Hope A Michelsen

List of Publications by Year
in descending order

118 papers	7,532 citations	61687 45 h-index	62345 84 g-index
121 all docs	121 docs citations	121 times ranked	4160 citing authors

#	Article	IF	Citations
1	Promotion of particle formation by resonance-stabilized radicals during hydrocarbon pyrolysis. Combustion and Flame, 2022, 243, 111942.	2.8	9
2	Distinguishing Gas-Phase and Nanoparticle Contributions to Small-Angle X-ray Scattering in Reacting Aerosol Flows. Journal of Physical Chemistry A, 2022, 126, 3015-3026.	1.1	6
3	Soot-particle core-shell and fractal structures from small-angle X-ray scattering measurements in a flame. Carbon, 2022, 196, 440-456.	5.4	10
4	Exploring the Potential of Using Carbonyl Sulfide to Track the Urban Biosphere Signal. Journal of Geophysical Research D: Atmospheres, 2021, 126, e2020JD034106.	1.2	2
5	Effects of maturity and temperature on soot density and specific heat. Proceedings of the Combustion Institute, 2021, 38, 1197-1205.	2.4	30
6	A Review of Terminology Used to Describe Soot Formation and Evolution under Combustion and Pyrolytic Conditions. ACS Nano, 2020, 14, 12470-12490.	7.3	122
7	Spatial dependence of the growth of polycyclic aromatic compounds in an ethylene counterflow flame. Carbon, 2019, 149, 328-335.	5.4	22
8	Resonance-stabilized hydrocarbon-radical chain reactions may explain soot inception and growth. Science, 2018, 361, 997-1000.	6.0	472
9	Probing Soot Formation and Chemical Evolution During Combustion. , 2018, , .		0
10	Probing Soot Formation and Chemical Evolution During Combustion. , 2018, , .		0
11	Estimating methane emissions from biological and fossilâ€fuel sources in the San Francisco Bay Area. Geophysical Research Letters, 2017, 44, 486-495.	1.5	25
12	Photoionization Efficiencies of Five Polycyclic Aromatic Hydrocarbons. Journal of Physical Chemistry A, 2017, 121, 4447-4454.	1.1	8
13	Critical Assessment of Photoionization Efficiency Measurements for Characterization of Soot-Precursor Species. Journal of Physical Chemistry A, 2017, 121, 4475-4485.	1.1	18
14	Evolution of maturity levels of the particle surface and bulk during soot growth and oxidation in a flame. Aerosol Science and Technology, 2017, 51, 1333-1344.	1.5	64
15	Radicalâ€“radical reactions, pyrene nucleation, and incipient soot formation in combustion. Proceedings of the Combustion Institute, 2017, 36, 799-806.	2.4	68
16	Topâ€down estimate of methane emissions in California using a mesoscale inverse modeling technique: The San Joaquin Valley. Journal of Geophysical Research D: Atmospheres, 2017, 122, 3686-3699.	1.2	26
17	A small porous-plug burner for studies of combustion chemistry and soot formation. Review of Scientific Instruments, 2017, 88, 125106.	0.6	5
18	Design and characterization of a linear Hencken-type burner. Review of Scientific Instruments, 2016, 87, 115114.	0.6	10

