

Nils Hansen

List of Publications by Citations

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124
papers

6,202
citations

43
h-index

76
g-index

126
ext. papers

7,071
ext. citations

6.2
avg, IF

5.95
L-index

#	Paper	IF	Citations
124	Alcohol combustion chemistry. <i>Progress in Energy and Combustion Science</i> , 2014 , 44, 40-102	33.6	534
123	Biofuel combustion chemistry: from ethanol to biodiesel. <i>Angewandte Chemie - International Edition</i> , 2010 , 49, 3572-97	16.4	506
122	Advances and challenges in laminar flame experiments and implications for combustion chemistry. <i>Progress in Energy and Combustion Science</i> , 2014 , 43, 36-67	33.6	342
121	Enols are common intermediates in hydrocarbon oxidation. <i>Science</i> , 2005 , 308, 1887-9	33.3	277
120	Recent contributions of flame-sampling molecular-beam mass spectrometry to a fundamental understanding of combustion chemistry. <i>Progress in Energy and Combustion Science</i> , 2009 , 35, 168-191	33.6	275
119	"Imaging" combustion chemistry via multiplexed synchrotron-photoionization mass spectrometry. <i>Physical Chemistry Chemical Physics</i> , 2008 , 10, 20-34	3.6	167
118	Identification and chemistry of C ₄ H ₃ and C ₄ H ₅ isomers in fuel-rich flames. <i>Journal of Physical Chemistry A</i> , 2006 , 110, 3670-8	2.8	137
117	Near-threshold absolute photoionization cross-sections of some reaction intermediates in combustion. <i>International Journal of Mass Spectrometry</i> , 2008 , 269, 210-220	1.9	134
116	Absolute photoionization cross-sections of some combustion intermediates. <i>International Journal of Mass Spectrometry</i> , 2012 , 309, 118-128	1.9	123
115	A detailed chemical kinetic reaction mechanism for oxidation of four small alkyl esters in laminar premixed flames. <i>Proceedings of the Combustion Institute</i> , 2009 , 32, 221-228	5.9	116
114	Identification of C ₅ H _x isomers in fuel-rich flames by photoionization mass spectrometry and electronic structure calculations. <i>Journal of Physical Chemistry A</i> , 2006 , 110, 4376-88	2.8	112
113	Detection and Identification of the Keto-Hydroperoxide (HOOCH ₂ OCHO) and Other Intermediates during Low-Temperature Oxidation of Dimethyl Ether. <i>Journal of Physical Chemistry A</i> , 2015 , 119, 7361-74	2.8	111
112	Synchrotron photoionization measurements of combustion intermediates: photoionization efficiency and identification of C ₃ H ₂ isomers. <i>Physical Chemistry Chemical Physics</i> , 2005 , 7, 806-13	3.6	107
111	Isomer-specific fuel destruction pathways in rich flames of methyl acetate and ethyl formate and consequences for the combustion chemistry of esters. <i>Journal of Physical Chemistry A</i> , 2007 , 111, 4093-101	2.8	105
110	Isomer-specific combustion chemistry in allene and propyne flames. <i>Combustion and Flame</i> , 2009 , 156, 2153-2164	5.3	102
109	Initial steps of aromatic ring formation in a laminar premixed fuel-rich cyclopentene flame. <i>Journal of Physical Chemistry A</i> , 2007 , 111, 4081-92	2.8	96
108	Combustion chemistry of enols: possible ethenol precursors in flames. <i>Journal of Physical Chemistry A</i> , 2006 , 110, 3254-60	2.8	89

