. *Journal of Physical Chemistry Letters*, **2014**, 5, 1984-1993	6.4	146
118	Two-dimensional infrared spectroscopy reveals the complex behaviour of an amyloid fibril inhibitor. *Nature Chemistry*, **2012**, 4, 355-60	17.6	145
117	Adding a dimension to the infrared spectra of interfaces using heterodyne detected 2D sum-frequency generation (HD 2D SFG) spectroscopy. *Proceedings of the National Academy of Sciences of the United States of America*, **2011**, 108, 20902-7	11.5	144
116	Watching Proteins Wiggle: Mapping Structures with Two-Dimensional Infrared Spectroscopy. *Chemical Reviews*, **2017**, 117, 10726-10759	68.1	143
115	Inter and Intrastrand Vibrational Coupling in DNA Studied with Heterodyned 2D-IR Spectroscopy. *Journal of Physical Chemistry B*, **2003**, 107, 9165-9169	3.4	143
114	Instantaneous ion configurations in the K+ ion channel selectivity filter revealed by 2D IR spectroscopy. *Science*, **2016**, 353, 1040-1044	33.3	142
113	Effects of Vibrational Frequency Correlations on Two-Dimensional Infrared Spectra *Journal of Physical Chemistry A*, **2002**, 106, 962-972	2.8	141
112	DNA vibrational coupling revealed with two-dimensional infrared spectroscopy: insight into why vibrational spectroscopy is sensitive to DNA structure. *Journal of Physical Chemistry B*, **2006**, 110, 13991-14000	3.4	133
111	Femtosecond pulse shaping directly in the mid-IR using acousto-optic modulation. *Optics Letters*, **2006**, 31, 838-40	3	128

110	Two-dimensional IR spectroscopy and segmental 13C labeling reveals the domain structure of human D-crystallin amyloid fibrils. *Proceedings of the National Academy of Sciences of the United States of America*, **2012**, 109, 3329-34	11.5	119
109	Facile collection of two-dimensional electronic spectra using femtosecond pulse-shaping Technology. *Optics Express*, **2007**, 15, 16681-9	3.3	117
108	Tracking fiber formation in human islet amyloid polypeptide with automated 2D-IR spectroscopy. *Journal of the American Chemical Society*, **2008**, 130, 6698-9	16.4	112
107	Gating mechanism of the influenza A M2 channel revealed by 1D and 2D IR spectroscopies. *Structure*, **2009**, 17, 247-54	5.2	108
106	2DIR spectroscopy of human amylin fibrils reflects stable sheet structure. *Journal of the American Chemical Society*, **2011**, 133, 16062-71	16.4	99
105	Stable and metastable states of human amylin in solution. *Biophysical Journal*, **2010**, 99, 2208-16	2.9	91
104	Residue-specific structural kinetics of proteins through the union of isotope labeling, mid-IR pulse shaping, and coherent 2D IR spectroscopy. *Methods*, **2010**, 52, 12-22	4.6	90
103	Vibrational Spectroscopic Map, Vibrational Spectroscopy, and Intermolecular Interaction. *Chemical Reviews*, **2020**, 120, 7152-7218	68.1	87
102	Structural motif of polyglutamine amyloid fibrils discerned with mixed-isotope infrared spectroscopy. *Proceedings of the National Academy of Sciences of the United States of America*, **2014**, 111, 5796-801	11.5	86
101	Time-resolved studies define the nature of toxic IAPP intermediates, providing insight for anti-amyloidosis therapeutics. *ELife*, **2016**, 5,	8.9	85
100	A pulse sequence for directly measuring the anharmonicities of coupled vibrations: Two-quantum two-dimensional infrared spectroscopy. *Journal of Chemical Physics*, **2004**, 120, 8067-78	3.9	84