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19	Estimating methane emissions in California's urban and rural regions using multitower observations. Journal of Geophysical Research D: Atmospheres, 2016, 121, 13,031.	1.2	40
20	Formation and emission of large furans and oxygenated hydrocarbons from flames. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 8374-8379.	3.3	76
21	Laser-induced incandescence: Particulate diagnostics for combustion, atmospheric, and industrial applications. Progress in Energy and Combustion Science, 2015, 51, 2-48.	15.8	295
22	Effects of aggregate morphology and size on laser-induced incandescence and scattering from black carbon (mature soot). Journal of Aerosol Science, 2015, 88, 159-181.	1.8	30
23	Toward verifying fossil fuel CO₂ emissions with the CMAQ model: Motivation, model description and initial simulation. Journal of the Air and Waste Management Association, 2014, 64, 419-435.	0.9	9
24	Soot maturity and absorption cross sections. Journal of Aerosol Science, 2014, 75, 43-64.	1.8	90
25	Building CLiiME via Test-Driven Development: A Case Study. Computing in Science and Engineering, 2014, 16, 36-46.	1.2	6
26	Flame Experiments at the Advanced Light Source: New Insights into Soot Formation Processes. Journal of Visualized Experiments, 2014, , .	0.2	1
27	Near-threshold photoionization mass spectra of combustion-generated high-molecular-weight soot precursors. Journal of Aerosol Science, 2013, 58, 86-102.	1.8	62
28	A data set for validation of models of laser-induced incandescence from soot: temporal profiles of LII signal and particle temperature. Applied Physics B: Lasers and Optics, 2013, 112, 287-306.	1.1	41
29	Effects of volatile coatings on the laser-induced incandescence of soot. Applied Physics B: Lasers and Optics, 2013, 112, 343-358.	1.1	30
30	Effects of volatile coatings and coating removal mechanisms on the morphology of graphitic soot. Carbon, 2013, 61, 80-96.	5.4	35
31	Radial-profile and divergence measurements of combustion-generated soot focused by an aerodynamic-lens system. Journal of Aerosol Science, 2013, 58, 158-170.	1.8	20
32	A case study: Agile development in the community laser-induced incandescence modeling environment (CLiiME). , 2013, , .		5
33	High-vacuum time-resolved laser-induced incandescence ofÂflame-generated soot. Applied Physics B: Lasers and Optics, 2011, 104, 439-450.	1.1	8
34	Effect of the wavelength dependence of the emissivity on inferred soot temperatures measured by spectrally resolved laser-induced incandescence. Applied Physics B: Lasers and Optics, 2010, 100, 655-663.	1.1	36
35	Wavelength and temperature dependences of the absorption and scattering cross sections of soot. Carbon, 2010, 48, 2175-2191.	5.4	81
36	Spontaneous emission from C₂(d³Î_g) and C₃(A¹Î_u) during laser irradiation of soot particles. Molecular Physics, 2010, 108, 1013-1025.	0.8	34

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37	Reduction of uncertainties in remote measurement of greenhouse gas fluxes. , 2010, , .		0
38	Derivation of a temperature-dependent accommodation coefficient for use in modeling laser-induced incandescence of soot. Applied Physics B: Lasers and Optics, 2009, 94, 103-117.	1.1	31
39	The effects of pulsed laser injection seeding and triggering onÂtheÂtemporal behavior and magnitude of laser-induced incandescence from soot. Applied Physics B: Lasers and Optics, 2009, 96, 613-621.	1.1	8
40	Photochemical interferences for laser-induced incandescence of flame-generated soot. Proceedings of the Combustion Institute, 2009, 32, 963-970.	2.4	45
41	Modeling laser-induced incandescence of soot: enthalpy changes during sublimation, conduction, and oxidation. Applied Physics B: Lasers and Optics, 2008, 93, 645-656.	1.1	25
42	Particle formation from pulsed laser irradiation of soot aggregates studied with a scanning mobility particle sizer, a transmission electron microscope, and a scanning transmission x-ray microscope. Applied Optics, 2007, 46, 959.	2.1	62
43	Spontaneous emission from the C3 radical in carbon plasma. Applied Optics, 2007, 46, 4032.	2.1	28
44	Complications to optical measurements using a laser with an unstable resonator: a case study on laser-induced incandescence of soot. Applied Optics, 2007, 46, 8095.	2.1	19
45	Modeling laser-induced incandescence of soot: a summary and comparison of LII models. Applied Physics B: Lasers and Optics, 2007, 87, 503-521.	1.1	197
46	Laser-induced incandescence of flame-generated soot on a picosecond time scale. Applied Physics B: Lasers and Optics, 2006, 83, 443-448.	1.1	29
47	Laser-induced incandescence: recent trends and current questions. Applied Physics B: Lasers and Optics, 2006, 83, 333-354.	1.1	427
48	Dual-Laser LIDELS: An Optical Diagnostic for Time-Resolved Volatile Fraction Measurements of Diesel Particulate Emissions. , 2005, , .		5
49	Assessment of the SAGE II version 6.2 water vapor data set through intercomparison with ATMOS/ATLAS-3 measurements. Geophysical Research Letters, 2004, 31, .	1.5	9
50	Time-resolved laser-induced incandescence of soot: the influence of experimental factors and microphysical mechanisms. Applied Optics, 2003, 42, 5577.	2.1	71
51	Understanding and predicting the temporal response of laser-induced incandescence from carbonaceous particles. Journal of Chemical Physics, 2003, 118, 7012-7045.	1.2	237
52	Atmospheric Trace Molecule Spectroscopy (ATMOS) Experiment Version 3 data retrievals. Applied Optics, 2002, 41, 6968.	2.1	111
53	ATMOS version 3 water vapor measurements: Comparisons with observations from two ER-2 Lyman-Î± hygrometers, MkIV, HALOE, SAGE II, MAS, and MLS. Journal of Geophysical Research, 2002, 107, ACH 2-1.	3.3	13
54	Time-resolved laser-induced incandescence and laser elastic-scattering measurements in a propane diffusion flame. Applied Optics, 2001, 40, 2443.	2.1	63

