Marsha I Lester

List of Publications by Year
in descending order

111 papers	3,518 citations	109321 35 h-index	161849 54 g-index
111 all docs	111 docs citations	111 times ranked	1190 citing authors

#	Article	IF	Citations
1	Ultraviolet Spectrum and Photochemistry of the Simplest Criegee Intermediate CH₂OO. Journal of the American Chemical Society, 2012, 134, 20045-20048.	13.7	178
2	Unimolecular dissociation dynamics of vibrationally activated CH3CHOO Criegee intermediates to OH radical products. Nature Chemistry, 2016, 8, 509-514.	13.6	141
3	Infrared-driven unimolecular reaction of CH ₃ CHOO Criegee intermediates to OH radical products. Science, 2014, 345, 1596-1598.	12.6	125
4	UV spectroscopic characterization of an alkyl substituted Criegee intermediate CH3CHOO. Journal of Chemical Physics, 2013, 138, 244307.	3.0	119
5	Four-Carbon Criegee Intermediate from Isoprene Ozonolysis: Methyl Vinyl Ketone Oxide Synthesis, Infrared Spectrum, and OH Production. Journal of the American Chemical Society, 2018, 140, 10866-10880.	13.7	109
6	Unimolecular Decay of Criegee Intermediates to OH Radical Products: Prompt and Thermal Decay Processes. Accounts of Chemical Research, 2018, 51, 978-985.	15.6	101
7	UV Spectroscopic Characterization of Dimethyl- and Ethyl-Substituted Carbonyl Oxides. Journal of Physical Chemistry A, 2014, 118, 2298-2306.	2.5	100
8	Communication: Real time observation of unimolecular decay of Criegee intermediates to OH radical products. Journal of Chemical Physics, 2016, 144, 061102.	3.0	99
9	Opticalâ€“optical double resonance of the IClâ€“Ne complex: Binding energies in theE(0+),A(3Î1), andX(1Î£+) states. Journal of Chemical Physics, 1987, 86, 1662-1669.	3.0	80
10	A perturbation theory guide to openâ€shell complexes: OHâ€“Ar(Xâ€‰2Î). Journal of Chemical Physics, 1992, 96, 2573-2584.	3.0	73
11	Dynamical effects in the vibrational predissociation of IClâ€“rare gas complexes. Journal of Chemical Physics, 1986, 85, 2329-2331.	3.0	72
12	Stimulated emission pumping of intermolecular vibrations in OHâ€“Ar(Xâ€‰2Î). Journal of Chemical Physics, 1992, 96, 7890-7903.	3.0	67
13	OH-H2ENTRANCE CHANNEL COMPLEXES. Annual Review of Physical Chemistry, 1997, 48, 643-673.	10.8	64
14	Direct kinetic measurements and theoretical predictions of an isoprene-derived Criegee intermediate. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 9733-9740.	7.1	63
15	van der Waals vibrational dependence in the vibrational predissociation dynamics of OHâ€“Ar. Journal of Chemical Physics, 1990, 92, 6469-6479.	3.0	60
16	Electronic Quenching of OH A2Î£+(vâ€˜ = 0, 1) in Complexes with Hydrogen and Nitrogen. Journal of Physical Chemistry A, 1997, 101, 9195-9206.	2.5	58
17	Infrared Spectrum and Stability of the H₂Oâ‹¯HO Complex: Experiment and Theory. Journal of Physical Chemistry A, 2010, 114, 1529-1538.	2.5	58
18	Deep tunneling in the unimolecular decay of CH3CHOO Criegee intermediates to OH radical products. Journal of Chemical Physics, 2016, 145, 234308.	3.0	56

