Zheng Chen

List of Publications by Year
in descending order

131 papers	6,018 citations	76322 40 h-index	76898 74 g-index
132 all docs	132 docs citations	132 times ranked	1828 citing authors

#	Article	IF	Citations
1	A path flux analysis method for the reduction of detailed chemical kinetic mechanisms. Combustion and Flame, 2010, 157, 1298-1307.	5.2	366
2	Effects of Lewis number and ignition energy on the determination of laminar flame speed using propagating spherical flames. Proceedings of the Combustion Institute, 2009, 32, 1253-1260.	3.9	344
3	Effect of cylindrical confinement on the determination of laminar flame speeds using outwardly propagating flames. Combustion and Flame, 2009, 156, 771-779.	5.2	339
4	On the extraction of laminar flame speed and Markstein length from outwardly propagating spherical flames. Combustion and Flame, 2011, 158, 291-300.	5.2	295
5	On the accuracy of laminar flame speeds measured from outwardly propagating spherical flames: Methane/air at normal temperature and pressure. Combustion and Flame, 2015, 162, 2442-2453.	5.2	206
6	Theoretical analysis of the evolution from ignition kernel to flame ball and planar flame. Combustion Theory and Modelling, 2007, 11, 427-453.	1.9	189
7	On the critical flame radius and minimum ignition energy for spherical flame initiation. Proceedings of the Combustion Institute, 2011, 33, 1219-1226.	3.9	173
8	Radiation-induced uncertainty in laminar flame speed measured from propagating spherical flames. Combustion and Flame, 2014, 161, 2815-2824.	5.2	166
9	Uncertainty in stretch extrapolation of laminar flame speed from expanding spherical flames. Proceedings of the Combustion Institute, 2015, 35, 663-670.	3.9	164
10	Effects of radiation and compression on propagating spherical flames of methane/air mixtures near the lean flammability limit. Combustion and Flame, 2010, 157, 2267-2276.	5.2	161
11	Studies of radiation absorption on flame speed and flammability limit of CO2 diluted methane flames at elevated pressures. Proceedings of the Combustion Institute, 2007, 31, 2693-2700.	3.9	156
12	Effects of compression and stretch on the determination of laminar flame speeds using propagating spherical flames. Combustion Theory and Modelling, 2009, 13, 343-364.	1.9	148
13	High temperature ignition and combustion enhancement by dimethyl ether addition to methaneâ€“air mixtures. Proceedings of the Combustion Institute, 2007, 31, 1215-1222.	3.9	145
14	Numerical experiments on reaction front propagation in n-heptane/air mixture with temperature gradient. Proceedings of the Combustion Institute, 2015, 35, 3045-3052.	3.9	135
15	A dynamic multi-timescale method for combustion modeling with detailed and reduced chemical kinetic mechanisms. Combustion and Flame, 2010, 157, 1111-1121.	5.2	128
16	Measurements of the critical initiation radius and unsteady propagation of n-decane/air premixed flames. Proceedings of the Combustion Institute, 2013, 34, 929-936.	3.9	109
17	End-gas autoignition and detonation development in a closed chamber. Combustion and Flame, 2015, 162, 4102-4111.	5.2	106
18	The role of low temperature chemistry in combustion mode development under elevated pressures. Combustion and Flame, 2016, 174, 179-193.	5.2	106

#	Article	IF	Citations
19	Multi-timescale modeling of ignition and flame regimes of n-heptane-air mixtures near spark assisted homogeneous charge compression ignition conditions. Proceedings of the Combustion Institute, 2011, 33, 1245-1251.	3.9	93
20	Supersonic reaction front propagation initiated by a hot spot in n -heptane/air mixture with multistage ignition. Combustion and Flame, 2015, 162, 4183-4193.	5.2	88
