Peter M Weber

List of Publications by Year
in descending order

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102 papers	4,061 citations	126858 33 h-index	123376 61 g-index
103 all docs	103 docs citations	103 times ranked	2527 citing authors

#	Article	IF	Citations
1	Feedback quantum control of molecular electronic population transfer. Chemical Physics Letters, 1997, 280, 151-158.	1.2	509
2	Ultrafast electron microscopy in materials science, biology, and chemistry. Journal of Applied Physics, 2005, 97, 111101.	1.1	281
3	Imaging Molecular Motion: Femtosecond X-Ray Scattering of an Electrocyclic Chemical Reaction. Physical Review Letters, 2015, 114, 255501.	2.9	254
4	Ultrafast time-resolved electron diffraction with megavolt electron beams. Applied Physics Letters, 2006, 89, 184109.	1.5	203
5	The photochemical ring-opening of 1,3-cyclohexadiene imaged by ultrafast electron diffraction. Nature Chemistry, 2019, 11, 504-509.	6.6	157
6	Ultrafast Diffraction Imaging of the Electrocyclic Ring-Opening Reaction of 1,3-Cyclohexadiene. Journal of Physical Chemistry A, 2001, 105, 4167-4171.	1.1	142
7	The Ultrafast Pathway of Photon-Induced Electrocyclic Ring-Opening Reactions: The Case of 1,3-Cyclohexadiene. Annual Review of Physical Chemistry, 2011, 62, 19-39.	4.8	118
8	Capturing Chemistry in Action with Electrons: Realization of Atomically Resolved Reaction Dynamics. Chemical Reviews, 2017, 117, 11066-11124.	23.0	108
9	Rydberg Fingerprint Spectroscopy:Â A New Spectroscopic Tool with Local and Global Structural Sensitivity. Journal of Physical Chemistry A, 2005, 109, 4899-4904.	1.1	81
10	Timeâ€delayed twoâ€color photoelectron spectra of aniline, 2â€aminopyridine, and 3â€aminopyridine: Snapshots of the nonadiabatic curve crossings. Journal of Chemical Physics, 1995, 103, 6903-6913.	1.2	79
11	Ultrafast X-ray scattering reveals vibrational coherence following Rydberg excitation. Nature Chemistry, 2019, 11, 716-721.	6.6	73
12	Ultrafast Dynamics in Superexcited States of Phenol. Journal of Physical Chemistry A, 2001, 105, 3725-3734.	1.1	71
13	Rydberg states: sensitive probes of molecular structure. Chemical Physics Letters, 2003, 378, 647-653.	1.2	64
14	High resolution photoelectron spectroscopy: The vibrational spectrum of the 2â€aminopyridine cation. Journal of Chemical Physics, 1992, 97, 5384-5391.	1.2	60
15	Spectroscopy and femtosecond dynamics of the ring opening reaction of 1,3-cyclohexadiene. Journal of Chemical Physics, 2006, 125, 133307.	1.2	60
16	From the (1B) Spectroscopic State to the Photochemical Product of the Ultrafast Ring-Opening of 1,3-Cyclohexadiene: A Spectral Observation of the Complete Reaction Path. Journal of Physical Chemistry A, 2015, 119, 8832-8845.	1.1	58
17	Observation of femtosecond molecular dynamics via pumpâ€“probe gas phase x-ray scattering. Journal of Physics B: Atomic, Molecular and Optical Physics, 2016, 49, 034001.	0.6	53
18	Roadmap on photonic, electronic and atomic collision physics: I. Lightâ€“matter interaction. Journal of Physics B: Atomic, Molecular and Optical Physics, 2019, 52, 171001.	0.6	52