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19	Communication: Ultraviolet photodissociation dynamics of the simplest Criegee intermediate CH2OO. Journal of Chemical Physics, 2013, 139, 141103.	3.0	55
20	Vibrational predissociation in OHâ€“Ar. Journal of Chemical Physics, 1989, 90, 5878-5879.	3.0	54
21	Probing reactive potential energy surfaces by vibrational activation of H2-OH entrance channel complexes. International Reviews in Physical Chemistry, 2000, 19, 501-529.	2.3	54
22	Synthesis, Electronic Spectroscopy, and Photochemistry of Methacrolein Oxide: A Four-Carbon Unsaturated Criegee Intermediate from Isoprene Ozonolysis. Journal of the American Chemical Society, 2019, 141, 15058-15069.	13.7	52
23	Direct lifetime and nascent product distribution for the vibrational predissociation of IClâ€“NeA(3Î1) state van der Waals complexes. Journal of Chemical Physics, 1986, 84, 2896-2897.	3.0	51
24	Rotational rainbows in the vibrational predissociation of IClâ€“He complexes. Journal of Chemical Physics, 1988, 89, 7277-7286.	3.0	50
25	Direct observation of unimolecular decay of CH3CH2CHOO Criegee intermediates to OH radical products. Journal of Chemical Physics, 2016, 145, 044312.	3.0	49
26	Direct observation of vinyl hydroperoxide. Physical Chemistry Chemical Physics, 2015, 17, 20490-20494.	2.8	46
27	Electronic spectroscopy and quenching dynamics of OHâ€“H2/D2preâ€reactive complexes. Journal of Chemical Physics, 1996, 104, 6984-6996.	3.0	45
28	Unimolecular decay dynamics of Criegee intermediates: Energy-resolved rates, thermal rates, and their atmospheric impact. International Reviews in Physical Chemistry, 2020, 39, 1-33.	2.3	45
29	Quantum dynamical investigation of the simplest Criegee intermediate CH2OO and its Oâ€“O photodissociation channels. Journal of Chemical Physics, 2014, 141, 134303.	3.0	44
30	Electronic spectroscopy of methyl vinyl ketone oxide: A four-carbon unsaturated Criegee intermediate from isoprene ozonolysis. Journal of Chemical Physics, 2018, 149, 244309.	3.0	44
31	Infrared spectroscopy of ArOH: A direct probe of the Ar+OHâ€,X2Î potential energy surface. Journal of Chemical Physics, 2000, 112, 4942-4951.	3.0	43
32	Stabilization of reactants in a weakly bound complex: OHâ€“H2and OHâ€“D2. Journal of Chemical Physics, 1995, 103, 4371-4374.	3.0	40
33	Unimolecular Decay of the Dimethyl-Substituted Criegee Intermediate in Alkene Ozonolysis: Decay Time Scales and the Importance of Tunneling. Journal of Physical Chemistry A, 2017, 121, 6036-6045.	2.5	39
34	Direct production of OH radicals upon CH overtone activation of (CH3)2COO Criegee intermediates. Journal of Chemical Physics, 2014, 141, 234312.	3.0	37
35	Infrared spectroscopy and time-resolved dynamics of the ortho-H2â€“OH entrance channel complex. Journal of Chemical Physics, 1998, 109, 3461-3473.	3.0	35
36	Tunneling effects in the unimolecular decay of (CH3)2COO Criegee intermediates to OH radical products. Journal of Chemical Physics, 2017, 146, 134307.	3.0	34