21	Effects of diluents on the ignition of premixed H2/air mixtures. Combustion and Flame, 2012, 159, 151-160.	5.2	82
22	Laminar flame speeds of H 2 /CO with CO 2 dilution at normal and elevated pressures and temperatures. Fuel, 2015, 148, 32-38.	6.4	75
23	The constant-volume propagating spherical flame method for laminar flame speed measurement. Science Bulletin, 2016, 61, 1296-1310.	9.0	75
24	Effects of hydrogen addition on the propagation of spherical methane/air flames: A computational study. International Journal of Hydrogen Energy, 2009, 34, 6558-6567.	7.1	71
25	Effects of initial temperature on autoignition and detonation development in dimethyl ether/air mixtures with temperature gradient. Proceedings of the Combustion Institute, 2017, 36, 3643-3650.	3.9	69
26	Interactions of flame propagation, auto-ignition and pressure wave during knocking combustion. Combustion and Flame, 2016, 164, 319-328.	5.2	62
27	The explosion characteristics of methane, hydrogen and their mixtures: A computational study. Journal of Loss Prevention in the Process Industries, 2016, 40, 131-138.	3.3	61
28	Regularized random-sampling high dimensional model representation (RS-HDMR). Journal of Mathematical Chemistry, 2008, 43, 1207-1232.	1.5	59
29	A model for the laminar flame speed of binary fuel blends and its application to methane/hydrogen mixtures. International Journal of Hydrogen Energy, 2012, 37, 10390-10396.	7.1	59
30	Determination of burning velocities from spherically expanding H 2 /air flames. Proceedings of the Combustion Institute, 2015, 35, 711-719.	3.9	57
31	Effects of flame propagation speed and chamber size on end-gas autoignition. Proceedings of the Combustion Institute, 2017, 36, 3533-3541.	3.9	56
32	Ignition of methane with hydrogen and dimethyl ether addition. Fuel, 2014, 118, 1-8.	6.4	51
33	Laminar flame propagation and ignition properties of premixed iso-octane/air with hydrogen addition. Fuel, 2015, 158, 443-450.	6.4	49
34	Effects of radiation absorption on spherical flame propagation and radiation-induced uncertainty in laminar flame speed measurement. Proceedings of the Combustion Institute, 2017, 36, 1129-1136.	3.9	47
35	Effects of Soret diffusion on the laminar flame speed and Markstein length of syngas/air mixtures. Proceedings of the Combustion Institute, 2013, 34, 695-702.	3.9	46
36	Laminar flame speeds of methane/air mixtures at engine conditions: Performance of different kinetic models and power-law correlations. Combustion and Flame, 2020, 218, 101-108.	5.2	46

#	Article	IF	Citations
37	Effects of natural gas composition and compression ratio on the thermodynamic and combustion characteristics of a heavy-duty lean-burn SI engine fueled with liquefied natural gas. Fuel, 2019, 254, 115733.	6.4	45
38	Different modes of reaction front propagation in n-heptane/air mixture with concentration non-uniformity. Proceedings of the Combustion Institute, 2017, 36, 3633-3641.	3.9	44
39	A dynamic adaptive chemistry scheme with error control for combustion modeling with a large detailed mechanism. Combustion and Flame, 2013, 160, 225-231.	5.2	43
40	LES/PDF modeling of autoignition in a lifted turbulent flame: Analysis of flame sensitivity to differential diffusion and scalar mixing time-scale. Combustion and Flame, 2016, 171, 69-86.	5.2	43
41	Numerical study on the transient evolution of a premixed cool flame. Combustion and Flame, 2018, 187, 129-136.	5.2	42
42	Flame propagation in a tube with wall quenching of radicals. Combustion and Flame, 2013, 160, 2810-2819.	5.2	41
