Nils Hansen

List of Publications by Year
in descending order

125 papers	7,687 citations	44069 48 h-index	53230 85 g-index
126 all docs	126 docs citations	126 times ranked	3334 citing authors

#	Article	IF	Citations
1	Alcohol combustion chemistry. Progress in Energy and Combustion Science, 2014, 44, 40-102.	31.2	687
2	Biofuel Combustion Chemistry: From Ethanol to Biodiesel. Angewandte Chemie - International Edition, 2010, 49, 3572-3597.	13.8	587
3	Advances and challenges in laminar flame experiments and implications for combustion chemistry. Progress in Energy and Combustion Science, 2014, 43, 36-67.	31.2	434
4	Recent contributions of flame-sampling molecular-beam mass spectrometry to a fundamental understanding of combustion chemistry. Progress in Energy and Combustion Science, 2009, 35, 168-191.	31.2	316
5	Enols Are Common Intermediates in Hydrocarbon Oxidation. Science, 2005, 308, 1887-1889.	12.6	306
6	â€œImagingâ€• combustion chemistry via multiplexed synchrotron-photoionization mass spectrometry. Physical Chemistry Chemical Physics, 2008, 10, 20-34.	2.8	185
7	Near-threshold absolute photoionization cross-sections of some reaction intermediates in combustion. International Journal of Mass Spectrometry, 2008, 269, 210-220.	1.5	163
8	Absolute photoionization cross-sections of some combustion intermediates. International Journal of Mass Spectrometry, 2012, 309, 118-128.	1.5	156
9	Identification and Chemistry of C4H3and C4H5Isomers in Fuel-Rich Flames. Journal of Physical Chemistry A, 2006, 110, 3670-3678.	2.5	143
10	Detection and Identification of the Keto-Hydroperoxide (HOOCH₂OCHO) and Other Intermediates during Low-Temperature Oxidation of Dimethyl Ether. Journal of Physical Chemistry A, 2015, 119, 7361-7374.	2.5	143
11	A detailed chemical kinetic reaction mechanism for oxidation of four small alkyl esters in laminar premixed flames. Proceedings of the Combustion Institute, 2009, 32, 221-228.	3.9	127
12	Identification of C5HxIsomers in Fuel-Rich Flames by Photoionization Mass Spectrometry and Electronic Structure Calculations. Journal of Physical Chemistry A, 2006, 110, 4376-4388.	2.5	122
13	Exploring hydroperoxides in combustion: History, recent advances and perspectives. Progress in Energy and Combustion Science, 2019, 73, 132-181.	31.2	119
14	Unraveling the structure and chemical mechanisms of highly oxygenated intermediates in oxidation of organic compounds. Proceedings of the National Academy of Sciences of the United States of America, 2017, 114, 13102-13107.	7.1	117
15	Isomer-specific combustion chemistry in allene and propyne flames. Combustion and Flame, 2009, 156, 2153-2164.	5.2	115
16	Synchrotron photoionization measurements of combustion intermediates: Photoionization efficiency and identification of C3H2 isomers. Physical Chemistry Chemical Physics, 2005, 7, 806.	2.8	113
17	Isomer-Specific Fuel Destruction Pathways in Rich Flames of Methyl Acetate and Ethyl Formate and Consequences for the Combustion Chemistry of Estersâ€. Journal of Physical Chemistry A, 2007, 111, 4093-4101.	2.5	109
18	Quantification of the Keto-Hydroperoxide (HOOCH₂OCHO) and Other Elusive Intermediates during Low-Temperature Oxidation of Dimethyl Ether. Journal of Physical Chemistry A, 2016, 120, 7890-7901.	2.5	104

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19	Initial Steps of Aromatic Ring Formation in a Laminar Premixed Fuel-Rich Cyclopentene Flameâ€. Journal of Physical Chemistry A, 2007, 111, 4081-4092.	2.5	102