99	2D IR line shapes probe ovispirin peptide conformation and depth in lipid bilayers. *Journal of the American Chemical Society*, **2010**, 132, 2832-8	16.4	82
98	Strategies for extracting structural information from 2D IR spectroscopy of amyloid: application to islet amyloid polypeptide. *Journal of Physical Chemistry B*, **2009**, 113, 15679-91	3.4	81
97	Generation and characterization of phase and amplitude shaped femtosecond mid-IR pulses. *Optics Express*, **2006**, 14, 13120-30	3.3	81
96	Deamidation accelerates amyloid formation and alters amylin fiber structure. *Journal of the American Chemical Society*, **2012**, 134, 12658-67	16.4	79
95	Parallel sheet vibrational couplings revealed by 2D IR spectroscopy of an isotopically labeled macrocycle: quantitative benchmark for the interpretation of amyloid and protein infrared spectra. *Journal of the American Chemical Society*, **2012**, 134, 19118-28	16.4	78
94	Energy transfer pathways in semiconducting carbon nanotubes revealed using two-dimensional white-light spectroscopy. *Nature Communications*, **2015**, 6, 6732	17.4	68
93	Efficient microwave-assisted synthesis of human islet amyloid polypeptide designed to facilitate the specific incorporation of labeled amino acids. *Organic Letters*, **2010**, 12, 4848-51	6.2	66

92	Quantification of transition dipole strengths using 1D and 2D spectroscopy for the identification of molecular structures via exciton delocalization: application to helices. *Journal of Chemical Physics*, **2012**, 137, 184202	3.9	65
91	Two-dimensional infrared spectroscopy provides evidence of an intermediate in the membrane-catalyzed assembly of diabetic amyloid. *Journal of Physical Chemistry B*, **2009**, 113, 2498-505	3.4	61
90	Evidence for coupling between nitrile groups using DNA templates: a promising new method for monitoring structures with infrared spectroscopy. *Journal of Physical Chemistry B*, **2008**, 112, 1336-8	3.4	61
89	Structural disorder of the CD3zeta transmembrane domain studied with 2D IR spectroscopy and molecular dynamics simulations. *Journal of Physical Chemistry B*, **2006**, 110, 24740-9	3.4	56
88	Two-dimensional sum-frequency generation reveals structure and dynamics of a surface-bound peptide. *Journal of the American Chemical Society*, **2014**, 136, 956-62	16.4	53
87	Broadband 2D electronic spectrometer using white light and pulse shaping: noise and signal evaluation at 1 and 100 kHz. *Optics Express*, **2017**, 25, 7869-7883	3.3	52
86	Solution structures of rat amylin peptide: simulation, theory, and experiment. *Biophysical Journal*, **2010**, 98, 443-51	2.9	49
85	Two-Dimensional Spectroscopy Is Being Used to Address Core Scientific Questions in Biology and Materials Science. *Journal of Physical Chemistry B*, **2018**, 122, 1771-1780	3.4	45
84	Invariance of Water Permeance through Size-Differentiated Graphene Oxide Laminates. *ACS Nano*, **2018**, 12, 7855-7865	16.7	43
83	Extracting structural information from the polarization dependence of one- and two-dimensional sum frequency generation spectra. *Journal of Physical Chemistry A*, **2013**, 117, 5875-90	2.8	43
82	A strongly absorbing class of non-natural labels for probing protein electrostatics and solvation with FTIR and 2D IR spectroscopies. *Journal of Physical Chemistry B*, **2013**, 117, 5009-18	3.4	43
81	Probing Site-Specific Structural Information of Peptides at Model Membrane Interface In Situ. *Journal of the American Chemical Society*, **2015**, 137, 10190-8	16.4	41