43	Laminar flame speed and Markstein length of syngas at normal and elevated pressures and temperatures. Fuel, 2014, 137, 339-345.	6.4	41
44	Spherical flame initiation and propagation with thermally sensitive intermediate kinetics. Combustion and Flame, 2011, 158, 1520-1531.	5.2	40
45	Multi-timescale and correlated dynamic adaptive chemistry modeling of ignition and flame propagation using a real jet fuel surrogate model. Combustion and Flame, 2015, 162, 1530-1539.	5.2	37
46	Numerical study of laminar flame speed of fuel-stratified hydrogen/air flames. Combustion and Flame, 2016, 163, 394-405.	5.2	37
47	Multi-channel nanosecond discharge plasma ignition of premixed propane/air under normal and sub-atmospheric pressures. Combustion and Flame, 2017, 182, 102-113.	5.2	36
48	Effects of water vapor dilution on the minimum ignition energy of methane, n -butane and n -decane at normal and reduced pressures. Fuel, 2017, 187, 111-116.	6.4	35
49	Autoignition and detonation development induced by a hot spot in fuel-lean and CO2 diluted n-heptane/air mixtures. Combustion and Flame, 2019, 201, 208-214.	5.2	32
50	Studies on the Outwardly and Inwardly Propagating Spherical Flames with Radiative Loss. Combustion Science and Technology, 2010, 182, 124-142.	2.3	30
51	On laminar premixed flame propagating into autoigniting mixtures under engine-relevant conditions. Proceedings of the Combustion Institute, 2019, 37, 4673-4680.	3.9	30
52	Critical condition for the ignition of reactant mixture by radical deposition. Proceedings of the Combustion Institute, 2013, 34, 3267-3275.	3.9	26
53	Effects of finite-rate droplet evaporation on the ignition and propagation of premixed spherical spray flame. Combustion and Flame, 2015, 162, 2128-2139.	5.2	25
54	Effects of fuel stratification on ignition kernel development and minimum ignition energy of n-decane/air mixtures. Proceedings of the Combustion Institute, 2019, 37, 1623-1630.	3.9	25

#	Article	IF	Citations
55	Two-stage heat release in nitromethane/air flame and its impact on laminar flame speed measurement. Combustion and Flame, 2017, 183, 157-165.	5.2	24
56	Effects of temperature perturbation on direct detonation initiation. Proceedings of the Combustion Institute, 2017, 36, 2743-2751.	3.9	24
57	Ignition of dimethyl ether/air mixtures by hot particles: Impact of low temperature chemical reactions. Proceedings of the Combustion Institute, 2021, 38, 2459-2466.	3.9	24
58	Laminar flame speeds of lean high-hydrogen syngas at normal and elevated pressures. Fuel, 2016, 181, 958-963.	6.4	23
59	Effects of NOx addition on autoignition and detonation development in DME/air under engine-relevant conditions. Proceedings of the Combustion Institute, 2019, 37, 4813-4820.	3.9	23
60	Combined effects of curvature, radiation, and stretch on the extinction of premixed tubular flames. International Journal of Heat and Mass Transfer, 2008, 51, 6118-6125.	4.8	22
61	Correlations for the ignition delay times of hydrogen/air mixtures. Science Bulletin, 2011, 56, 215-221.	1.7	22
62	Effects of radiation on the uncertainty of flame speed determination using spherically propagating flames with CO/CO2/H2O dilutions at elevated pressures. International Journal of Heat and Mass Transfer, 2015, 86, 820-825.	4.8	22
63	Propagation of gaseous detonation across inert layers. Proceedings of the Combustion Institute, 2021, 38, 3555-3563.	3.9	22
64	Development of an optically accessible apparatus to characterize the evolution of spherically expanding flames under constant volume conditions. Combustion and Flame, 2020, 212, 165-176.	5.2	21
