Charles K Westbrook

List of Publications by Year
in descending order

89	14,441	38660 50	48187 88
papers	citations	h-index	g-index

89	89	89	5265
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Simplified Reaction Mechanisms for the Oxidation of Hydrocarbon Fuels in Flames. Combustion Science and Technology, 1981, 27, 31-43.	1.2	1,897
2	Chemical kinetic modeling of hydrocarbon combustion. Progress in Energy and Combustion Science, 1984, 10, 1-57.	15.8	1,320
3	Kinetic modeling of gasoline surrogate components and mixtures under engine conditions. Proceedings of the Combustion Institute, 2011, 33, 193-200.	2.4	921
4	A comprehensive modeling study of hydrogen oxidation. International Journal of Chemical Kinetics, 2004, 36, 603-622.	1.0	833
5	A comprehensive detailed chemical kinetic reaction mechanism for combustion of n-alkane hydrocarbons from n-octane to n-hexadecane. Combustion and Flame, 2009, 156, 181-199.	2.8	721
6	Chemical kinetics of hydrocarbon ignition in practical combustion systems. Proceedings of the Combustion Institute, 2000, 28, 1563-1577.	2.4	691
7	Biofuel Combustion Chemistry: From Ethanol to Biodiesel. Angewandte Chemie - International Edition, 2010, 49, 3572-3597.	7.2	587
8	Aromatic and Polycyclic Aromatic Hydrocarbon Formation in a Laminar Premixed n-Butane Flame. Combustion and Flame, 1998, 114, 192-213.	2.8	511
9	Chemical Kinetic Modeling Study of the Effects of Oxygenated Hydrocarbons on Soot Emissions from Diesel Enginesâ€. Journal of Physical Chemistry A, 2006, 110, 6912-6922.	1.1	476
10	A comprehensive chemical kinetic combustion model for the four butanol isomers. Combustion and Flame, 2012, 159, 2028-2055.	2.8	463
11	Detailed chemical kinetic oxidation mechanism for a biodiesel surrogate. Combustion and Flame, 2008, 154, 507-528.	2.8	399
12	A comparative experimental and computational study of methanol, ethanol, and n-butanol flames. Combustion and Flame, 2010, 157, 1989-2004.	2.8	346
13	Detailed chemical kinetic mechanism for the oxidation of biodiesel fuels blend surrogate. Combustion and Flame, 2010, 157, 893-908.	2.8	333
14	Comprehensive Mechanism for Methanol Oxidation. Combustion Science and Technology, 1979, 20, 125-140.	1.2	236
15	Detailed Chemical Kinetic Modeling of Cyclohexane Oxidationâ€. Journal of Physical Chemistry A, 2007, 111, 3761-3775.	1.1	192
16	A Comprehensive Chemical Kinetic Reaction Mechanism for Oxidation and Pyrolysis of Propane and Propene. Combustion Science and Technology, 1984, 37, 117-152.	1.2	185
17	A numerical study of laminar flame wall quenching. Combustion and Flame, 1981, 40, 81-99.	2.8	182
18	Chemical kinetics of the high pressure oxidation of n-butane and its relation to engine knock. Combustion and Flame, 1986, 63, 113-133.	2.8	178

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19	Chemical kinetics of hydrocarbon oxidation in gaseous detonations. Combustion and Flame, 1982, 46, 191-210.	2.8	177
20	Prediction of laminar flame properties of methanol-air mixtures. Combustion and Flame, 1980, 37, 171-192.	2.8	166
21	A comprehensive iso-octane combustion model with improved thermochemistry and chemical kinetics. Combustion and Flame, 2017, 178, 111-134.	2.8	164
22	Chemical kinetics and modeling of combustion processes. Proceedings of the Combustion Institute, 1981, 18, 749-767.	0.3	148
23	Numerical Modeling of Flame Inhibition by CF3Br. Combustion Science and Technology, 1983, 34, 201-225.	1.2	148
24	An Analytical Study of the Shock Tube Ignition of Mixtures of Methane and Ethane. Combustion Science and Technology, 1979, 20, 5-17.	1.2	130
25	An experimental and modeling study of shock tube and rapid compression machine ignition of n-butylbenzene/air mixtures. Combustion and Flame, 2014, 161, 49-64.	2.8	126
26	The autoignition of iso-cetane at high to moderate temperatures and elevated pressures: Shock tube experiments and kinetic modeling. Combustion and Flame, 2009, 156, 2165-2172.	2.8	122
27	Biofuels Combustion. Annual Review of Physical Chemistry, 2013, 64, 201-219.	4.8	120
28	Autoignition behavior of unsaturated hydrocarbons in the low and high temperature regions. Proceedings of the Combustion Institute, 2011, 33, 201-208.	2.4	119
29	Speciation and the laminar burning velocities of poly(oxymethylene) dimethyl ether 3 (POMDME3) flames: An experimental and modeling study. Proceedings of the Combustion Institute, 2017, 36, 1269-1278.	2.4	112
30	Chemical kinetics of octane sensitivity in a spark-ignition engine. Combustion and Flame, 2017, 175, 2-15.	2.8	103
31	Detailed Kinetic Modeling Study of n-Pentanol Oxidation. Energy & Fuels, 2012, 26, 6678-6685.	2.5	100
32	A comprehensive experimental and modeling study of iso-pentanol combustion. Combustion and Flame, 2013, 160, 2712-2728.	2.8	95
33	Effects of fuel branching on the propagation of octane isomers flames. Combustion and Flame, 2012, 159, 1426-1436.	2.8	90
34	A comprehensive combustion chemistry study of 2,5-dimethylhexane. Combustion and Flame, 2014, 161, 1444-1459.	2.8	88
35	Hydrogen Oxidation Kinetics in Gaseous Detonations. Combustion Science and Technology, 1982, 29, 67-81.	1.2	87
36	Chemical kinetic study of a novel lignocellulosic biofuel: Di-n-butyl ether oxidation in a laminar flow reactor and flames. Combustion and Flame, 2014, 161, 798-809.	2.8	85