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55	Stratospheric water vapor increases over the past half-century. Geophysical Research Letters, 2001, 28, 1195-1198.	1.5	246
56	Carbon and hydrogen kinetic isotope effects for the reaction of Cl with CH4: Consolidating chemical kinetics and molecular dynamics measurements. Journal of Geophysical Research, 2001, 106, 12267-12274.	3.3	7
57	Comparison of satellite ozone observations in coincident air masses in early November 1994. Journal of Geophysical Research, 2001, 106, 9923-9943.	3.3	40
58	The Reaction of Cl with CH4:â€‰ A Connection between Kinetics and Dynamics. Accounts of Chemical Research, 2001, 34, 331-337.	7.6	46
59	Relating State-Dependent Cross Sections to Non-Arrhenius Behavior for the Cl + CH4Reactionâ€. Journal of Physical Chemistry A, 2001, 105, 1476-1488.	1.1	40
60	A laser and molecular beam mass spectrometer study of low-pressure dimethyl ether flames. Proceedings of the Combustion Institute, 2000, 28, 1647-1653.	2.4	66
61	Features and trends in Atmospheric Trace Molecule Spectroscopy (ATMOS) version 3 stratospheric water vapor and methane measurements. Journal of Geophysical Research, 2000, 105, 22713-22724.	3.3	42
62	Lamination and polar vortex development in fall from ATMOS long-lived trace gases observed during November 1994. Journal of Geophysical Research, 2000, 105, 29023-29038.	3.3	34
63	Response of lower stratospheric HCl/Clyto volcanic aerosol: Observations from aircraft, balloon, space shuttle, and satellite instruments. Journal of Geophysical Research, 2000, 105, 11711-11719.	3.3	7
64	Aerosol-Mediated Partitioning of Stratospheric Clyand NOyat Temperatures Above 200 K. Geophysical Research Letters, 1999, 26, 299-302.	1.5	20
65	Intercomparison of ATMOS, SAGE II, and ER-2 Observations in Arctic Vortex and Extra-Vortex Air Masses during Spring 1993. Geophysical Research Letters, 1999, 26, 291-294.	1.5	21
66	Correction to â€œLaminae in the tropical middle stratosphere: Origin and age estimationâ€• Geophysical Research Letters, 1999, 26, 479-479.	1.5	0
67	Polar vortex dynamics during spring and fall diagnosed using trace gas observations from the Atmospheric Trace Molecule Spectroscopy instrument. Journal of Geophysical Research, 1999, 104, 18841-18866.	3.3	68
68	Maintenance of high HCl/Clyand NOx/NOy, in the Antarctic vortex: A chemical signature of confinement during spring. Journal of Geophysical Research, 1999, 104, 26419-26436.	3.3	34
69	ATMOS/ATLAS 3 INFRARED PROFILE MEASUREMENTS OF TRACE GASES IN THE NOVEMBER 1994 TROPICAL AND SUBTROPICAL UPPER TROPOSPHERE. Journal of Quantitative Spectroscopy and Radiative Transfer, 1998, 60, 891-901.	1.1	38
70	ATMOS/ATLAS 3 INFRARED PROFILE MEASUREMENTS OF CLOUDS IN THE TROPICAL AND SUBTROPICAL UPPER TROPOSPHERE. Journal of Quantitative Spectroscopy and Radiative Transfer, 1998, 60, 903-919.	1.1	18
71	Assessing the Contribution of the Lowest Triplet State to the Near-UV Absorption Spectrum of HOCl. Journal of Physical Chemistry A, 1998, 102, 8855-8859.	1.1	19
72	Laminae in the tropical middle stratosphere: Origin and age estimation. Geophysical Research Letters, 1998, 25, 4337-4340.	1.5	18

