Charles K Westbrook

List of Publications by Citations

88 papers	11,924 citations	48 h-index	89 g-index
89 ext. papers	13,248 ext. citations	4.7 avg, IF	6.39 L-index

#	Paper	IF	Citations
88	Simplified Reaction Mechanisms for the Oxidation of Hydrocarbon Fuels in Flames. *Combustion Science and Technology*, **1981**, 27, 31-43	1.5	1514
87	Chemical kinetic modeling of hydrocarbon combustion. *Progress in Energy and Combustion Science*, **1984**, 10, 1-57	33.6	1093
86	Kinetic modeling of gasoline surrogate components and mixtures under engine conditions. *Proceedings of the Combustion Institute*, **2011**, 33, 193-200	5.9	763
85	A comprehensive modeling study of hydrogen oxidation. *International Journal of Chemical Kinetics*, **2004**, 36, 603-622	1.4	606
84	Chemical kinetics of hydrocarbon ignition in practical combustion systems. *Proceedings of the Combustion Institute*, **2000**, 28, 1563-1577	5.9	606
83	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	5.3	596
82	Biofuel combustion chemistry: from ethanol to biodiesel. *Angewandte Chemie - International Edition* , **2010**, 49, 3572-97	16.4	506
81	Aromatic and Polycyclic Aromatic Hydrocarbon Formation in a Laminar Premixed n-Butane Flame. *Combustion and Flame*, **1998**, 114, 192-213	5.3	444
80	Chemical kinetic modeling study of the effects of oxygenated hydrocarbons on soot emissions from diesel engines. *Journal of Physical Chemistry A*, **2006**, 110, 6912-22	2.8	414
79	A comprehensive chemical kinetic combustion model for the four butanol isomers. *Combustion and Flame*, **2012**, 159, 2028-2055	5.3	407
78	Detailed chemical kinetic oxidation mechanism for a biodiesel surrogate. *Combustion and Flame*, **2008**, 154, 507-528	5.3	347
77	A comparative experimental and computational study of methanol, ethanol, and n-butanol flames. *Combustion and Flame*, **2010**, 157, 1989-2004	5.3	293
76	Detailed chemical kinetic mechanism for the oxidation of biodiesel fuels blend surrogate. *Combustion and Flame*, **2010**, 157, 893-908	5.3	283
75	Comprehensive Mechanism for Methanol Oxidation. *Combustion Science and Technology*, **1979**, 20, 125-140	1.5	204
74	Detailed chemical kinetic modeling of cyclohexane oxidation. *Journal of Physical Chemistry A*, **2007**, 111, 3761-75	2.8	170
73	Chemical kinetics of the high pressure oxidation of n-butane and its relation to engine knock. *Combustion and Flame*, **1986**, 63, 113-133	5.3	163
72	A numerical study of laminar flame wall quenching. *Combustion and Flame*, **1981**, 40, 81-99	5.3	157

71	A Comprehensive Chemical Kinetic Reaction Mechanism for Oxidation and Pyrolysis of Propane and Propene. *Combustion Science and Technology*, **1984**, 37, 117-152	1.5	154
70	Prediction of laminar flame properties of methanol-air mixtures. *Combustion and Flame*, **1980**, 37, 171-192	5.3	141
69	Numerical Modeling of Flame Inhibition by CF3Br. *Combustion Science and Technology*, **1983**, 34, 201-225	1.5	138
68	A comprehensive iso-octane combustion model with improved thermochemistry and chemical kinetics. *Combustion and Flame*, **2017**, 178, 111-134	5.3	130
67	Chemical kinetics of hydrocarbon oxidation in gaseous detonations. *Combustion and Flame*, **1982**, 46, 191-210	5.3	118
66	Chemical kinetics and modeling of combustion processes. *Proceedings of the Combustion Institute*, **1981**, 18, 749-767		114
65	An Analytical Study of the Shock Tube Ignition of Mixtures of Methane and Ethane. *Combustion Science and Technology*, **1979**, 20, 5-17	1.5	112
64	Biofuels combustion. *Annual Review of Physical Chemistry*, **2013**, 64, 201-19	15.7	108
63	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	5.3	107
62	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	5.3	102
61	Autoignition behavior of unsaturated hydrocarbons in the low and high temperature regions. *Proceedings of the Combustion Institute*, **2011**, 33, 201-208	5.9	101
60	Chemical kinetics of octane sensitivity in a spark-ignition engine. *Combustion and Flame*, **2017**, 175, 2-15	5.3	88
59	Detailed Kinetic Modeling Study of n-Pentanol Oxidation. *Energy & Fuels*, **2012**, 26, 6678-6685	4.1	84
58	Effects of fuel branching on the propagation of octane isomers flames. *Combustion and Flame*, **2012**, 159, 1426-1436	5.3	79
57	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	5.9	78
56	A comprehensive experimental and modeling study of iso-pentanol combustion. *Combustion and Flame*, **2013**, 160, 2712-2728	5.3	77
55	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	5.3	71
54	A comprehensive combustion chemistry study of 2,5-dimethylhexane. *Combustion and Flame*, **2014**, 161, 1444-1459	5.3	71