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37	A kinetic modeling study of n-pentane oxidation in a well-stirred reactor. Combustion and Flame, 1988, 72, 45-62.	2.8	79
38	Gaseous hydrocarboní—¸air detonations. Combustion and Flame, 1991, 84, 376-390.	2.8	78
39	Chemical kinetic modeling study of shock tube ignition of heptane isomers. International Journal of Chemical Kinetics, 2001, 33, 868-877.	1.0	77
40	A high pressure shock tube study of n-propylbenzene oxidation and its comparison with n-butylbenzene. Combustion and Flame, 2012, 159, 2219-2232.	2.8	76
41	An experimental and kinetic modeling study on dimethyl carbonate (DMC) pyrolysis and combustion. Combustion and Flame, 2016, 164, 224-238.	2.8	75
42	Inhibition of hydrocarbon oxidation in laminar flames and detonations by halogenated compounds. Proceedings of the Combustion Institute, 1982, 19, 127-141.	0.3	74
43	A flow reactor study of neopentane oxidation at 8 atmospheres: experiments and modeling. Combustion and Flame, 1999, 118, 415-430.	2.8	71
44	Numerical modeling of ethylene oxidation in laminar flames. Combustion and Flame, 1983, 52, 299-313.	2.8	64
45	Inhibition of Laminar Methane-Air and Methanol-Air Flames by Hydrogen Bromide. Combustion Science and Technology, 1980, 23, 191-202.	1.2	63
46	Oxidation of small alkyl esters in flames. Combustion and Flame, 2014, 161, 810-817.	2.8	63
47	Experimental and Kinetic Modeling Study of 2-Methyl-2-Butene: Allylic Hydrocarbon Kinetics. Journal of Physical Chemistry A, 2015, 119, 7462-7480.	1.1	62
48	Fuel-specific influences on the composition of reaction intermediates in premixed flames of three C5H10O2 ester isomers. Physical Chemistry Chemical Physics, 2011, 13, 6901.	1.3	60
49	A new chemical kinetic method of determining RON and MON values for single component and multicomponent mixtures of engine fuels. Combustion and Flame, 2018, 195, 50-62.	2.8	58
50	An experimental and kinetic modeling study of the oxidation of hexane isomers: Developing consistent reaction rate rules for alkanes. Combustion and Flame, 2019, 206, 123-137.	2.8	53
51	Reduced Chemical Kinetic Mechanisms for Hydrocarbon Fuels. Journal of Propulsion and Power, 2002, 18, 192-198.	1.3	52
52	Low-temperature speciation and chemical kinetic studies of n-heptane. Combustion and Flame, 2013, 160, 2693-2706.	2.8	49
53	An experimental and modeling study of surrogate mixtures of n-propyl- and n-butylbenzene in n-heptane to simulate n-decylbenzene ignition. Combustion and Flame, 2014, 161, 1460-1473.	2.8	44
54	Shock tube studies of methyl butanoate pyrolysis with relevance to biodiesel. Combustion and Flame, 2012, 159, 3235-3241.	2.8	43