20	Hydrogen-assisted isomerizations of fulvene to benzene and of larger cyclic aromatic hydrocarbons. Proceedings of the Combustion Institute, 2013, 34, 279-287.	3.9	99
21	Combustion Chemistry of Enols:â€‰ Possible Ethenol Precursors in Flames. Journal of Physical Chemistry A, 2006, 110, 3254-3260.	2.5	96
22	Additional chain-branching pathways in the low-temperature oxidation of branched alkanes. Combustion and Flame, 2016, 164, 386-396.	5.2	94
23	Benzene formation in premixed fuel-rich 1,3-butadiene flames. Proceedings of the Combustion Institute, 2009, 32, 623-630.	3.9	91
24	Benzene precursors and formation routes in a stoichiometric cyclohexane flame. Proceedings of the Combustion Institute, 2007, 31, 565-573.	3.9	89
25	Combustion chemistry in the twenty-first century: Developing theory-informed chemical kinetics models. Progress in Energy and Combustion Science, 2021, 83, 100886.	31.2	89
26	Investigating repetitive reaction pathways for the formation of polycyclic aromatic hydrocarbons in combustion processes. Combustion and Flame, 2017, 180, 250-261.	5.2	88
27	High-temperature oxidation chemistry of n-butanol â€“ experiments in low-pressure premixed flames and detailed kinetic modeling. Physical Chemistry Chemical Physics, 2011, 13, 20262.	2.8	86
28	An experimental and kinetic modeling study on dimethyl carbonate (DMC) pyrolysis and combustion. Combustion and Flame, 2016, 164, 224-238.	5.2	75
29	Isomer-Specific Influences on the Composition of Reaction Intermediates in Dimethyl Ether/Propene and Ethanol/Propene Flame. Journal of Physical Chemistry A, 2008, 112, 9255-9265.	2.5	71
30	Velocity Map Ion Imaging of Chlorine Azide Photolysis:Â Evidence for Photolytic Production of Cyclic-N3â€. Journal of Physical Chemistry A, 2003, 107, 10608-10614.	2.5	69
31	A combined ab initio and photoionization mass spectrometric study of polyynes in fuel-rich flames. Physical Chemistry Chemical Physics, 2008, 10, 366-374.	2.8	68
32	Composition of reaction intermediates for stoichiometric and fuel-rich dimethyl ether flames: flame-sampling mass spectrometry and modeling studies. Physical Chemistry Chemical Physics, 2009, 11, 1328.	2.8	68
33	Exploring formation pathways of aromatic compounds in laboratory-based model flames of aliphatic fuels. Combustion, Explosion and Shock Waves, 2012, 48, 508-515.	0.8	68
34	n-Heptane cool flame chemistry: Unraveling intermediate species measured in a stirred reactor and motored engine. Combustion and Flame, 2018, 187, 199-216.	5.2	68
35	Fuel-structure dependence of benzene formation processes in premixed flames fueled by C6H12 isomers. Proceedings of the Combustion Institute, 2011, 33, 585-592.	3.9	66
36	The influence of ethanol addition on premixed fuel-rich propeneâ€“oxygenâ€“argon flames. Proceedings of the Combustion Institute, 2007, 31, 1119-1127.	3.9	64

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37	Photoionization mass spectrometric studies and modeling of fuel-rich allene and propyne flames. Proceedings of the Combustion Institute, 2007, 31, 1157-1164.	3.9	63
38	The importance of fuel dissociation and propargyl + allyl association for the formation of benzene in a fuel-rich 1-hexene flame. Physical Chemistry Chemical Physics, 2010, 12, 12112.	2.8	62
39	An experimental and kinetic modeling study of methyl formate low-pressure flames. Combustion and Flame, 2011, 158, 732-741.	5.2	62
40	Near-threshold photoionization mass spectra of combustion-generated high-molecular-weight soot precursors. Journal of Aerosol Science, 2013, 58, 86-102.	3.8	62