107	Hydrogen-assisted isomerizations of fulvene to benzene and of larger cyclic aromatic hydrocarbons. <i>Proceedings of the Combustion Institute</i> , 2013 , 34, 279-287	5.9	84
106	High-temperature oxidation chemistry of n-butanol—experiments in low-pressure premixed flames and detailed kinetic modeling. <i>Physical Chemistry Chemical Physics</i> , 2011 , 13, 20262-74	3.6	83
105	Benzene precursors and formation routes in a stoichiometric cyclohexane flame. <i>Proceedings of the Combustion Institute</i> , 2007 , 31, 565-573	5.9	82
104	Unraveling the structure and chemical mechanisms of highly oxygenated intermediates in oxidation of organic compounds. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017 , 114, 13102-13107	11.5	80
103	Benzene formation in premixed fuel-rich 1,3-butadiene flames. <i>Proceedings of the Combustion Institute</i> , 2009 , 32, 623-630	5.9	80
102	Investigating repetitive reaction pathways for the formation of polycyclic aromatic hydrocarbons in combustion processes. <i>Combustion and Flame</i> , 2017 , 180, 250-261	5.3	74
101	Quantification of the Keto-Hydroperoxide (HOOCHOCHO) and Other Elusive Intermediates during Low-Temperature Oxidation of Dimethyl Ether. <i>Journal of Physical Chemistry A</i> , 2016 , 120, 7890-7901	2.8	72
100	Additional chain-branching pathways in the low-temperature oxidation of branched alkanes. <i>Combustion and Flame</i> , 2016 , 164, 386-396	5.3	72
99	Isomer-specific influences on the composition of reaction intermediates in dimethyl ether/propene and ethanol/propene flame. <i>Journal of Physical Chemistry A</i> , 2008 , 112, 9255-65	2.8	66
98	Exploring hydroperoxides in combustion: History, recent advances and perspectives. <i>Progress in Energy and Combustion Science</i> , 2019 , 73, 132-181	33.6	65
97	Velocity Map Ion Imaging of Chlorine Azide Photolysis: Evidence for Photolytic Production of Cyclic-N ₃ . <i>Journal of Physical Chemistry A</i> , 2003 , 107, 10608-10614	2.8	65
96	A combined ab initio and photoionization mass spectrometric study of polyynes in fuel-rich flames. <i>Physical Chemistry Chemical Physics</i> , 2008 , 10, 366-74	3.6	62
95	Composition of reaction intermediates for stoichiometric and fuel-rich dimethyl ether flames: flame-sampling mass spectrometry and modeling studies. <i>Physical Chemistry Chemical Physics</i> , 2009 , 11, 1328-39	3.6	61
94	Fuel-structure dependence of benzene formation processes in premixed flames fueled by C ₆ H ₁₂ isomers. <i>Proceedings of the Combustion Institute</i> , 2011 , 33, 585-592	5.9	60
93	The influence of ethanol addition on premixed fuel-rich propene-oxygen-argon flames. <i>Proceedings of the Combustion Institute</i> , 2007 , 31, 1119-1127	5.9	60
92	Photoionization mass spectrometric studies and modeling of fuel-rich allene and propyne flames. <i>Proceedings of the Combustion Institute</i> , 2007 , 31, 1157-1164	5.9	58
91	Exploring formation pathways of aromatic compounds in laboratory-based model flames of aliphatic fuels. <i>Combustion, Explosion and Shock Waves</i> , 2012 , 48, 508-515	1	56
90	The importance of fuel dissociation and propargyl + allyl association for the formation of benzene in a fuel-rich 1-hexene flame. <i>Physical Chemistry Chemical Physics</i> , 2010 , 12, 12112-22	3.6	55