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55	Experimental and modeling study of the oxidation of n- and iso-butanal. Combustion and Flame, 2013, 160, 1609-1626.	2.8	40
56	Multi-fuel surrogate chemical kinetic mechanisms for real world applications. Physical Chemistry Chemical Physics, 2018, 20, 10588-10606.	1.3	40
57	On the Combustion Chemistry of n-Heptane and n-Butanol Blends. Journal of Physical Chemistry A, 2012, 116, 12406-12421.	1.1	39
58	Experimental and modeling study of the pyrolysis and oxidation of an iso-paraffinic alcohol-to-jet fuel. Combustion and Flame, 2019, 201, 57-64.	2.8	36
59	The Sulfur Catalyzed Recombination of Atomic Oxygen in a CO/O2/Ar Flame. Combustion Science and Technology, 1983, 30, 241-271.	1.2	34
60	Detailed chemical kinetics study of the role of pressure in butane pyrolysis. Industrial & Engineering Chemistry Research, 1992, 31, 37-45.	1.8	32
61	Effects of Propane on Ignition of Methane â€“Ethane â€“ Air Mixtures. Combustion Science and Technology, 1983, 33, 315-319.	1.2	30
62	An Experimental and Kinetic Modeling Study of Premixed Laminar Flames of Methyl Pentanoate and Methyl Hexanoate. Zeitschrift Fur Physikalische Chemie, 2015, 229, 759-780.	1.4	29
63	High-temperature ignition of propane with MTBE as an additive: Shock tube experiments and modeling. International Journal of Chemical Kinetics, 1994, 26, 757-770.	1.0	27
64	The Effect of Carbonâ€“Carbon Double Bonds on the Combustion Chemistry of Small Fatty Acid Esters. Zeitschrift Fur Physikalische Chemie, 2011, 225, 1293-1314.	1.4	26
65	Fuel molecular structure effect on autoignition of highly branched iso-alkanes at low-to-intermediate temperatures: Iso-octane versus iso-dodecane. Combustion and Flame, 2020, 214, 152-166.	2.8	26
66	Use of chemical kinetics to predict critical parameters of gaseous detonations. Combustion, Explosion and Shock Waves, 1983, 19, 753-766.	0.3	24
67	A generalized ICE method for chemically reactive flows in combustion systems. Journal of Computational Physics, 1978, 29, 67-80.	1.9	21
68	Formulation of an RP-1 pyrolysis surrogate from shock tube measurements of fuel and ethylene time histories. Fuel, 2013, 103, 1051-1059.	3.4	20
69	Experimental and Modeling Study of Methyl trans-3-Hexenoate Autoignition. Energy & Fuels, 2014, 28, 7227-7234.	2.5	18
70	Two-stage ignition behavior and octane sensitivity of toluene reference fuels as gasoline surrogate. Combustion and Flame, 2019, 210, 100-113.	2.8	18
71	Detailed kinetics of fossil and renewable fuel combustion. Computer Aided Chemical Engineering, 2019, , 363-443.	0.3	18
72	Chemical kinetic modeling of higher hydrocarbon fuels. AIAA Journal, 1986, 24, 2002-2009.	1.5	17

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73	Shock tube and modeling study of 2,7-dimethyloctane pyrolysis and oxidation. Combustion and Flame, 2015, 162, 2296-2306.	2.8	17
74	A combined experimental and modeling study of combustion properties of an isoparaffinic alcohol-to-jet fuel. Combustion and Flame, 2022, 240, 111994.	2.8	16
75	A detailed chemical kinetic model for gas phase combustion of TNT. Proceedings of the Combustion Institute, 2007, 31, 2343-2351.	2.4	15
76	Key Chemical Kinetic Steps in Reaction Mechanisms for Fuels from Biomass: A Perspective. Energy & Fuels, 2021, 35, 15339-15359.	2.5	13
77	Chemical kinetic basis of synergistic blending for research octane number. Fuel, 2022, 307, 121865.	3.4	13
78	Propagation of a flame through a stratified charge combustion chamber. Acta Astronautica, 1978, 5, 1185-1198.	1.7	12
79	The Ideal Gas Thermodynamics of Diesel Fuel Ingredients. I. Naphthalene Derivatives and Their Radicals. Journal of Physical and Chemical Reference Data, 2000, 29, 463-517.	1.9	12
80	Autoignition of CRC diesel surrogates at low temperature combustion conditions: Rapid compression machine experiments and modeling. Combustion and Flame, 2020, 219, 178-197.	2.8	11
81	Mechanism Reduction and Generation Using Analysis of Major Fuel Consumption Pathways forn-Heptane in Premixed and Diffusion Flames. Energy & Fuels, 2007, 21, 1967-1976.	2.5	10
82	Shock-tube spectroscopic CO and H2O measurements during 2-methyl-1-butene combustion and chemical kinetics modeling. Combustion and Flame, 2022, 238, 111919.	2.8	8
83	Shockâ€tube spectroscopic water measurements and detailed kinetics modeling of 1â€pentene and 3â€methylâ€1â€butene. International Journal of Chemical Kinetics, 2021, 53, 67-83.	1.0	7
84	Evaluation of Light-Off Limits for a Novel Oxy-Combustion Process for Enhanced Oil Recovery (EOR). Energy & Fuels, 2013, 27, 3438-3445.	2.5	6
85	Oxidation of an isoâ€paraffinic alcoholâ€toâ€jet fuel and nâ€heptane mixture: An experimental and modeling study. International Journal of Chemical Kinetics, 2021, 53, 1014-1035.	1.0	5
86	A Shock-Tube and Chemical Kinetics Model Investigation Encompassing all Five Pentene Isomers. Fuel, 2022, 323, 124223.	3.4	4
87	Numerical Modeling Capabilities for the Simulation of Toxic By-Products Formation in Combustion Processes. Combustion Science and Technology, 1994, 101, 383-396.	1.2	3
88	An analysis of gas phase ethanol-water chemistry for diamond CVD. Diamond and Related Materials, 1995, 4, 1277-1288.	1.8	2
89	Numerical methods in laminar flame propagation. Combustion and Flame, 1985, 59, 315.	2.8	0