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37	Near threshold photofragmentation dynamics of IClâ€“NeAstate van der Waals complexes. Journal of Chemical Physics, 1988, 88, 120-128.	3.0	33
38	Reactive quenching of electronically excited OH radicals in collisions with molecular hydrogen. Journal of Chemical Physics, 1999, 110, 11117-11120.	3.0	33
39	Evidence for final state interactions in the vibrational predissociation of IClâ€“Ne complexes. Journal of Chemical Physics, 1988, 89, 4716-4725.	3.0	32
40	Nonadiabatic electronic interactions in the ionâ€pair states of NeICl. Journal of Chemical Physics, 1991, 94, 4171-4181.	3.0	32
41	An inverse method for obtaining smooth multidimensional potential energy surfaces: application to Ar+OH Aâ€‰2â‍+(v=0). Journal of Chemical Physics, 1995, 102, 2282-2285.	3.0	32
42	State-to-state inelastic scattering from vibrationally activated OHâ€“H2 complexes. Journal of Chemical Physics, 1998, 109, 10707-10718.	3.0	32
43	Spectroscopic characterization of HOONO and its binding energy via infrared action spectroscopy. Journal of Chemical Physics, 2003, 119, 9981-9984.	3.0	32
44	Selective deuteration illuminates the importance of tunneling in the unimolecular decay of Criegee intermediates to hydroxyl radical products. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 12372-12377.	7.1	32
45	Watching a hydroperoxyalkyl radical (â€¢QOOH) dissociate. Science, 2021, 373, 679-682.	12.6	31
46	Electronic quenching of OH Aâ€‰²Î£⁺radicals in single collision events with H₂and D₂: a comprehensive quantum state distribution of the OH Xâ€‰²Î products. Physical Chemistry Chemical Physics, 2008, 10, 1424-1432.	2.8	30
47	Experimental Evidence of Dioxole Unimolecular Decay Pathway for Isoprene-Derived Criegee Intermediates. Journal of Physical Chemistry A, 2020, 124, 3542-3554.	2.5	30
48	Application of an inverse method to the determination of a twoâ€dimensional intermolecular potential energy surface for the Arâ€“OH(Aâ€‰2Î£+, v=0) complex from rovibrational spectra. Journal of Chemical Physics, 1996, 104, 1187-1202.	3.0	29
49	Open questions on the reactivity of Criegee intermediates. Communications Chemistry, 2021, 4, .	4.5	29
50	(2+1) Resonance-enhanced ionization spectroscopy of a state-selected beam of OH radicals. Journal of Chemical Physics, 2005, 123, 074309.	3.0	28
51	Reactive Quenching of OHA2Î£+in Collisions with Molecular Deuterium via Nonadiabatic Passage through a Conical Intersection. Journal of Physical Chemistry A, 2001, 105, 10031-10036.	2.5	27
52	Velocity map imaging of O-atom products from UV photodissociation of the CH2OO Criegee intermediate. Journal of Chemical Physics, 2015, 142, 214312.	3.0	27
53	UV Photodissociation Dynamics of the CH₃CHOO Criegee Intermediate: Action Spectroscopy and Velocity Map Imaging of O-Atom Products. Journal of Physical Chemistry A, 2015, 119, 8328-8337.	2.5	27
54	Hydroxyacetone Production From C₃ Criegee Intermediates. Journal of Physical Chemistry A, 2017, 121, 16-23.	2.5	27

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55	Intermolecular vibrations of the hydrogen bonded OHâ€“CO reactant complex. Journal of Chemical Physics, 2003, 118, 1196-1205.	3.0	26
56	Intermolecular vibrations and spinâ€“orbit predissociation dynamics of NeOH (Xâ€‰2Î). Journal of Chemical Physics, 1995, 103, 3418-3429.	3.0	25
57	Early time detection of OH radical products from energized Criegee intermediates CH2OO and CH3CHOO. Chemical Physics Letters, 2014, 598, 23-27.	2.6	24
58	Ion imaging studies of the photodissociation dynamics of CH2I2 at 248nm. Chemical Physics Letters, 2013, 590, 16-21.	2.6	23
59	Stateâ€toâ€state measurements of internal rotational predissociation in OHâ€“Ar (Aâ€‰2Î£+). Journal of Chemical Physics, 1994, 101, 2914-2928.	3.0	22
60	Decay dynamics of the vibrationally activated OHâ€“CO reactant complex. Journal of Chemical Physics, 2003, 118, 2223-2234.	3.0	22
61	Predissociation dynamics on a highly anisotropic potential: OHâ€“Ar (Aâ€‰2Î£+). Journal of Chemical Physics, 1993, 99, 6211-6214.	3.0	21
62	The interpretation of the câ€‰1Îâ†aâ€‰1Î” excitation spectra of the ArNH complex. Journal of Chemical Physics, 1995, 103, 905-920.	3.0	21
63	Communication: A new spectroscopic window on hydroxyl radicals using UV + VUV resonant ionization. Journal of Chemical Physics, 2011, 134, 241102.	3.0	21
64	Prompt release of O 1D products upon UV excitation of CH2OO Criegee intermediates. Journal of Chemical Physics, 2017, 147, 013907.	3.0	21
65	Intermolecular bending levels in an open-shell diatomâ€“diatom complex: Infrared spectroscopy and model calculations of the OHâ€“N2 complex. Journal of Chemical Physics, 2001, 114, 7001-7012.	3.0	20
66	CH Stretch Activation of CH₃CHOO: Deep Tunneling to Hydroxyl Radical Products. Journal of Physical Chemistry A, 2019, 123, 2559-2569.	2.5	20
67	Experimental and theoretical studies of the doubly substituted methyl-ethyl Criegee intermediate: Infrared action spectroscopy and unimolecular decay to OH radical products. Journal of Chemical Physics, 2020, 152, 094301.	3.0	17
68	Functionalized Hydroperoxide Formation from the Reaction of Methacrolein-Oxide, an Isoprene-Derived Criegee Intermediate, with Formic Acid: Experiment and Theory. Molecules, 2021, 26, 3058.	3.8	16
69	Photodissociation Dynamics of CH₂OO on Multiple Potential Energy Surfaces: Experiment and Theory. Journal of Physical Chemistry A, 2021, 125, 6571-6579.	2.5	16
70	Photodissociation of the OD radical at 226 and 243 nm. Journal of Chemical Physics, 2003, 119, 9341-9343.	3.0	15
71	Photodissociation dynamics of methyl vinyl ketone oxide: A four-carbon unsaturated Criegee intermediate from isoprene ozonolysis. Journal of Chemical Physics, 2021, 155, 174305.	3.0	14
72	Infrared action spectroscopy and time-resolved dynamics of the ODâ€“CO reactant complex. Journal of Chemical Physics, 2003, 119, 118-130.	3.0	13