89	An experimental and kinetic modeling study of methyl formate low-pressure flames. <i>Combustion and Flame</i> , 2011 , 158, 732-741	5-3	55
88	An experimental and kinetic modeling study on dimethyl carbonate (DMC) pyrolysis and combustion. <i>Combustion and Flame</i> , 2016 , 164, 224-238	5-3	54
87	Near-threshold photoionization mass spectra of combustion-generated high-molecular-weight soot precursors. <i>Journal of Aerosol Science</i> , 2013 , 58, 86-102	4-3	54
86	Fuel-specific influences on the composition of reaction intermediates in premixed flames of three C ₅ H ₁₀ O ₂ ester isomers. <i>Physical Chemistry Chemical Physics</i> , 2011 , 13, 6901-13	3-6	54
85	Multiple benzene-formation paths in a fuel-rich cyclohexane flame. <i>Combustion and Flame</i> , 2011 , 158, 2077-2089	5-3	51
84	n-Heptane cool flame chemistry: Unraveling intermediate species measured in a stirred reactor and motored engine. <i>Combustion and Flame</i> , 2018 , 187, 199-216	5-3	47
83	Influences of the molecular fuel structure on combustion reactions towards soot precursors in selected alkane and alkene flames. <i>Physical Chemistry Chemical Physics</i> , 2018 , 20, 10780-10795	3-6	46
82	Electron ionization, photoionization and photoelectron/photoion coincidence spectroscopy in mass-spectrometric investigations of a low-pressure ethylene/oxygen flame. <i>Proceedings of the Combustion Institute</i> , 2015 , 35, 779-786	5-9	44
81	2D-imaging of sampling-probe perturbations in laminar premixed flames using Kr X-ray fluorescence. <i>Combustion and Flame</i> , 2017 , 181, 214-224	5-3	42
80	The predictive capability of an automatically generated combustion chemistry mechanism: Chemical structures of premixed iso-butanol flames. <i>Combustion and Flame</i> , 2013 , 160, 2343-2351	5-3	42
79	Chemical Structures of Low-Pressure Premixed Methylcyclohexane Flames as Benchmarks for the Development of a Predictive Combustion Chemistry Model. <i>Energy & Fuels</i> , 2011 , 25, 5611-5625	4-1	42
78	Photoionization mass spectrometry and modeling study of premixed flames of three unsaturated C ₅ H ₈ O ₂ esters. <i>Proceedings of the Combustion Institute</i> , 2013 , 34, 443-451	5-9	41
77	Detection of Aliphatically Bridged Multi-Core Polycyclic Aromatic Hydrocarbons in Sooting Flames with Atmospheric-Sampling High-Resolution Tandem Mass Spectrometry. <i>Journal of Physical Chemistry A</i> , 2018 , 122, 9338-9349	2-8	41
76	Soot precursor formation and limitations of the stabilomer grid. <i>Proceedings of the Combustion Institute</i> , 2015 , 35, 1819-1826	5-9	40
75	PAH formation and soot morphology in flames of C ₄ fuels. <i>Proceedings of the Combustion Institute</i> , 2015 , 35, 1761-1769	5-9	39
74	Absolute cross-sections for dissociative photoionization of some small esters. <i>International Journal of Mass Spectrometry</i> , 2010 , 292, 14-22	1-9	37
73	Exploration of the oxidation chemistry of dimethoxymethane: Jet-stirred reactor experiments and kinetic modeling. <i>Combustion and Flame</i> , 2018 , 193, 491-501	5-3	36
72	Consumption and hydrocarbon growth processes in a 2-methyl-2-butene flame. <i>Combustion and Flame</i> , 2017 , 175, 34-46	5-3	34