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73	Evolution of HCL concentrations in the lower stratosphere from 1991 to 1996 following the eruption of Mt. Pinatubo. Geophysical Research Letters, 1998, 25, 995-998.	1.5	25
74	Correlations of stratospheric abundances of CH4and N2O derived from ATMOS measurements. Geophysical Research Letters, 1998, 25, 2777-2780.	1.5	59
75	Tropical entrainment time scales inferred from stratospheric N2O and CH4observations. Geophysical Research Letters, 1998, 25, 2781-2784.	1.5	48
76	A parameterization for the activity of H+in aqueous sulfuric acid solutions. Geophysical Research Letters, 1998, 25, 3571-3573.	1.5	3
77	Correlations of stratospheric abundances of NOy, O3, N2O, and CH4derived from ATMOS measurements. Journal of Geophysical Research, 1998, 103, 28347-28359.	3.3	120
78	ATMOS measurements of H2O+2CH4and total reactive nitrogen in the November 1994 Antarctic stratosphere: Dehydration and denitrification in the vortex. Geophysical Research Letters, 1996, 23, 2397-2400.	1.5	41
79	Trace gas transport in the Arctic Vortex inferred from ATMOS ATLAS-2 observations during April 1993. Geophysical Research Letters, 1996, 23, 2345-2348.	1.5	36
80	ATMOS/ATLAS-3 observations of long-lived tracers and descent in the Antarctic Vortex in November 1994. Geophysical Research Letters, 1996, 23, 2341-2344.	1.5	42
81	Stratospheric chlorine partitioning: Constraints from shuttle-borne measurements of [HCl], [ClNO3], and [ClO]. Geophysical Research Letters, 1996, 23, 2361-2364.	1.5	56
82	Increase of stratospheric carbon tetrafluoride (CF4) based on ATMOS observations from space. Geophysical Research Letters, 1996, 23, 2353-2356.	1.5	29
83	Stratospheric NO and NO2abundances from ATMOS Solar-Occultation Measurements. Geophysical Research Letters, 1996, 23, 2373-2376.	1.5	39
84	Latitudinal distribution of upper stratospheric ClO as derived from Space Borne Microwave Spectroscopy. Geophysical Research Letters, 1996, 23, 2321-2324.	1.5	15
85	The hydrogen budget of the stratosphere inferred from ATMOS measurements of H2O and CH4. Geophysical Research Letters, 1996, 23, 2405-2408.	1.5	34
86	Seasonal variations of water vapor in the lower stratosphere inferred from ATMOS/ATLAS-3 measurements of H2O and CH4. Geophysical Research Letters, 1996, 23, 2401-2404.	1.5	37
87	Stratospheric observations of CH3D and HDO from ATMOS infrared solar spectra: Enrichments of deuterium in methane and implications for HD. Geophysical Research Letters, 1996, 23, 2381-2384.	1.5	63
88	ATMOS/ATLAS-3 measurements of stratospheric chlorine and reactive nitrogen partitioning inside and outside the November 1994 Antarctic Vortex. Geophysical Research Letters, 1996, 23, 2365-2368.	1.5	37
89	The Atmospheric Trace Molecule Spectroscopy (ATMOS) Experiment: Deployment on the ATLAS space shuttle missions. Geophysical Research Letters, 1996, 23, 2333-2336.	1.5	192
90	A comparison of measurements from ATMOS and instruments aboard the ER-2 aircraft: Tracers of atmospheric transport. Geophysical Research Letters, 1996, 23, 2389-2392.	1.5	39