80	Amyloid fiber formation in human -Crystallin induced by UV-B photodamage. *Biochemistry*, **2013**, 52, 6169-81	3.2	41
79	Signal enhancement and background cancellation in collinear two-dimensional spectroscopies. *Optics Letters*, **2008**, 33, 1371-3	3	41
78	A Free Energy Barrier Caused by the Refolding of an Oligomeric Intermediate Controls the Lag Time of Amyloid Formation by hIAPP. *Journal of the American Chemical Society*, **2017**, 139, 16748-16758	16.4	40
77	Amyloid found in human cataracts with two-dimensional infrared spectroscopy. *Proceedings of the National Academy of Sciences of the United States of America*, **2019**, 116, 6602-6607	11.5	40
76	Dye aggregation identified by vibrational coupling using 2D IR spectroscopy. *Journal of Chemical Physics*, **2015**, 142, 212449	3.9	40
75	Transition Dipoles from 1D and 2D Infrared Spectroscopy Help Reveal the Secondary Structures of Proteins: Application to Amyloids. *Journal of Physical Chemistry B*, **2015**, 119, 14065-75	3.4	40

74	Not All β Sheets Are the Same: Amyloid Infrared Spectra, Transition Dipole Strengths, and Couplings Investigated by 2D IR Spectroscopy. *Journal of Physical Chemistry B*, **2017**, 121, 8935-8945	3.4	39
73	Photoexcitation dynamics of coupled semiconducting carbon nanotube thin films. *Nano Letters*, **2013**, 13, 1495-501	11.5	38
72	Spectroscopic Signature for Stable βAmyloid Fibrils versus β Sheet-Rich Oligomers. *Journal of Physical Chemistry B*, **2018**, 122, 144-153	3.4	37
71	Vibrational dynamics of ions in glass from fifth-order two-dimensional infrared spectroscopy. *Physical Review Letters*, **2005**, 94, 067402	7.4	36
70	Structural and sequence analysis of the human D-crystallin amyloid fibril core using 2D IR spectroscopy, segmental 13C labeling, and mass spectrometry. *Journal of the American Chemical Society*, **2012**, 134, 18410-6	16.4	35
69	Experimental Measurement of the Binding Configuration and Coverage of Chirality-Sorting Polyfluorenes on Carbon Nanotubes. *Journal of Physical Chemistry Letters*, **2014**, 5, 3742-9	6.4	34
68	Two-Dimensional Electronic Spectroscopy Reveals Excitation Energy-Dependent State Mixing during Singlet Fission in a Terrylenediimide Dimer. *Journal of the American Chemical Society*, **2018**, 140, 17907-17914	16.4	33
67	Spatially Resolved Two-Dimensional Infrared Spectroscopy via Wide-Field Microscopy. *ACS Photonics*, **2016**, 3, 1315-1323	6.3	32
66	Water Dynamics in Gyroid Phases of Self-Assembled Gemini Surfactants. *Journal of the American Chemical Society*, **2016**, 138, 2472-5	16.4	31
65	Dye Self-Association Identified by Intermolecular Couplings between Vibrational Modes As Revealed by Infrared Spectroscopy, and Implications for Electron Injection. *Journal of Physical Chemistry C*, **2014**, 118, 5854-5861	3.8	30
64	Solvent-Independent Anharmonicity for Carbonyl Oscillators. *Journal of Physical Chemistry B*, **2017**, 121, 2331-2338	3.4	27
63	Amyloid β Sheet Secondary Structure Identified in UV-Induced Cataracts of Porcine Lenses using 2D IR Spectroscopy. *Journal of Molecular Biology*, **2017**, 429, 1705-1721	6.5	27
62	Mutational analysis of preamyloid intermediates: the role of his-tyr interactions in islet amyloid formation. *Biophysical Journal*, **2014**, 106, 1520-7	2.9	27