41	Fuel-specific influences on the composition of reaction intermediates in premixed flames of three $C_5H_{10}O_2$ ester isomers. Physical Chemistry Chemical Physics, 2011, 13, 6901.	2.8	60
42	An Aromatic Universeâ€"A Physical Chemistry Perspective. Journal of Physical Chemistry A, 2021, 125, 3826-3840.	2.5	60
43	Multiple benzene-formation paths in a fuel-rich cyclohexane flame. Combustion and Flame, 2011, 158, 2077-2089.	5.2	58
44	Electron ionization, photoionization and photoelectron/photoion coincidence spectroscopy in mass-spectrometric investigations of a low-pressure ethylene/oxygen flame. Proceedings of the Combustion Institute, 2015, 35, 779-786.	3.9	58
45	Influences of the molecular fuel structure on combustion reactions towards soot precursors in selected alkane and alkene flames. Physical Chemistry Chemical Physics, 2018, 20, 10780-10795.	2.8	57
46	Low-Temperature Oxidation of Ethylene by Ozone in a Jet-Stirred Reactor. Journal of Physical Chemistry A, 2018, 122, 8674-8685.	2.5	55
47	Detection of Aliphatically Bridged Multi-Core Polycyclic Aromatic Hydrocarbons in Sooting Flames with Atmospheric-Sampling High-Resolution Tandem Mass Spectrometry. Journal of Physical Chemistry A, 2018, 122, 9338-9349.	2.5	54
48	2D-imaging of sampling-probe perturbations in laminar premixed flames using Kr X-ray fluorescence. Combustion and Flame, 2017, 181, 214-224.	5.2	51
49	Exploration of the oxidation chemistry of dimethoxymethane: Jet-stirred reactor experiments and kinetic modeling. Combustion and Flame, 2018, 193, 491-501.	5.2	50
50	Chemical Structures of Low-Pressure Premixed Methylcyclohexane Flames as Benchmarks for the Development of a Predictive Combustion Chemistry Model. Energy & Fuels, 2011, 25, 5611-5625.	5.1	48
51	Soot precursor formation and limitations of the stabilomer grid. Proceedings of the Combustion Institute, 2015, 35, 1819-1826.	3.9	48
52	Absolute cross-sections for dissociative photoionization of some small esters. International Journal of Mass Spectrometry, 2010, 292, 14-22.	1.5	47
53	Photoionization mass spectrometry and modeling study of premixed flames of three unsaturated $C_5H_8O_2$ esters. Proceedings of the Combustion Institute, 2013, 34, 443-451.	3.9	46
54	PAH formation and soot morphology in flames of C4 fuels. Proceedings of the Combustion Institute, 2015, 35, 1761-1769.	3.9	46

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55	The predictive capability of an automatically generated combustion chemistry mechanism: Chemical structures of premixed iso-butanol flames. Combustion and Flame, 2013, 160, 2343-2351.	5.2	44
56	Consumption and hydrocarbon growth processes in a 2-methyl-2-butene flame. Combustion and Flame, 2017, 175, 34-46.	5.2	42
57	Aromatic ring formation in opposed-flow diffusive 1,3-butadiene flames. Proceedings of the Combustion Institute, 2017, 36, 947-955.	3.9	41
58	New insights into the low-temperature oxidation of 2-methylhexane. Proceedings of the Combustion Institute, 2017, 36, 373-382.	3.9	36
59	Review of the Influence of Oxygenated Additives on the Combustion Chemistry of Hydrocarbons. Energy & Fuels, 2021, 35, 13550-13568.	5.1	33
60	Photofragment translation spectroscopy of ClN3 at 248 nm: Determination of the primary and secondary dissociation pathways. Journal of Chemical Physics, 2005, 123, 104305.	3.0	32
61	A VUV Photoionization Study of the Combustion-Relevant Reaction of the Phenyl Radical (C₆H₅) with Propylene (C₃H₆) in a High Temperature Chemical Reactor. Journal of Physical Chemistry A, 2012, 116, 3541-3546.	2.5	32