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91	A comparison of measurements from ATMOS and instruments aboard the ER-2 aircraft: Halogenated gases. Geophysical Research Letters, 1996, 23, 2393-2396.	1.5	29
92	The 1994 northern midlatitude budget of stratospheric chlorine derived from ATMOS/ATLAS-3 observations. Geophysical Research Letters, 1996, 23, 2357-2360.	1.5	68
93	On the assessment and uncertainty of atmospheric trace gas burden measurements with high resolution infrared solar occultation spectra from space by the ATMOS Experiment. Geophysical Research Letters, 1996, 23, 2337-2340.	1.5	46
94	Simultaneous measurements of stratospheric HOx, NOx, and Clx: Comparison with a photochemical model. Journal of Geophysical Research, 1996, 101, 9031-9043.	3.3	55
95	Alignment of D2(v,â€‰J) desorbed from Cu(111): Low sensitivity of activated dissociative chemisorption to approach geometry. Journal of Chemical Physics, 1996, 105, 9702-9705.	1.2	64
96	Quantumâ€stateâ€specific dynamics of the dissociative adsorption and associative desorption of H2 at a Cu(111) surface. Journal of Chemical Physics, 1995, 102, 4625-4641.	1.2	263
97	Production of O(Â¹D) from photolysis of O3. Geophysical Research Letters, 1994, 21, 2227-2230.	1.5	100
98	The distribution of hydrogen, nitrogen, and chlorine radicals in the lower stratosphere: Implications for changes in O3due to emission of NOyfrom supersonic aircraft. Geophysical Research Letters, 1994, 21, 2547-2550.	1.5	67
99	The diurnal variation of hydrogen, nitrogen, and chlorine radicals: Implications for the heterogeneous production of HNO2. Geophysical Research Letters, 1994, 21, 2551-2554.	1.5	76
100	Hydrochloric acid and the chlorine budget of the lower stratosphere. Geophysical Research Letters, 1994, 21, 2575-2578.	1.5	45
101	The Adsorption of Hydrogen at Copper Surfaces: A Model System for the Study of Activated Adsorption. Springer Series in Surface Sciences, 1994, , 185-237.	0.3	35
102	Determination of quantum-state-specific gasâ€”surface energy transfer and adsorption probabilities as a function of kinetic energy. Chemical Physics, 1993, 175, 157-169.	0.9	65
103	Interaction dynamics of hydrogen at a Cu(111) surface. Surface Science, 1993, 283, 1-8.	0.8	47
104	From quantum-state-specific dynamics to reaction rates: the dominant role of translational energy in promoting the dissociation of D2 on Cu(111) under equilibrium conditions. Faraday Discussions, 1993, 96, 17.	1.6	64
105	Effect of rotation on the translational and vibrational energy dependence of the dissociative adsorption of D2on Cu(111). Journal of Chemical Physics, 1993, 98, 8294-8307.	1.2	264
106	Dynamics of the desorption of D2 and H2 from Cu(111). Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1993, 11, 1901-1906.	0.9	29
107	Role of vibrational and translational energy in the activated dissociative adsorption ofD2on Cu(111). Physical Review Letters, 1992, 68, 1164-1167.	2.9	229
108	Observation of direct vibrational excitation in collisions ofH2andD2with a Cu(111) surface. Physical Review Letters, 1992, 68, 2547-2550.	2.9	129

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109	Dynamical studies of the interaction of D2 with a Cu(111) surface. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1992, 10, 2282-2286.	0.9	19
110	State-specific dynamics ofD2desorption from Cu(111): The role of molecular rotational motion in activated adsorption-desorption dynamics. Physical Review Letters, 1992, 69, 2678-2681.	2.9	142
111	On the influence of surface temperature on adsorption and desorption in the D2/Cu(111) system. Surface Science, 1992, 272, 65-72.	0.8	100
112	The poisoning of D2 dissociative chemisorption on Pt(111) by coadsorbed O2. Chemical Physics Letters, 1991, 187, 555-558.	1.2	3
113	Dynamics of recombinative desorption: Angular distributions of H2, HD, and D2 desorbing from Cu(111). Journal of Chemical Physics, 1991, 94, 7499-7501.	1.2	66
114	A critical examination of data on the dissociative adsorption and associative desorption of hydrogen at copper surfaces. Journal of Chemical Physics, 1991, 94, 7502-7520.	1.2	225
115	Contributions ofH2(v=0) andH2(v=1) to the dissociative adsorption of hydrogen on Cu(110). Physical Review Letters, 1990, 65, 2833-2833.	2.9	15
116	2+1 resonantly enhanced multiphoton ionization of CO via the Eâ€‰1Îâ€“Xâ€‰1Î£+ transition: From measured ion signals to quantitative population distributions. Journal of Chemical Physics, 1990, 93, 8557-8564.	1.2	57
117	Electrokinetic resolution of amino acid enantiomers with copper(II)-aspartame support electrolyte. Analytical Chemistry, 1987, 59, 44-49.	3.2	363
118	Photochemistry and photophysics of small heterocyclic molecules: 1. Multiphoton ionization and dissociation of N-isopropyldimethyloxaziridine. The Journal of Physical Chemistry, 1985, 89, 3034-3039.	2.9	1