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73	Formic acid catalyzed isomerization and adduct formation of an isoprene-derived Criegee intermediate: experiment and theory. Physical Chemistry Chemical Physics, 2020, 22, 26796-26805.	2.8	13
74	Stimulated Raman excitation of the ortho-H2â€“OH entrance channel complex. Journal of Chemical Physics, 1999, 110, 6732-6742.	3.0	12
75	Velocity map imaging of OH radical products from IR activated (CH3)2COO Criegee intermediates. Journal of Chemical Physics, 2016, 145, 104307.	3.0	11
76	Coupling of torsion and OH-stretching in tert-butyl hydroperoxide. II. The OH-stretching fundamental and overtone spectra. Journal of Chemical Physics, 2021, 154, 164307.	3.0	11
77	Electronic Absorption Spectroscopy and Photochemistry of Criegee Intermediates. Photochemistry and Photobiology, 2023, 99, 4-18.	2.5	11
78	Intermolecular vibrations and relaxation dynamics in complexes of OH Aâ€‰2Î£+ (vâ€²=0,1) with N2. Journal of Chemical Physics, 1996, 105, 10224-10236.	3.0	10
79	Infrared Spectroscopy and Inelastic Recoil Dynamics of OH Radicals in Complexes withortho- andpara-D2. Journal of Physical Chemistry A, 2000, 104, 6532-6544.	2.5	10
80	1+1â€² resonant multiphoton ionisation of OH radicals via the A²Î£⁺state: insights from direct comparison with A-X laser-induced fluorescence detection. Molecular Physics, 2014, 112, 897-903.	1.7	10
81	Unraveling Conformer-Specific Sources of Hydroxyl Radical Production from an Isoprene-Derived Criegee Intermediate by Deuteration. Journal of Physical Chemistry A, 2020, 124, 4929-4938.	2.5	10
82	Vibrational Predissociation Dynamics of Van Der Waals Complexes: Product Rotational State Distributions. Advances in Chemical Physics, 2007, , 51-102.	0.3	9
83	Coupling of torsion and OH-stretching in tert-butyl hydroperoxide. I. The cold and warm first OH-stretching overtone spectrum. Journal of Chemical Physics, 2021, 154, 164306.	3.0	9
84	Infrared spectroscopic signature of a hydroperoxyalkyl radical (â€¢QOOH). Journal of Chemical Physics, 2022, 156, 014301.	3.0	8
85	ODâ€“N2: Infrared spectroscopy, potential anisotropy, and predissociation dynamics from infared-ultraviolet double resonance studies. Journal of Chemical Physics, 2002, 116, 913-923.	3.0	7
86	STIMULATED EMISSION PUMPING AS A PROBE OF THE OH (X²Î) + Ar INTERMOLECULAR POTENTIAL ENERGY SURFACE. Advanced Series in Physical Chemistry, 1995, , 659-688.	1.5	6
87	Infrared Action Spectroscopy and Inelastic Recoil Dynamics of the CH4âˆ™OD Reactant Complex. Journal of Physical Chemistry A, 2002, 106, 7722-7727.	2.5	5
88	UV + V UV double-resonance studies of autoionizing Rydberg states of the hydroxyl radical. Journal of Chemical Physics, 2016, 144, 184311.	3.0	5
89	Rapid Allylic 1,6 H-Atom Transfer in an Unsaturated Criegee Intermediate. Journal of the American Chemical Society, 2022, 144, 5945-5955.	13.7	5
90	Mode-selective decay dynamics of the ortho-H₂â€”OH complex: experiment and theory. Molecular Physics, 1999, 97, 151-158.	1.7	4