62	Exploring the negative temperature coefficient behavior of acetaldehyde based on detailed intermediate measurements in a jet-stirred reactor. Combustion and Flame, 2018, 192, 120-129.	5.2	31
63	Identification of the molecular-weight growth reaction network in counterflow flames of the C3H4 isomers allene and propyne. Proceedings of the Combustion Institute, 2021, 38, 1477-1485.	3.9	30
64	The influence of dimethoxy methane (DMM)/dimethyl carbonate (DMC) addition on a premixed ethane/oxygen/argon flame. Proceedings of the Combustion Institute, 2017, 36, 449-457.	3.9	29
65	Identification of the Criegee intermediate reaction network in ethylene ozonolysis: impact on energy conversion strategies and atmospheric chemistry. Physical Chemistry Chemical Physics, 2019, 21, 7341-7357.	2.8	29
66	Role of ring-enlargement reactions in the formation of aromatic hydrocarbons. Physical Chemistry Chemical Physics, 2020, 22, 4699-4714.	2.8	29
67	Understanding the reaction pathways in premixed flames fueled by blends of 1,3-butadiene and n-butanol. Proceedings of the Combustion Institute, 2015, 35, 771-778.	3.9	28
68	Influence of ozone addition on the low-temperature oxidation of dimethyl ether in a jet-stirred reactor. Combustion and Flame, 2020, 214, 277-286.	5.2	27
69	Experimental and modelling study of speciation and benzene formation pathways in premixed 1-hexene flames. Proceedings of the Combustion Institute, 2015, 35, 325-332.	3.9	26
70	Ion dissociation dynamics of the chlorine azide cation (ClN3+) investigated by velocity map imaging. Journal of Chemical Physics, 2003, 118, 10485-10493.	3.0	24
71	Isomer-Selective Detection of Keto-Hydroperoxides in the Low-Temperature Oxidation of Tetrahydrofuran. Journal of Physical Chemistry A, 2019, 123, 8274-8284.	2.5	24
72	The rotational spectrum of dichlorocarbene, C35Cl2, observed by molecular beam-Fourier transform microwave spectroscopy. Physical Chemistry Chemical Physics, 2001, 3, 50-55.	2.8	23

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73	Photodissociation dynamics of ClN3 at 203 nm: the NCl (/) product branching ratio. Chemical Physics Letters, 2003, 368, 568-573.	2.6	23
74	Exploring the high-temperature kinetics of diethyl carbonate (DEC) under pyrolysis and flame conditions. Combustion and Flame, 2017, 181, 71-81.	5.2	23
75	The C5 chemistry preceding the formation of polycyclic aromatic hydrocarbons in a premixed 1-pentene flame. Combustion and Flame, 2019, 206, 411-423.	5.2	23
76	Investigating the effect of oxy-fuel combustion and light coal volatiles interaction: A mass spectrometric study. Combustion and Flame, 2019, 204, 320-330.	5.2	23
77	Knowledge generation through data research: New validation targets for the refinement of kinetic mechanisms. Proceedings of the Combustion Institute, 2019, 37, 743-750.	3.9	22
78	Molecular-growth pathways in premixed flames of benzene and toluene doped with propyne. Combustion and Flame, 2022, 243, 112075.	5.2	22
79	Flame chemistry of tetrahydropyran as a model heteroatomic biofuel. Proceedings of the Combustion Institute, 2013, 34, 259-267.	3.9	20
80	Demonstration of a burner for the investigation of partially premixed low-temperature flames. Combustion and Flame, 2010, 157, 1966-1975.	5.2	19
81	Formation of Oxygenated and Hydrocarbon Intermediates in Premixed Combustion of 2-Methylfuran. Zeitschrift Fur Physikalische Chemie, 2015, 229, 507-528.	2.8	19
82	The Cl to NCl branching ratio in 248-nm photolysis of chlorine azide. Chemical Physics Letters, 2004, 391, 334-337.	2.6	18