53	A kinetic modeling study of n-pentane oxidation in a well-stirred reactor. *Combustion and Flame*, **1988**, 72, 45-62	5.3	70
52	Hydrogen Oxidation Kinetics in Gaseous Detonations. *Combustion Science and Technology*, **1982**, 29, 67-81	1.5	70
51	Chemical kinetic modeling study of shock tube ignition of heptane isomers. *International Journal of Chemical Kinetics*, **2001**, 33, 868-877	1.4	69
50	A high pressure shock tube study of n-propylbenzene oxidation and its comparison with n-butylbenzene. *Combustion and Flame*, **2012**, 159, 2219-2232	5.3	67
49	A flow reactor study of neopentane oxidation at 8 atmospheres: experiments and modeling. *Combustion and Flame*, **1999**, 118, 415-430	5.3	66
48	Inhibition of hydrocarbon oxidation in laminar flames and detonations by halogenated compounds. *Proceedings of the Combustion Institute*, **1982**, 19, 127-141		64
47	Gaseous hydrocarbon?air detonations. *Combustion and Flame*, **1991**, 84, 376-390	5.3	59
46	Experimental and Kinetic Modeling Study of 2-Methyl-2-Butene: Allylic Hydrocarbon Kinetics. *Journal of Physical Chemistry A*, **2015**, 119, 7462-80	2.8	54
45	An experimental and kinetic modeling study on dimethyl carbonate (DMC) pyrolysis and combustion. *Combustion and Flame*, **2016**, 164, 224-238	5.3	54
44	Fuel-specific influences on the composition of reaction intermediates in premixed flames of three C5H10O2 ester isomers. *Physical Chemistry Chemical Physics*, **2011**, 13, 6901-13	3.6	54
43	Oxidation of small alkyl esters in flames. *Combustion and Flame*, **2014**, 161, 810-817	5.3	51
42	Numerical modeling of ethylene oxidation in laminar flames. *Combustion and Flame*, **1983**, 52, 299-313	5.3	51
41	Inhibition of Laminar Methane-Air and Methanol-Air Flames by Hydrogen Bromide. *Combustion Science and Technology*, **1980**, 23, 191-202	1.5	50
40	Reduced Chemical Kinetic Mechanisms for Hydrocarbon Fuels. *Journal of Propulsion and Power*, **2002**, 18, 192-198	1.8	44
39	Low-temperature speciation and chemical kinetic studies of n-heptane. *Combustion and Flame*, **2013**, 160, 2693-2706	5.3	42
38	Shock tube studies of methyl butanoate pyrolysis with relevance to biodiesel. *Combustion and Flame*, **2012**, 159, 3235-3241	5.3	39
37	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	5.3	38
36	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	5.3	36