61	Diffusion-assisted photoexcitation transfer in coupled semiconducting carbon nanotube thin films. *ACS Nano*, **2014**, 8, 5383-94	16.7	27
60	Site-specific orientation of an helical peptide ovispirin-1 from isotope-labeled SFG spectroscopy. *Journal of Physical Chemistry B*, **2013**, 117, 14625-34	3.4	27
59	Utilizing Lifetimes to Suppress Random Coil Features in 2D IR Spectra of Peptides. *Journal of Physical Chemistry Letters*, **2011**, 2, 2357-2361	6.4	27
58	Myeloperoxidase-mediated Methionine Oxidation Promotes an Amyloidogenic Outcome for Apolipoprotein A-I. *Journal of Biological Chemistry*, **2015**, 290, 10958-71	5.4	26
57	General strategy for the bioorthogonal incorporation of strongly absorbing, solvation-sensitive infrared probes into proteins. *Journal of Physical Chemistry B*, **2014**, 118, 7946-53	3.4	26

56	Impact of non-equilibrium molecular packings on singlet fission in microcrystals observed using 2D white-light microscopy. *Nature Chemistry*, **2020**, 12, 40-47	17.6	26
55	Ultrafast Exciton Hopping Observed in Bare Semiconducting Carbon Nanotube Thin Films with Two-Dimensional White-Light Spectroscopy. *Journal of Physical Chemistry Letters*, **2016**, 7, 2024-31	6.4	25
54	Experimental implementations of 2D IR spectroscopy through a horizontal pulse shaper design and a focal plane array detector. *Optics Letters*, **2016**, 41, 524-7	3	25
53	Simplified and economical 2D IR spectrometer design using a dual acousto-optic modulator. *Chemical Physics*, **2013**, 422, 8-15	2.3	25
52	Probing the Effects of Gating on the Ion Occupancy of the K Channel Selectivity Filter Using Two-Dimensional Infrared Spectroscopy. *Journal of the American Chemical Society*, **2017**, 139, 8837-8845	16.4	24
51	2D IR cross peaks reveal hydrogen-deuterium exchange with single residue specificity. *Journal of Physical Chemistry B*, **2013**, 117, 15297-305	3.4	24
50	Two-dimensional sum-frequency generation (2D SFG) spectroscopy: summary of principles and its application to amyloid fiber monolayers. *Faraday Discussions*, **2015**, 177, 493-505	3.6	23
49	Wide-field FTIR microscopy using mid-IR pulse shaping. *Optics Express*, **2015**, 23, 17815-27	3.3	22
48	2D IR spectroscopy reveals the role of water in the binding of channel-blocking drugs to the influenza M2 channel. *Journal of Chemical Physics*, **2014**, 140, 235105	3.9	22
47	Energy Transfer Between Coherently Delocalized States in Thin Films of the Explosive Pentaerythritol Tetranitrate (PETN) Revealed by Two-Dimensional Infrared Spectroscopy. *Journal of Physical Chemistry B*, **2017**, 121, 1352-1361	3.4	21
46	Site-specific detection of protein secondary structure using 2D IR dihedral indexing: a proposed assembly mechanism of oligomeric hIAPP. *Chemical Science*, **2018**, 9, 463-474	9.4	21
45	Role of Defects as Exciton Quenching Sites in Carbon Nanotube Photovoltaics. *Journal of Physical Chemistry C*, **2017**, 121, 8310-8318	3.8	20
44	Structural Characterization of Single-Stranded DNA Monolayers Using Two-Dimensional Sum Frequency Generation Spectroscopy. *Journal of Physical Chemistry B*, **2015**, 119, 10586-96	3.4	20
43	Interpreting DNA vibrational circular dichroism spectra using a coupling model from two-dimensional infrared spectroscopy. *Journal of Physical Chemistry B*, **2006**, 110, 24720-7	3.4	18
42	Enhancing the signal strength of surface sensitive 2D IR spectroscopy. *Journal of Chemical Physics*, **2019**, 150, 024707	3.9	17