65	Numerical studies on autoignition and detonation development from a hot spot in hydrogen/air mixtures. Combustion Theory and Modelling, 2020, 24, 245-261.	1.9	20
66	Effects of heat conduction and radical quenching on premixed stagnation flame stabilised by a wall. Combustion Theory and Modelling, 2013, 17, 682-706.	1.9	19
67	Linearized correction to a flamelet-based model for hydrogen-fueled supersonic combustion. International Journal of Hydrogen Energy, 2017, 42, 11937-11944.	7.1	19
68	Effects of Soret diffusion on premixed flame propagation under engine-relevant conditions. Combustion and Flame, 2018, 194, 175-179.	5.2	19
69	Effects of combustion models on soot formation and evolution in turbulent nonpremixed flames. Proceedings of the Combustion Institute, 2019, 37, 985-992.	3.9	19
70	Autoignition and detonation development from a hot spot inside a closed chamber: Effects of end wall reflection. Proceedings of the Combustion Institute, 2021, 38, 5905-5913.	3.9	18
71	Effects of hydrogen addition on non-premixed ignition of iso-octane by hot air in a diffusion layer. Combustion and Flame, 2019, 199, 292-300.	5.2	17
72	In-situ flame particle tracking based on barycentric coordinates for studying local flame dynamics in pulsating Bunsen flames. Proceedings of the Combustion Institute, 2021, 38, 2057-2066.	3.9	16

#	Article	IF	Citations
73	Effects of disturbance on detonation initiation in <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi mathvariant="normal">H</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:mo>/</mml:mo><mml:msub><mml:mi mathvariant="normal">O</mml:mi><mml:mn>2</mml:mn></mml:msub><mml:mo>/</mml:mo><mml:msub><mml:mi mathvariant="normal">N</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:mrow></mml:math> mixture. Physical Review Fluids, 2018, 3, .	2.5	16
74	Asymptotic analysis of outwardly propagating spherical flames. Acta Mechanica Sinica/Lixue Xuebao, 2012, 28, 359-366.	3.4	15
75	Outwardly Propagating Spherical Flames with Thermally Sensitive Intermediate Kinetics and Radiative Loss. Combustion Science and Technology, 2013, 185, 226-248.	2.3	15
76	Effects of Soret diffusion on spherical flame initiation and propagation. International Journal of Heat and Mass Transfer, 2015, 82, 309-315.	4.8	15
77	Effects of radiation on large-scale spherical flame propagation. Combustion and Flame, 2017, 183, 66-74.	5.2	15
78	Effects of finite-rate droplet evaporation on the extinction of spherical burner-stabilized diffusion flames. International Journal of Heat and Mass Transfer, 2016, 99, 691-701.	4.8	13
79	Interaction of pressure wave and propagating flame during knock. International Journal of Hydrogen Energy, 2013, 38, 15510-15519.	7.1	12
80	On the determination of laminar flame speed from low-pressure and super-adiabatic propagating spherical flames. Proceedings of the Combustion Institute, 2019, 37, 1505-1512.	3.9	12
81	A review of laminar flame speeds of hydrogen and syngas measured from propagating spherical flames. Applications in Energy and Combustion Science, 2020, 1-4, 100008.	1.5	12
82	Premixed flames for arbitrary combinations of strain and curvature. Proceedings of the Combustion Institute, 2021, 38, 2031-2039.	3.9	12
83	Detonation development from a hot spot in methane/air mixtures: Effects of kinetic models. International Journal of Engine Research, 2021, 22, 2597-2606.	2.3	12
84	Effects of strain rate and Lewis number on forced ignition of laminar counterflow diffusion flames. Combustion and Flame, 2021, 226, 302-314.	5.2	12
85	Effects of stretch-chemistry interaction on chemical pathways for strained and curved hydrogen/air premixed flames. Combustion and Flame, 2021, 232, 111532.	5.2	12