71	Photofragment translation spectroscopy of ClN ₃ at 248 nm: determination of the primary and secondary dissociation pathways. <i>Journal of Chemical Physics</i> , 2005 , 123, 104305	3.9	32
70	Combustion chemistry in the twenty-first century: Developing theory-informed chemical kinetics models. <i>Progress in Energy and Combustion Science</i> , 2021 , 83, 100886	33.6	31
69	Aromatic ring formation in opposed-flow diffusive 1,3-butadiene flames. <i>Proceedings of the Combustion Institute</i> , 2017 , 36, 947-955	5.9	30
68	New insights into the low-temperature oxidation of 2-methylhexane. <i>Proceedings of the Combustion Institute</i> , 2017 , 36, 373-382	5.9	30
67	Low-Temperature Oxidation of Ethylene by Ozone in a Jet-Stirred Reactor. <i>Journal of Physical Chemistry A</i> , 2018 , 122, 8674-8685	2.8	30
66	A VUV photoionization study of the combustion-relevant reaction of the phenyl radical (C ₆ H ₅) with propylene (C ₃ H ₆) in a high temperature chemical reactor. <i>Journal of Physical Chemistry A</i> , 2012 , 116, 3541-6	2.8	28
65	The influence of dimethoxy methane (DMM)/dimethyl carbonate (DMC) addition on a premixed ethane/oxygen/argon flame. <i>Proceedings of the Combustion Institute</i> , 2017 , 36, 449-457	5.9	24
64	Exploring the negative temperature coefficient behavior of acetaldehyde based on detailed intermediate measurements in a jet-stirred reactor. <i>Combustion and Flame</i> , 2018 , 192, 120-129	5.3	23
63	Ion dissociation dynamics of the chlorine azide cation (ClN ₃ ⁺) investigated by velocity map imaging. <i>Journal of Chemical Physics</i> , 2003 , 118, 10485-10493	3.9	23
62	Understanding the reaction pathways in premixed flames fueled by blends of 1,3-butadiene and n-butanol. <i>Proceedings of the Combustion Institute</i> , 2015 , 35, 771-778	5.9	22
61	Photodissociation dynamics of ClN ₃ at 203 nm: the NCl (<i>j</i>) product branching ratio. <i>Chemical Physics Letters</i> , 2003 , 368, 568-573	2.5	22
60	Experimental and modelling study of speciation and benzene formation pathways in premixed 1-hexene flames. <i>Proceedings of the Combustion Institute</i> , 2015 , 35, 325-332	5.9	21
59	The rotational spectrum of dichlorocarbene, C ₃₅ Cl ₂ , observed by molecular beam-Fourier transform microwave spectroscopy. <i>Physical Chemistry Chemical Physics</i> , 2001 , 3, 50-55	3.6	21
58	Investigating the effect of oxy-fuel combustion and light coal volatiles interaction: A mass spectrometric study. <i>Combustion and Flame</i> , 2019 , 204, 320-330	5.3	20
57	Knowledge generation through data research: New validation targets for the refinement of kinetic mechanisms. <i>Proceedings of the Combustion Institute</i> , 2019 , 37, 743-750	5.9	20
56	Identification of the Criegee intermediate reaction network in ethylene ozonolysis: impact on energy conversion strategies and atmospheric chemistry. <i>Physical Chemistry Chemical Physics</i> , 2019 , 21, 7341-7357	3.6	19
55	An Aromatic Universe-A Physical Chemistry Perspective. <i>Journal of Physical Chemistry A</i> , 2021 , 125, 3826-3840	3.8	19
54	Flame chemistry of tetrahydropyran as a model heteroatomic biofuel. <i>Proceedings of the Combustion Institute</i> , 2013 , 34, 259-267	5.9	18

53	Demonstration of a burner for the investigation of partially premixed low-temperature flames. <i>Combustion and Flame</i> , 2010 , 157, 1966-1975	5.3	18
52	Role of ring-enlargement reactions in the formation of aromatic hydrocarbons. <i>Physical Chemistry Chemical Physics</i> , 2020 , 22, 4699-4714	3.6	18
51	Formation of Oxygenated and Hydrocarbon Intermediates in Premixed Combustion of 2-Methylfuran. <i>Zeitschrift Fur Physikalische Chemie</i> , 2015 , 229, 507-528	3.1	17
50	Identification of isomeric hydrocarbons by Rydberg photoelectron spectroscopy. <i>Journal of Electron Spectroscopy and Related Phenomena</i> , 2008 , 165, 5-10	1.7	17
49	The Cl to NCl branching ratio in 248-nm photolysis of chlorine azide. <i>Chemical Physics Letters</i> , 2004 , 391, 334-337	2.5	17
48	The C5 chemistry preceding the formation of polycyclic aromatic hydrocarbons in a premixed 1-pentene flame. <i>Combustion and Flame</i> , 2019 , 206, 411-423	5.3	16
47	Combustion chemistry of alcohols: Experimental and modeled structure of a premixed 2-methylbutanol flame. <i>Proceedings of the Combustion Institute</i> , 2015 , 35, 813-820	5.9	16
46	Review of the Influence of Oxygenated Additives on the Combustion Chemistry of Hydrocarbons. <i>Energy & Fuels</i> , 2021 , 35, 13550-13568	4.1	15
45	Imaging CIN(3) photodissociation from 234 to 280 nm. <i>Physical Chemistry Chemical Physics</i> , 2006 , 8, 2958-2963	3.6	14
44	Isomer-Selective Detection of Keto-Hydroperoxides in the Low-Temperature Oxidation of Tetrahydrofuran. <i>Journal of Physical Chemistry A</i> , 2019 , 123, 8274-8284	2.8	13
43	Nuclear spin-rotation interaction in CF ₂ () observed by Fourier transform microwave spectroscopy. <i>Chemical Physics Letters</i> , 2000 , 327, 97-103	2.5	13
42	Investigation of the chemical structures of laminar premixed flames fueled by acetaldehyde. <i>Proceedings of the Combustion Institute</i> , 2017 , 36, 1287-1294	5.9	12
41	Exploring the high-temperature kinetics of diethyl carbonate (DEC) under pyrolysis and flame conditions. <i>Combustion and Flame</i> , 2017 , 181, 71-81	5.3	12
40	A high-temperature study of 2-pentanone oxidation: experiment and kinetic modeling. <i>Proceedings of the Combustion Institute</i> , 2019 , 37, 1683-1690	5.9	12
39	Studies of laminar opposed-flow diffusion flames of acetylene at low-pressures with photoionization mass spectrometry. <i>Proceedings of the Combustion Institute</i> , 2013 , 34, 1067-1075	5.9	12
38	Premixed flame chemistry of a gasoline primary reference fuel surrogate. <i>Combustion and Flame</i> , 2017 , 179, 300-311	5.3	11
37	Chemical insights into the larger sooting tendency of 2-methyl-2-butene compared to n-pentane. <i>Combustion and Flame</i> , 2019 , 208, 182-197	5.3	11
36	The influence of i-butanol addition to the chemistry of premixed 1,3-butadiene flames. <i>Proceedings of the Combustion Institute</i> , 2017 , 36, 1311-1319	5.9	11