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19	Femtosecond Multiphoton Ionization Photoelectron Spectroscopy of the S2State of Phenol. Journal of Physical Chemistry A, 1999, 103, 10470-10476.	1.1	51
20	Energy Flow and Fragmentation Dynamics ofN,N-Dimethylisopropylamine. Journal of Physical Chemistry A, 2006, 110, 4251-4255.	1.1	51
21	Toward structural femtosecond chemical dynamics: imaging chemistry in space and time. Faraday Discussions, 2014, 171, 81-91.	1.6	48
22	Control of Local Ionization and Charge Transfer in the Bifunctional Molecule 2-Phenylethyl-N,N-dimethylamine Using Rydberg Fingerprint Spectroscopy. Journal of Physical Chemistry A, 2005, 109, 1920-1925.	1.1	46
23	Electronic Spectroscopy and Ultrafast Energy Relaxation Pathways in the Lowest Rydberg States of Trimethylamine. Journal of Physical Chemistry A, 2008, 112, 10736-10743.	1.1	46
24	Direct imaging of excited electronic states using diffraction techniques: theoretical considerations. Chemical Physics Letters, 1996, 262, 405-414.	1.2	44
25	Time-Resolved Conformational Dynamics in Hydrocarbon Chains. Physical Review Letters, 2007, 98, 253004.	2.9	44
26	Observation of the molecular response to light upon photoexcitation. Nature Communications, 2020, 11, 2157.	5.8	42
27	Multicomponent molecular memory. Nature Communications, 2020, 11, 691.	5.8	40
28	Structural Dynamics in Floppy Systems: Ultrafast Conformeric Motions in Rydberg-Excited Triethylamine. Journal of Physical Chemistry A, 2011, 115, 1804-1809.	1.1	37
29	Charge localization in a diamine cation provides a test of energy functionals and self-interaction correction. Nature Communications, 2016, 7, 11013.	5.8	37
30	Determining Orientations of Optical Transition Dipole Moments Using Ultrafast X-ray Scattering. Journal of Physical Chemistry Letters, 2018, 9, 6556-6562.	2.1	36
31	Rydberg Fingerprint Spectroscopy of Hot Molecules:Â Structural Dispersion in Flexible Hydrocarbons. Journal of Physical Chemistry A, 2006, 110, 10212-10218.	1.1	35
32	A deep UV trigger for ground-state ring-opening dynamics of 1,3-cyclohexadiene. Science Advances, 2019, 5, eaax6625.	4.7	35
33	Ground state recovery and molecular structure upon ultrafast transition through conical intersections in cyclic dienes. Chemical Physics Letters, 2009, 470, 187-190.	1.2	33
34	Structural Dynamics and Charge Transfer in Electronically Excited N,Nâ€²-Dimethylpiperazine. Journal of Physical Chemistry Letters, 2013, 4, 2780-2784.	2.1	33
35	Ultrafast Dynamics in the Three-Photon, Double-Resonance Ionization of Phenol via the S2Electronic State. Journal of Physical Chemistry A, 2001, 105, 3735-3740.	1.1	32
36	Self-interaction corrected density functional calculations of molecular Rydberg states. Journal of Chemical Physics, 2013, 139, 194102.	1.2	32

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37	Ab Initio Calculation of Total X-ray Scattering from Molecules. Journal of Chemical Theory and Computation, 2019, 15, 2836-2846.	2.3	32
38	Structure sensitive photoionization via Rydberg levels. Journal of Molecular Structure, 2006, 787, 163-166.	1.8	31
39	Ultrafast structural dynamics in Rydberg excited N,N,Nâ€²,Nâ€²-tetramethylethylenediamine: conformation dependent electron lone pair interaction and charge delocalization. Chemical Science, 2014, 5, 4394-4403.	3.7	31
40	Ultrafast x-ray and electron scattering of free molecules: A comparative evaluation. Structural Dynamics, 2020, 7, 034102.	0.9	30
41	Photoionization via transient states. A coherent probe of molecular eigenstates. Chemical Physics Letters, 1992, 197, 556-561.	1.2	29
42	Dependence of two-photon ionization photoelectron spectra on laser coherence bandwidth. Chemical Physics Letters, 1993, 214, 276-280.	1.2	25
43	Reflectron design for femtosecond electron guns. , 1995, , .		25
44	Pumpâ€“probe diffraction imaging of vibrational wave functions. Journal of Chemical Physics, 1998, 108, 8004-8011.	1.2	25
45	Ultrafast structural and isomerization dynamics in the Rydberg-exited Quadricyclane: Norbornadiene system. Journal of Chemical Physics, 2012, 136, 134303.	1.2	25
46	Simplicity Beneath Complexity: Counting Molecular Electrons Reveals Transients and Kinetics of Photodissociation Reactions. Angewandte Chemie - International Edition, 2019, 58, 6371-6375.	7.2	25
47	Centering of ultrafast time-resolved pumpâ€“probe electron diffraction patterns. Chemical Physics, 2004, 299, 307-312.	0.9	24
48	Structural dynamics and energy flow in Rydberg-excited clusters of N,N-dimethylisopropylamine. Journal of Chemical Physics, 2011, 135, 044319.	1.2	24
49	Femtosecond photodissociation dynamics of 1,4-diiodobenzene by gas-phase X-ray scattering and photoelectron spectroscopy. Faraday Discussions, 2016, 194, 525-536.	1.6	23
50	Dissociative Energy Flow, Vibrational Energy Redistribution, and Conformeric Structural Dynamics in Bifunctional Amine Model Systems. Journal of Physical Chemistry A, 2010, 114, 11078-11084.	1.1	22
51	Self-interaction corrected density functional calculations of Rydberg states of molecular clusters: N,N-dimethylisopropylamine. Journal of Chemical Physics, 2014, 141, 234308.	1.2	22
52	Coherence in nonradiative transitions: internal conversion in Rydberg-excited N-methyl and N-ethyl morpholine. Physical Chemistry Chemical Physics, 2017, 19, 26403-26411.	1.3	22
53	Fundamental Limits on Spatial Resolution in Ultrafast X-ray Diffraction. Applied Sciences (Switzerland), 2017, 7, 534.	1.3	22
54	Electron Diffraction of Molecules in Specific Quantum States:â€‰ A Theoretical Study of Vibronically Excited s-Tetrazine. Journal of Physical Chemistry A, 2004, 108, 1189-1199.	1.1	20