41	Heterogeneous Amyloid β Sheet Polymorphs Identified on Hydrogen Bond Promoting Surfaces Using 2D SFG Spectroscopy. *Journal of Physical Chemistry A*, **2018**, 122, 1270-1282	2.8	17
40	Shot-to-shot 2D IR spectroscopy at 100 kHz using a Yb laser and custom-designed electronics. *Optics Express*, **2020**, 28, 33584-33602	3.3	17
39	New Advances in Mid-IR Pulse Shaping and its Application to 2D IR Spectroscopy and Ground-State Coherent Control. *Advances in Chemical Physics*, **2009**, 1-28		16

38	Polarization-Controlled Two-Dimensional White-Light Spectroscopy of Semiconducting Carbon Nanotube Thin Films. *Journal of Physical Chemistry C*, **2016**, 120, 17069-17080	3.8	15
37	Structural Polymorphs Suggest Competing Pathways for the Formation of Amyloid Fibrils That Diverge from a Common Intermediate Species. *Biochemistry*, **2018**, 57, 6470-6478	3.2	14
36	GXXXG-Mediated Parallel and Antiparallel Dimerization of Transmembrane Helices and Its Inhibition by Cholesterol: Single-Pair FRET and 2D IR Studies. *Angewandte Chemie - International Edition*, **2017**, 56, 1756-1759	16.4	13
35	Two-Dimensional White-Light Spectroscopy Using Supercontinuum from an All-Normal Dispersion Photonic Crystal Fiber Pumped by a 70 MHz Yb Fiber Oscillator. *Journal of Physical Chemistry A*, **2019**, 123, 3046-3055	2.8	13
34	Multidimensional Spectroscopy on the Microscale: Development of a Multimodal Imaging System Incorporating 2D White-Light Spectroscopy, Broadband Transient Absorption, and Atomic Force Microscopy. *Journal of Physical Chemistry A*, **2019**, 123, 10824-10836	2.8	13
33	Less severe processing improves carbon nanotube photovoltaic performance. *APL Materials*, **2018**, 6, 056104	5.7	12
32	Triplet exciton dissociation and electron extraction in graphene-templated pentacene observed with ultrafast spectroscopy. *Physical Chemistry Chemical Physics*, **2017**, 19, 4809-4820	3.6	9
31	Monolayer Sensitivity Enables a 2D IR Spectroscopic Immuno-biosensor for Studying Protein Structures: Application to Amyloid Polymorphs. *Journal of Physical Chemistry Letters*, **2019**, 10, 3836-3842	6.4	9
30	A Proposed Method to Obtain Surface Specificity with Pump-Probe and 2D Spectroscopies. *Journal of Physical Chemistry A*, **2020**, 124, 3471-3483	2.8	9
29	Two-dimensional infrared spectroscopy measures the structural dynamics of a self-assembled film only one molecule thick. *Proceedings of the National Academy of Sciences of the United States of America*, **2016**, 113, 4890-1	11.5	9
28	Examining Amyloid Structure and Kinetics with 1D and 2D Infrared Spectroscopy and Isotope Labeling **2012**, 217-237		7
27	IR Spectroscopy Can Reveal the Mechanism of K Transport in Ion Channels. *Biophysical Journal*, **2020**, 118, 254-261	2.9	7
26	A Different hIAPP Polymorph Is Observed in Human Serum Than in Aqueous Buffer: Demonstration of a New Method for Studying Amyloid Fibril Structure Using Infrared Spectroscopy. *Journal of Physical Chemistry Letters*, **2020**, 11, 6382-6388	6.4	7
25	Thermal Annealing of Singlet Fission Microcrystals Reveals the Benefits of Charge Transfer Couplings and Slip-Stacked Packing. *Journal of Physical Chemistry C*, **2020**, 124, 15123-15131	3.8	6
24	Isotope-Labeled Amyloids via Synthesis, Expression, and Chemical Ligation for Use in FTIR, 2D IR, and NMR Studies. *Methods in Molecular Biology*, **2016**, 1345, 21-41	1.4	6