86	HDMR correlations for the laminar burning velocity of premixed CH4/H2/O2/N2 mixtures. International Journal of Hydrogen Energy, 2012, 37, 691-697.	7.1	11
87	Ignition of hydrogen/air mixtures by a heated kernel: Role of Soret diffusion. Combustion and Flame, 2018, 197, 416-422.	5.2	11
88	Heat Release Rate Markers for Highly Stretched Premixed CH₄/Air and CH₄/H₂/Air Flames. Energy & Fuels, 2021, 35, 13349-13359.	5.1	11
89	Ignition enhancement of ethylene/air by NOx addition. Chinese Journal of Aeronautics, 2013, 26, 876-883.	5.3	10
90	Effect of 2-step energy release on direct detonation initiation by a point energy source in a rich H2â€“NO2/N2O4 mixture. Combustion and Flame, 2020, 222, 317-325.	5.2	10

#	Article	IF	Citations
91	On Explosion Limits of Ammoniaâ€“Oxygen Mixtures with Hydrogen Addition: Sensitivity and Nonmonotonicity. Energy & Fuels, 2021, 35, 14035-14041.	5.1	10
92	Tailored mixture properties for accurate laminar flame speed measurement from spherically expanding flames: Application to H<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.svg"><mml:msub><mml:mrow /><mml:mn>2</mml:mn></mml:msub></mml:math>/O<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si1.svg"><mml:msub><mml:mrow /><mml:mn>2</mml:mn></mml:msub></mml:math>/N<mml:math xmlns:mml="http://www.w3.org/1998/Ma	5.2	10
93	Flamelet modeling of forced ignition and flame propagation in hydrogen-air mixtures. Combustion and Flame, 2022, 243, 112125.	5.2	10
94	Determination of Laminar Burning Speeds and Markstein Lengths of<i>p</i>-Cymene/Air Mixtures Using Three Models. Combustion Science and Technology, 2014, 186, 490-503.	2.3	9
95	Effects of Soret Diffusion on Premixed Counterflow Flames. Combustion Science and Technology, 2015, 187, 1195-1207.	2.3	9
96	Theoretical analysis on the transient ignition of a premixed expanding flame in a quiescent mixture. Journal of Fluid Mechanics, 2021, 924, .	3.4	9
97	Effects of longitudinal disturbances on two-dimensional detonation waves. Physical Review Fluids, 2022, 7, .	2.5	9
98	Propagation of gaseous detonation in spatially inhomogeneous mixtures. Physics of Fluids, 2021, 33, 116105.	4.0	8
99	Numerical investigation on movement of triple points on oblique detonation surfaces. Physics of Fluids, 2022, 34, .	4.0	8
100	Non-uniform ignition behind a reflected shock and its influence on ignition delay measured in a shock tube. Shock Waves, 2019, 29, 957-967.	1.9	7
101	Skeletal and reduced kinetic models for methane oxidation under engine-relevant conditions. Fuel, 2021, 288, 119667.	6.4	7
102	Theoretical analysis on droplet vaporization at elevated temperatures and pressures. International Journal of Heat and Mass Transfer, 2021, 164, 120542.	4.8	7
103	Diffraction of weakly unstable detonation through an obstacle with different sizes and shapes. Physical Review Fluids, 2021, 6, .	2.5	7
104	Effects of stratification on premixed cool flame propagation and modeling. Combustion and Flame, 2021, 229, 111394.	5.2	7
105	Bifurcation and extinction limit of stretched premixed flames with chain-branching intermediate kinetics and radiative loss. Combustion Theory and Modelling, 2018, 22, 531-553.	1.9	6
106	Effects of endothermic chain-branching reaction on spherical flame initiation and propagation. Combustion Theory and Modelling, 2019, 23, 496-514.	1.9	6
107	Thermal-pyrolysis induced over-driven flame and its potential role in the negative-temperature dependence of iso-octane flame speed at elevated temperatures. Combustion and Flame, 2021, 223, 65-76.	5.2	6