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55	Observation of Structural Wavepacket Motion: The Umbrella Mode in Rydberg-Excited N-Methyl Morpholine. Journal of Physical Chemistry Letters, 2017, 8, 3740-3744.	2.1	20
56	Advances in ultrafast gas-phase x-ray scattering. Journal of Physics B: Atomic, Molecular and Optical Physics, 2020, 53, 234004.	0.6	20
57	Diffraction Signals of Aligned Molecules in the Gas Phase:â€‰ Tetrazine in Intense Laser Fields. Journal of Physical Chemistry A, 2003, 107, 6622-6629.	1.1	19
58	Resolved: Electronic states underneath broad absorptions. Journal of Chemical Physics, 2007, 127, 036101.	1.2	19
59	Ultrafast Dynamics of Highly Excited trans-Stilbene: A Different Twist. Journal of Physical Chemistry Letters, 2010, 1, 224-227.	2.1	18
60	Encoding information in synthetic metabolomes. PLoS ONE, 2019, 14, e0217364.	1.1	18
61	Ultrafast X-ray scattering offers a structural view of excited-state charge transfer. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	18
62	Identification of isomeric hydrocarbons by Rydberg photoelectron spectroscopy. Journal of Electron Spectroscopy and Related Phenomena, 2008, 165, 5-10.	0.8	17
63	Principles of Information Storage in Small-Molecule Mixtures. IEEE Transactions on Nanobioscience, 2020, 19, 378-384.	2.2	17
64	Scattering off molecules far from equilibrium. Journal of Chemical Physics, 2019, 151, 084301.	1.2	16
65	Ultrafast Structural Pathway of Charge Transfer in N,N,Nâ€²,Nâ€²-Tetramethylethylenediamine. Journal of Physical Chemistry A, 2015, 119, 2813-2818.	1.1	15
66	Electron diffraction with bound electrons: The structure sensitivity of Rydberg Fingerprint Spectroscopy. Journal of Molecular Structure, 2010, 978, 250-256.	1.8	14
67	Self-Interaction Corrected Functional Calculations of a Dipole-Bound Molecular Anion. Journal of Physical Chemistry Letters, 2016, 7, 2068-2073.	2.1	14
68	Mapping static core-holes and ring-currents with X-ray scattering. Faraday Discussions, 2021, 228, 60-81.	1.6	14
69	Transient structures and chemical reaction dynamics. Russian Chemical Reviews, 2017, 86, 1173-1253.	2.5	13
70	Symmetry controlled excited state dynamics. Physical Chemistry Chemical Physics, 2019, 21, 2283-2294.	1.3	13
71	The diffraction signatures of individual vibrational modes in polyatomic molecules. Journal of Chemical Physics, 2000, 112, 1260-1270.	1.2	12
72	Megavolt Electron Beams for Ultrafast Time-Resolved Electron Diffraction. AIP Conference Proceedings, 2006, , .	0.3	12