35	Investigation of sampling-probe distorted temperature fields with X-ray fluorescence spectroscopy. <i>Proceedings of the Combustion Institute</i> , 2019 , 37, 1401-1408	5.9	10
34	Probing fuel-specific reaction intermediates from laminar premixed flames fueled by two C5 ketones and model interpretations. <i>Proceedings of the Combustion Institute</i> , 2019 , 37, 1699-1707	5.9	10
33	Identification of the molecular-weight growth reaction network in counterflow flames of the C ₃ H ₄ isomers allene and propyne. <i>Proceedings of the Combustion Institute</i> , 2021 , 38, 1477-1485	5.9	10
32	A further experimental and modeling study of acetaldehyde combustion kinetics. <i>Combustion and Flame</i> , 2018 , 196, 337-350	5.3	9
31	Providing effective constraints for developing ketene combustion mechanisms: A detailed kinetic investigation of diacetyl flames. <i>Combustion and Flame</i> , 2019 , 205, 11-21	5.3	8
30	Effect of the Methyl Substitution on the Combustion of Two Methylheptane Isomers: Flame Chemistry Using Vacuum-Ultraviolet (VUV) Photoionization Mass Spectrometry. <i>Energy & Fuels</i> , 2015 , 29, 2696-2708	4.1	7
29	The impact of the third O ₂ addition reaction network on ignition delay times of neo-pentane. <i>Proceedings of the Combustion Institute</i> , 2021 , 38, 299-307	5.9	7
28	Influence of ozone addition on the low-temperature oxidation of dimethyl ether in a jet-stirred reactor. <i>Combustion and Flame</i> , 2020 , 214, 277-286	5.3	6
27	Investigation of the low-temperature oxidation of n-butanal in a jet-stirred reactor. <i>Proceedings of the Combustion Institute</i> , 2019 , 37, 453-460	5.9	6
26	Insights into the oxidation kinetics of a cetane improver \square , 1,2-dimethoxyethane (1,2-DME) with experimental and modeling methods. <i>Proceedings of the Combustion Institute</i> , 2019 , 37, 555-564	5.9	6
25	Microwave spectroscopic detection of flame-sampled combustion intermediates. <i>RSC Advances</i> , 2017 , 7, 37867-37872	3.7	6
24	Nucleation of soot: experimental assessment of the role of polycyclic aromatic hydrocarbon (PAH) dimers. <i>Zeitschrift Fur Physikalische Chemie</i> , 2020 , 234, 1295-1310	3.1	6
23	Low- and high-temperature study of n-heptane combustion chemistry. <i>Proceedings of the Combustion Institute</i> , 2021 , 38, 405-413	5.9	6
22	Near-Surface Imaging of the Multicomponent Gas Phase above a Silver Catalyst during Partial Oxidation of Methanol. <i>ACS Catalysis</i> , 2021 , 11, 155-168	13.1	6
21	Exploring low temperature oxidation of 1-butene in jet-stirred reactors. <i>Combustion and Flame</i> , 2020 , 222, 259-271	5.3	5
20	Molecular-Weight Growth in Ozone-Initiated Low-Temperature Oxidation of Methyl Crotonate. <i>Journal of Physical Chemistry A</i> , 2020 , 124, 7881-7892	2.8	5
19	Oxygenated PAH Formation Chemistry Investigation in Anisole Jet Stirred Reactor Oxidation by a Thermodynamic Approach. <i>Energy & Fuels</i> , 2021 , 35, 1535-1545	4.1	4
18	Simultaneous production of ketohydroperoxides from low temperature oxidation of a gasoline primary reference fuel mixture. <i>Fuel</i> , 2021 , 288, 119737	7.1	4