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91	Controlling the Relative Orientation of Reactants with Intermolecular Forces:â€‰ Intermolecular State-Dependent Structure in Prereactive H2â‹¯OH Complexes. Journal of Physical Chemistry A, 2003, 107, 2606-2615.	2.5	4
92	Dramatic Conformer-Dependent Reactivity of the Acetaldehyde Oxide Criegee Intermediate with Dimethylamine Via a 1,2-Insertion Mechanism. Journal of Physical Chemistry A, 2022, 126, 710-719.	2.5	4
93	Energy flow in benzene. Nature, 1988, 331, 12-13.	27.8	3
94	Experimental and computational investigation of vinoxy and 1-methylvinoxy radicals from the unimolecular decay of alkyl-substituted Criegee intermediates. Chemical Physics Letters, 2020, 751, 137478.	2.6	3
95	Preface: Special Topic on the Glass Transition. Journal of Chemical Physics, 2013, 138, 12A101.	3.0	2
96	Energy-resolved and time-dependent unimolecular dissociation of hydroperoxyalkyl radicals (Ë™QOOH). Faraday Discussions, 0, 238, 575-588.	3.2	2
97	Editorial: A new direction for The Journal of Chemical Physics. Journal of Chemical Physics, 2009, 130, .	3.0	1
98	Announcement: New Perspectives Section in The Journal of Chemical Physics. Journal of Chemical Physics, 2010, 132, 110201.	3.0	1
99	Editorial: The Future of Chemical Physics Conference 2016. Journal of Chemical Physics, 2016, 145, 220401.	3.0	1
100	Editorial: Remembering John C. Light. I. Editorial contributions. Journal of Chemical Physics, 2016, 144, 150401.	3.0	1
101	Photofragmentation dynamics of ICl-rare gas van der Waals complexes. AIP Conference Proceedings, 1988, , .	0.4	0
102	Announcement: Communications and Letters to the Editor. Journal of Chemical Physics, 2009, 130, .	3.0	0
103	Announcement: New Advanced Experimental Techniques section in The Journal of Chemical Physics. Journal of Chemical Physics, 2011, 135, 010201.	3.0	0
104	Announcement: Top reviewers for The Journal of Chemical Physics 2010â€“2013. Journal of Chemical Physics, 2014, 140, 190201.	3.0	0
105	Editorial: New editorial standards to better serve the community. Journal of Chemical Physics, 2015, 142, 010401.	3.0	0
106	Announcement: Top reviewers for The Journal of Chemical Physics 2014. Journal of Chemical Physics, 2015, 142, 200201.	3.0	0
107	Announcement: Top reviewers for The Journal of Chemical Physics 2015. Journal of Chemical Physics, 2016, 144, 190201.	3.0	0
108	Announcement: Top reviewers for The Journal of Chemical Physics 2016. Journal of Chemical Physics, 2017, 146, 100201.	3.0	0

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109	Editorial: JCP Communicationsâ€"Updating a valued community resource. Journal of Chemical Physics, 2018, 148, 010401.	3.0	0
110	Editorial: Reflections on 10 years at the helm of The Journal of Chemical Physics. Journal of Chemical Physics, 2018, 149, 240401.	3.0	0
111	Announcement: Top reviewers for The Journal of Chemical Physics 2017. Journal of Chemical Physics, 2018, 149, 010201.	3.0	0