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73	Molecular structure and conformational properties of N-cyclohexylpiperidine as studied by gas-phase electron diffraction, mass spectrometry, IR spectroscopy and quantum chemical calculations. Structural Chemistry, 2015, 26, 1501-1512.	1.0	12
74	Resonant two photon ionization of phenanthrene via its transientS 2 state. Zeitschrift FÃ¼r Physik D-Atoms Molecules and Clusters, 1993, 28, 191-194.	1.0	11
75	Structure and dynamics of the S3 state of CS2. Journal of Chemical Physics, 1997, 107, 6570-6576.	1.2	11
76	Charge transfer and ultrafast nuclear motions: the complex structural dynamics of an electronically excited triamine. Chemical Science, 2016, 7, 619-627.	3.7	11
77	Structure and conformational behavior of N-phenylpiperidine studied by gas-phase electron diffraction and quantum chemical calculations. Journal of Molecular Structure, 2017, 1132, 3-10.	1.8	11
78	High-repetition-rate time-resolved gas phase electron diffraction. , 1995, 2521, 136.		10
79	Experimental adaptive optimization of mass spectrometer ion optic voltages using a genetic algorithm. Review of Scientific Instruments, 1999, 70, 2262-2267.	0.6	10
80	Intramolecular inversions, structure and conformational behavior of gaseous and liquid N-cyanopiperidine. Comparison with other 1-cyanoheterocyclohexanes. Journal of Molecular Structure, 2017, 1138, 41-49.	1.8	10
81	Determination of excited state molecular structures from time-resolved gas-phase X-ray scattering. Faraday Discussions, 2021, 228, 104-122.	1.6	10
82	Strong-field induced fragmentation and isomerization of toluene probed by ultrafast femtosecond electron diffraction and mass spectrometry. Faraday Discussions, 2021, 228, 39-59.	1.6	10
83	Non-intrusive detection of combustion intermediates by photoionization via Rydberg states and microwave backscattering. Combustion and Flame, 2016, 171, 162-167.	2.8	9
84	Pump-probe low-energy electron diffraction. , 1995, , .		8
85	Ultrafast Dynamics of 1,3-Cyclohexadiene in Highly Excited States. Journal of Atomic, Molecular, and Optical Physics, 2011, 2011, 1-6.	0.5	8
86	Ultrafast formation of an intramolecular cationâ€“pi bond. Journal of Photochemistry and Photobiology A: Chemistry, 2010, 213, 70-72.	2.0	6
87	Simplicity Beneath Complexity: Counting Molecular Electrons Reveals Transients and Kinetics of Photodissociation Reactions. Angewandte Chemie, 2019, 131, 6437-6441.	1.6	6
88	Reply to: â€œThe diamine cation is not a chemical example where density functional theory failsâ€• Nature Communications, 2018, 9, 5348.	5.8	5
89	Ultrafast photodissociation dynamics of 1,4-diiodobenzene. Journal of Chemical Physics, 2018, 148, 194306.	1.2	5
90	Transient Symmetry Controls Photo Dynamics near Conical Intersections. Journal of Physical Chemistry Letters, 2021, 12, 9220-9225.	2.1	4

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91	Putting the Disulfide Bridge at Risk: How UVâ€€ Radiation Leads to Ultrafast Rupture of the Sâ€€ Bond. ChemPhysChem, 2018, 19, 2829-2834.	1.0	3
92	Spatially resolved standoff trace chemical sensing using backwards transient absorption spectroscopy. Optics Letters, 2018, 43, 1279.	1.7	2
93	Time-resolved diffraction: general discussion. Faraday Discussions, 2021, 228, 161-190.	1.6	2
94	Ultrafast conformational dynamics of Rydberg-excited N-methyl piperidine. Physical Chemistry Chemical Physics, 2021, 23, 27417-27427.	1.3	2
95	On the ultrafast photo-induced dynamics of Î±-terpinene. Journal of Chemical Physics, 2016, 144, 194303.	1.2	1
96	Secret messaging with endogenous chemistry. Scientific Reports, 2021, 11, 13960.	1.6	1
97	Imaging the ultrafast photoinduced ring opening of 1,3-cyclohexadiene with MeV ultrafast electron diffraction (Conference Presentation). , 2018, , .		1
98	Conformational diversity of 1-phenylpiperidin-4-one in the gas phase. Chemical Physics Letters, 2022, 803, 139851.	1.2	1
99	Imaging the ring opening reaction of 1,3-cyclohexadiene with MeV ultrafast electron diffraction. EPJ Web of Conferences, 2019, 205, 07006.	0.1	0
100	Ultrafast X-ray science: general discussion. Faraday Discussions, 2021, 228, 597-621.	1.6	0
101	Chemical analysis from a distance: Spatially resolved, remote sensing using backward transient absorption. Chemical Physics Letters, 2022, 793, 139435.	1.2	0
102	Spectroscopic identification of 2,3-dimethylbut-2-ene transients in 2,3-dimethylbut-2-ane flames. Applied Physics B: Lasers and Optics, 2022, 128, 1.	1.1	0