83	Identification of isomeric hydrocarbons by Rydberg photoelectron spectroscopy. Journal of Electron Spectroscopy and Related Phenomena, 2008, 165, 5-10.	1.7	17
84	Combustion chemistry of alcohols: Experimental and modeled structure of a premixed 2-methylbutanol flame. Proceedings of the Combustion Institute, 2015, 35, 813-820.	3.9	17
85	A high-temperature study of 2-pentanone oxidation: experiment and kinetic modeling. Proceedings of the Combustion Institute, 2019, 37, 1683-1690.	3.9	17
86	Investigation of sampling-probe distorted temperature fields with X-ray fluorescence spectroscopy. Proceedings of the Combustion Institute, 2019, 37, 1401-1408.	3.9	17
87	Experimental Observation of Hydrocarbon Growth by Resonanceâ€Stabilized Radicalâ€"Radical Chain Reaction. Angewandte Chemie - International Edition, 2021, 60, 27230-27235.	13.8	17
88	The influence of i-butanol addition to the chemistry of premixed 1,3-butadiene flames. Proceedings of the Combustion Institute, 2017, 36, 1311-1319.	3.9	16
89	Near-Surface Imaging of the Multicomponent Gas Phase above a Silver Catalyst during Partial Oxidation of Methanol. ACS Catalysis, 2021, 11, 155-168.	11.2	16
90	Nuclear spinâ€"rotation interaction in CF2 ( ) observed by Fourier transform microwave spectroscopy. Chemical Physics Letters, 2000, 327, 97-103.	2.6	15

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91	Probing fuel-specific reaction intermediates from laminar premixed flames fueled by two C5 ketones and model interpretations. Proceedings of the Combustion Institute, 2019, 37, 1699-1707.	3.9	15
92	Exploring low temperature oxidation of 1-butene in jet-stirred reactors. Combustion and Flame, 2020, 222, 259-271.	5.2	15
93	Imaging ClN3 photodissociation from 234 to 280 nm. Physical Chemistry Chemical Physics, 2006, 8, 2958.	2.8	14
94	Investigation of the chemical structures of laminar premixed flames fueled by acetaldehyde. Proceedings of the Combustion Institute, 2017, 36, 1287-1294.	3.9	14
95	A further experimental and modeling study of acetaldehyde combustion kinetics. Combustion and Flame, 2018, 196, 337-350.	5.2	14
96	Studies of laminar opposed-flow diffusion flames of acetylene at low-pressures with photoionization mass spectrometry. Proceedings of the Combustion Institute, 2013, 34, 1067-1075.	3.9	13
97	Premixed flame chemistry of a gasoline primary reference fuel surrogate. Combustion and Flame, 2017, 179, 300-311.	5.2	13
98	Chemical insights into the larger sooting tendency of 2-methyl-2-butene compared to n-pentane. Combustion and Flame, 2019, 208, 182-197.	5.2	13
99	Extreme Low-Temperature Combustion Chemistry: Ozone-Initiated Oxidation of Methyl Hexanoate. Journal of Physical Chemistry A, 2020, 124, 9897-9914.	2.5	13
100	Investigation of the low-temperature oxidation of n-butanal in a jet-stirred reactor. Proceedings of the Combustion Institute, 2019, 37, 453-460.	3.9	12
101	Insights into the oxidation kinetics of a cetane improver â€“ 1,2-dimethoxyethane (1,2-DME) with experimental and modeling methods. Proceedings of the Combustion Institute, 2019, 37, 555-564.	3.9	12
102	Experimental flat flame study of monoterpenes: Insights into the combustion kinetics of Î±-pinene, Î²-pinene, and myrcene. Proceedings of the Combustion Institute, 2021, 38, 2431-2440.	3.9	12
103	Molecular-Weight Growth in Ozone-Initiated Low-Temperature Oxidation of Methyl Crotonate. Journal of Physical Chemistry A, 2020, 124, 7881-7892.	2.5	11
104	Providing effective constraints for developing ketene combustion mechanisms: A detailed kinetic investigation of diacetyl flames. Combustion and Flame, 2019, 205, 11-21.	5.2	10