35	On the combustion chemistry of n-heptane and n-butanol blends. *Journal of Physical Chemistry A*, **2012**, 116, 12406-21	2.8	36
34	The Sulfur Catalyzed Recombination of Atomic Oxygen in a CO/O2/Ar Flame. *Combustion Science and Technology*, **1983**, 30, 241-271	1.5	34
33	Experimental and modeling study of the oxidation of n- and iso-butanal. *Combustion and Flame*, **2013**, 160, 1609-1626	5.3	33
32	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	5.3	31
31	Multi-fuel surrogate chemical kinetic mechanisms for real world applications. *Physical Chemistry Chemical Physics*, **2018**, 20, 10588-10606	3.6	31
30	Detailed chemical kinetics study of the role of pressure in butane pyrolysis. *Industrial & Engineering Chemistry Research*, **1992**, 31, 37-45	3.9	28
29	Effects of Propane on Ignition of Methane Ethane Air Mixtures. *Combustion Science and Technology*, **1983**, 33, 315-319	1.5	27
28	The Effect of Carbon Carbon Double Bonds on the Combustion Chemistry of Small Fatty Acid Esters. *Zeitschrift Fur Physikalische Chemie*, **2011**, 225, 1293-1314	3.1	25
27	High-temperature ignition of propane with MTBE as an additive: Shock tube experiments and modeling. *International Journal of Chemical Kinetics*, **1994**, 26, 757-770	1.4	25
26	An Experimental and Kinetic Modeling Study of Premixed Laminar Flames of Methyl Pentanoate and Methyl Hexanoate. *Zeitschrift Fur Physikalische Chemie*, **2015**, 229, 759-780	3.1	23
25	Experimental and modeling study of the pyrolysis and oxidation of an iso-paraffinic alcohol-to-jet fuel. *Combustion and Flame*, **2019**, 201, 57-64	5.3	18
24	A generalized ICE method for chemically reactive flows in combustion systems. *Journal of Computational Physics*, **1978**, 29, 67-80	4.1	17
23	Experimental and Modeling Study of Methyl trans-3-Hexenoate Autoignition. *Energy & Fuels*, **2014**, 28, 7227-7234	4.1	15
22	Formulation of an RP-1 pyrolysis surrogate from shock tube measurements of fuel and ethylene time histories. *Fuel*, **2013**, 103, 1051-1059	7.1	15
21	Shock tube and modeling study of 2,7-dimethyloctane pyrolysis and oxidation. *Combustion and Flame*, **2015**, 162, 2296-2306	5.3	14
20	Use of chemical kinetics to predict critical parameters of gaseous detonations. *Combustion, Explosion and Shock Waves*, **1983**, 19, 753-766	1	14
19	Two-stage ignition behavior and octane sensitivity of toluene reference fuels as gasoline surrogate. *Combustion and Flame*, **2019**, 210, 100-113	5.3	13
18	A detailed chemical kinetic model for gas phase combustion of TNT. *Proceedings of the Combustion Institute*, **2007**, 31, 2343-2351	5.9	13

17	Chemical kinetic modeling of higher hydrocarbon fuels. *AIAA Journal*, **1986**, 24, 2002-2009	2.1	12
16	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	5.3	12
15	Propagation of a flame through a stratified charge combustion chamber. *Acta Astronautica*, **1978**, 5, 1185-1198	2.3	11
14	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	4.3	10
13	Mechanism Reduction and Generation Using Analysis of Major Fuel Consumption Pathways forn-Heptane in Premixed and Diffusion Flames. *Energy & Fuels*, **2007**, 21, 1967-1976	4.1	9
12	Detailed kinetics of fossil and renewable fuel combustion. *Computer Aided Chemical Engineering*, **2019**, 363-443	0.6	7
11	Evaluation of Light-Off Limits for a Novel Oxy-Combustion Process for Enhanced Oil Recovery (EOR). *Energy & Fuels*, **2013**, 27, 3438-3445	4.1	6
10	Autoignition of CRC diesel surrogates at low temperature combustion conditions: Rapid compression machine experiments and modeling. *Combustion and Flame*, **2020**, 219, 178-197	5.3	5
9	Chemical kinetic basis of synergistic blending for research octane number. *Fuel*, **2022**, 307, 121865	7.1	4
8	Numerical Modeling Capabilities for the Simulation of Toxic By-Products Formation in Combustion Processes. *Combustion Science and Technology*, **1994**, 101, 383-396	1.5	3
7	A combined experimental and modeling study of combustion properties of an isoparaffinic alcohol-to-jet fuel. *Combustion and Flame*, **2022**, 240, 111994	5.3	3
6	Shock-tube spectroscopic water measurements and detailed kinetics modeling of 1-pentene and 3-methyl-1-butene. *International Journal of Chemical Kinetics*, **2021**, 53, 67-83	1.4	3
5	Key Chemical Kinetic Steps in Reaction Mechanisms for Fuels from Biomass: A Perspective. *Energy & Fuels*,	4.1	3
4	An analysis of gas phase ethanol-water chemistry for diamond CVD. *Diamond and Related Materials*, **1995**, 4, 1277-1288	3.5	2
3	Shock-tube spectroscopic CO and H2O measurements during 2-methyl-1-butene combustion and chemical kinetics modeling. *Combustion and Flame*, **2022**, 238, 111919	5.3	2
2	Oxidation of an iso-paraffinic alcohol-to-jet fuel and n-heptane mixture: An experimental and modeling study. *International Journal of Chemical Kinetics*, **2021**, 53, 1014-1035	1.4	2
1	A Shock-Tube and Chemical Kinetics Model Investigation Encompassing all Five Pentene Isomers. *Fuel*, **2022**, 323, 124223	7.1	1