23	Providing Time to Transfer: Longer Lifetimes Lead to Improved Energy Transfer in Films of Semiconducting Carbon Nanotubes. *Journal of Physical Chemistry Letters*, **2020**, 11, 6016-6024	6.4	5
22	Analysis of amyloid-like secondary structure in the Cryab-R120G knock-in mouse model of hereditary cataracts by two-dimensional infrared spectroscopy. *PLoS ONE*, **2021**, 16, e0257098	3.7	5
21	A polarization scheme that resolves cross-peaks with transient absorption and eliminates diagonal peaks in 2D spectroscopy.. *Proceedings of the National Academy of Sciences of the United States of America*, **2022**, 119,	11.5	4

20	Ultrafast Fluctuations in PM6 Domains of Binary and Ternary Organic Photovoltaic Thin Films Probed with Two-Dimensional White-Light Spectroscopy. *Journal of Physical Chemistry Letters*, **2021**, 12, 8972-8979	6.4	3
19	"New Physical Chemistry Insight" in Experimental Bio-Physical Chemistry. *Journal of Physical Chemistry B*, **2017**, 121, 6455	3.4	2
18	Structure Changes of a Membrane Polypeptide under an Applied Voltage Observed with Surface-Enhanced 2D IR Spectroscopy. *Journal of Physical Chemistry Letters*, **2021**, 12, 1786-1792	6.4	2
17	Application of 2D IR Bioimaging: Hyperspectral Images of Formalin-Fixed Pancreatic Tissues and Observation of Slow Protein Degradation. *Journal of Physical Chemistry B*, **2021**, 125, 9517-9525	3.4	2
16	GXXXG-Mediated Parallel and Antiparallel Dimerization of Transmembrane Helices and Its Inhibition by Cholesterol: Single-Pair FRET and 2D IR Studies. *Angewandte Chemie*, **2017**, 129, 1782-1785	3.6	1
15	Counting tagged molecules one by one: Quantitative photoactivation and bleaching of photoactivatable fluorophores. *Journal of Chemical Physics*, **2015**, 143, 104201	3.9	1
14	The Periodic Table. *Journal of Physical Chemistry A*, **2019**, 123, 5837-5848	2.8	1
13	The JPC Periodic Table. *Journal of Physical Chemistry C*, **2019**, 123, 17063-17074	3.8	1
12	The JPC Periodic Table. *Journal of Physical Chemistry Letters*, **2019**, 10, 4051-4062	6.4	1
11	Confronting Racism in Chemistry Journals. *ACS Applied Nano Materials*, **2020**, 3, 6131-6133	5.6	
10	Confronting Racism in Chemistry Journals. *ACS Applied Polymer Materials*, **2020**, 2, 2496-2498	4.3	
9	Confronting Racism in Chemistry Journals. *Organometallics*, **2020**, 39, 2331-2333	3.8	
8	Update to Our Reader, Reviewer, and Author Communities April 2020. *Energy & Fuels*, **2020**, 34, 5107-5108	4.1	
7	Update to Our Reader, Reviewer, and Author Communities April 2020. *Organometallics*, **2020**, 39, 1665-1666	3.8	
6	Two-dimensional infrared (2D IR) spectroscopy for elucidating ion occupancies in the selectivity filter of ion channels1. *Biomedical Spectroscopy and Imaging*, **2018**, 7, 3-15	1.3	
5	Insights into amylin aggregation by 2D IR spectroscopy. *Biomedical Spectroscopy and Imaging*, **2014**, 3, 189-196	1.3	
4	Confronting Racism in Chemistry Journals. *Journal of Chemical Health and Safety*, **2020**, 27, 198-200	1.7	
3	A Tribute to Daniel M. Neumark. *Journal of Physical Chemistry A*, **2021**, 125, 10255-10256	2.8	

2	50 and 100 Years Ago in The Journal of Physical Chemistry. *Journal of Physical Chemistry C*, **2022**, 126, 6093-6095	3.8
1	2D White-Light Spectroscopy: Application to Lead-Halide Perovskites with Mixed Cations. *ACS Symposium Series*,135-151	0.4