17	From inherent correlation to constrained measurement: Model-assisted calibration in MBMS experiments. <i>Proceedings of the Combustion Institute</i> , 2021 , 38, 1071-1079	5.9	4
16	Synchrotron-Based VUV Photoionization Mass Spectrometry in Combustion Chemistry Research 2018 , 37-65		3
15	Extreme Low-Temperature Combustion Chemistry: Ozone-Initiated Oxidation of Methyl Hexanoate. <i>Journal of Physical Chemistry A</i> , 2020 , 124, 9897-9914	2.8	3
14	Entanglement of n-heptane and iso-butanol chemistries in flames fueled by their mixtures. <i>Proceedings of the Combustion Institute</i> , 2021 , 38, 2387-2395	5.9	3
13	Detecting combustion intermediates via broadband chirped-pulse microwave spectroscopy. <i>Proceedings of the Combustion Institute</i> , 2021 , 38, 1761-1769	5.9	2
12	Isomer-specific speciation behaviors probed from premixed flames fueled by acetone and propanal. <i>Proceedings of the Combustion Institute</i> , 2021 , 38, 2441-2448	5.9	2
11	Experimental flat flame study of monoterpenes: Insights into the combustion kinetics of α -pinene, β -pinene, and myrcene. <i>Proceedings of the Combustion Institute</i> , 2021 , 38, 2431-2440	5.9	2
10	Chemical insights into the multi-regime low-temperature oxidation of di-n-propyl ether: Jet-stirred reactor experiments and kinetic modeling. <i>Combustion and Flame</i> , 2021 , 233, 111592	5.3	2
9	Flame experiments at the advanced light source: new insights into soot formation processes. <i>Journal of Visualized Experiments</i> , 2014 ,	1.6	1
8	Identification of the acetaldehyde oxide Criegee intermediate reaction network in the ozone-assisted low-temperature oxidation of -2-butene. <i>Physical Chemistry Chemical Physics</i> , 2021 , 23, 23554-23566	3.6	1
7	Experimental Observation of Hydrocarbon Growth by Resonance-Stabilized Radical-Radical Chain Reaction. <i>Angewandte Chemie - International Edition</i> , 2021 ,	16.4	1
6	Effects of C1-C3 hydrocarbon blending on aromatics formation in 1-butene counterflow flames. <i>Combustion and Flame</i> , 2021 , 230, 111427	5.3	1
5	Numerical analysis of soot emissions from gasoline-ethanol and gasoline-butanol blends under gasoline compression ignition conditions. <i>Fuel</i> , 2022 , 319, 123740	7.1	1
4	Molecular-growth pathways in premixed flames of benzene and toluene doped with propyne. <i>Combustion and Flame</i> , 2022 , 112075	5.3	0
3	Near-Surface Gas-Phase Methoxymethanol Is Generated by Methanol Oxidation over Pd-Based Catalysts. <i>Journal of Physical Chemistry Letters</i> , 2021 , 12, 11252-11258	6.4	
2	Congratulations to Friedrich Temps: a multifaceted career in Physical Chemistry. <i>Zeitschrift Fur Physikalische Chemie</i> , 2020 , 234, 1223-1232	3.1	
1	Prospects and Limitations of Predicting Fuel Ignition Properties from Low-Temperature Speciation Data. <i>Energy & Fuels</i> , 2022 , 36, 3229-3238	4.1	