108	Effects of fuel decomposition and stratification on the forced ignition of a static flammable mixture. Combustion Theory and Modelling, 2021, 25, 813-831.	1.9	5

#	Article	IF	Citations
109	Numerical modeling of ignition enhancement using repetitive nanosecond discharge in a hydrogen/air mixture I: calculations assuming homogeneous ignition. Journal Physics D: Applied Physics, 2021, 54, 065501.	2.8	5
110	Numerical Study on the Ignition Process of <i>n</i>-Decane/Toluene Binary Fuel Blends. Energy & Fuels, 2012, 26, 6729-6736.	5.1	4
111	Effects of pressure rise rate on laminar flame speed under normal and engine-relevant conditions. Combustion Theory and Modelling, 2020, 24, 953-964.	1.9	4
112	On the prediction of hot spot induced ignition by the Livengood-Wu integral. Proceedings of the Combustion Institute, 2021, 38, 4709-4716.	3.9	4
113	A theoretical analysis on enthalpy of vaporization: Temperature-dependence and singularity at the critical state. Fluid Phase Equilibria, 2020, 516, 112611.	2.5	3
114	Initiation and propagation of spherical premixed flames with inert solid particles. Combustion Theory and Modelling, 2020, 24, 606-631.	1.9	3
115	Numerical methods for complicated chemical mechanism involved in combustion simulation. Scientia Sinica: Physica, Mechanica Et Astronomica, 2017, 47, 070006.	0.4	3
116	Theoretical analysis on the ignition of a combustible mixture by a hot particle. Journal of Fluid Mechanics, 2022, 936, .	3.4	3
117	Effects of radiative loss on premixed planar flame propagation. Proceedings of the Combustion Institute, 2021, 38, 4683-4690.	3.9	2
118	Determination of spatially averaged consumption speed from spherical expanding flame: A new experimental methodology. Combustion and Flame, 2022, 235, 111720.	5.2	2
119	Numerical modeling of ignition enhancement by repetitive nanosecond discharge in a hydrogen/air mixture II: forced ignition. Journal Physics D: Applied Physics, 2021, 54, 065502.	2.8	2
120	Numerical analysis of very rich propagating spherical flames: Soot formation and its impact on the determination of laminar flame speed. Combustion and Flame, 2022, 237, 111860.	5.2	2
121	Numerical studies on weak and strong ignition induced by reflected shock and boundary layer interaction. Acta Mechanica Sinica/Lixue Xuebao, 2022, 38, .	3.4	2
122	Combined Effects of Stretch, Curvature, and Radiation on the Extinction of Tubular Premixed Flames. , 2007, , .		1
123	Studies on the Critical Flame Radius and Minimum Ignition Energy for Spherical Flame Initiation. , 2009, , .		1
124	An Efficient Multi Time Scale Method for Solving Stiff ODEs with Detailed Kinetic Mechanisms and Multi Scale Physical Chemical Processes. , 2009, , .		1
125	Effects of Particle Size on the Ignition of Static CH4/Air and H2/Air Mixtures by Hot Particles. Combustion Science and Technology, 2020, , 1-13.	2.3	1
126	Effects of Soret diffusion on laminar flames. Zhongguo Kexue Jishu Kexue/Scientia Sinica Technologica, 2015, 45, 1117-1129.	0.5	1

#	Article	IF	Citations
127	On the Accurate Determination of Flame Speeds at Normal and Elevated Pressures by Using a Spherical Bomb: The Effects of Compression and Stretch. , 2007, , .		0
128	Effects of Lewis Number on Spherical Flame Initiation. , 2008, , .		0
129	Effects of reaction reversibility on ignition and flame propagation. Journal of Mathematical Chemistry, 2015, 53, 386-401.	1.5	0
130	Application of the Projective Method in the Numerical Simulation of Combustion. Lecture Notes in Electrical Engineering, 2019, , 1857-1864.	0.4	0
131	Effect of wall heat transfer on the dynamics of premixed spherical expanding flames. Thermal Science and Engineering Progress, 2022, 29, 101227.	2.7	0