105	Identification of the acetaldehyde oxide Criegee intermediate reaction network in the ozone-assisted low-temperature oxidation of <i>trans</i>-2-butene. Physical Chemistry Chemical Physics, 2021, 23, 23554-23566.	2.8	10
106	Numerical analysis of soot emissions from gasoline-ethanol and gasoline-butanol blends under gasoline compression ignition conditions. Fuel, 2022, 319, 123740.	6.4	10
107	Low- and high-temperature study of n-heptane combustion chemistry. Proceedings of the Combustion Institute, 2021, 38, 405-413.	3.9	9
108	Chemical insights into the multi-regime low-temperature oxidation of di-n-propyl ether: Jet-stirred reactor experiments and kinetic modeling. Combustion and Flame, 2021, 233, 111592.	5.2	9

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109	Nucleation of soot: experimental assessment of the role of polycyclic aromatic hydrocarbon (PAH) dimers. Zeitschrift Fur Physikalische Chemie, 2020, 234, 1295-1310.	2.8	9
110	Effect of the Methyl Substitution on the Combustion of Two Methylheptane Isomers: Flame Chemistry Using Vacuum-Ultraviolet (VUV) Photoionization Mass Spectrometry. Energy & Fuels, 2015, 29, 2696-2708.	5.1	8
111	The impact of the third O2 addition reaction network on ignition delay times of neo-pentane. Proceedings of the Combustion Institute, 2021, 38, 299-307.	3.9	8
112	Oxygenated PAH Formation Chemistry Investigation in Anisole Jet Stirred Reactor Oxidation by a Thermodynamic Approach. Energy & Fuels, 2021, 35, 1535-1545.	5.1	8
113	Microwave spectroscopic detection of flame-sampled combustion intermediates. RSC Advances, 2017, 7, 37867-37872.	3.6	7
114	Simultaneous production of ketohydroperoxides from low temperature oxidation of a gasoline primary reference fuel mixture. Fuel, 2021, 288, 119737.	6.4	7
115	Isomer-specific speciation behaviors probed from premixed flames fueled by acetone and propanal. Proceedings of the Combustion Institute, 2021, 38, 2441-2448.	3.9	5
116	Near-Surface Gas-Phase Methoxymethanol Is Generated by Methanol Oxidation over Pd-Based Catalysts. Journal of Physical Chemistry Letters, 2021, 12, 11252-11258.	4.6	5
117	Detecting combustion intermediates via broadband chirped-pulse microwave spectroscopy. Proceedings of the Combustion Institute, 2021, 38, 1761-1769.	3.9	4
118	From inherent correlation to constrained measurement: Model-assisted calibration in MBMS experiments. Proceedings of the Combustion Institute, 2021, 38, 1071-1079.	3.9	4
119	Synchrotron-Based VUV Photoionization Mass Spectrometry in Combustion Chemistry Research. , 2018, , 37-65.		4
120	Entanglement of n-heptane and iso-butanol chemistries in flames fueled by their mixtures. Proceedings of the Combustion Institute, 2021, 38, 2387-2395.	3.9	3
121	Effects of C1-C3 hydrocarbon blending on aromatics formation in 1-butene counterflow flames. Combustion and Flame, 2021, 230, 111427.	5.2	3
122	Experimental observation of hydrocarbon growth by resonance stabilized radicalâ€•radical chain reaction. Angewandte Chemie, 0, , .	2.0	2
123	Flame Experiments at the Advanced Light Source: New Insights into Soot Formation Processes. Journal of Visualized Experiments, 2014, , .	0.3	1
124	Prospects and Limitations of Predicting Fuel Ignition Properties from Low-Temperature Speciation Data. Energy & Fuels, 2022, 36, 3229-3238.	5.1	1
125	Congratulations to Friedrich Temps: a multifaceted career in Physical Chemistry. Zeitschrift Fur Physikalische Chemie, 2020, 234, 1223-1232.	2.8	0