

# Peng Zhang

## List of Publications by Year in descending order

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89  
papers

1,918  
citations

236925

25  
h-index

302126

39  
g-index

90  
all docs

90  
docs citations

90  
times ranked

1299  
citing authors

#	ARTICLE	IF	CITATIONS
1	Dynamics of droplet impact on solid surface with different roughness. <i>International Journal of Multiphase Flow</i> , 2017, 96, 56-69.	3.4	164
2	Effects of buffer gas composition on low temperature ignition of iso-octane and n-heptane. <i>Combustion and Flame</i> , 2014, 161, 2531-2538.	5.2	112
3	Bouncing, coalescence, and separation in head-on collision of unequal-size droplets. <i>Physics of Fluids</i> , 2012, 24, .	4.0	108
4	An analysis of head-on droplet collision with large deformation in gaseous medium. <i>Physics of Fluids</i> , 2011, 23, .	4.0	82
5	Ab Initio Kinetics for the Decomposition of Hydroxybutyl and Butoxy Radicals of <i>n</i> -Butanol. <i>Journal of Physical Chemistry A</i> , 2013, 117, 1890-1906.	2.5	52
6	Universality in the viscous-to-inertial coalescence of liquid droplets. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019, 116, 23467-23472.	7.1	51
7	Experimental study of 2,5-dimethylfuran and 2-methylfuran in a rapid compression machine: Comparison of the ignition delay times and reactivity at low to intermediate temperature. <i>Combustion and Flame</i> , 2016, 168, 216-227.	5.2	50
8	Numerical Investigation on Flame Stabilization in DLR Hydrogen Supersonic Combustor with Strut Injection. <i>Combustion Science and Technology</i> , 2017, 189, 2154-2179.	2.3	50
9	Assessment of Vibrational Non-Equilibrium Effect on Detonation Cell Size. <i>Combustion Science and Technology</i> , 2017, 189, 841-853.	2.3	48
10	Characterization of flame stabilization modes in an ethylene-fueled supersonic combustor using time-resolved CH* chemiluminescence. <i>Proceedings of the Combustion Institute</i> , 2017, 36, 2919-2925.	3.9	42
11	A theoretical kinetics study of the reactions of methylbutanoate with hydrogen and hydroxyl radicals. <i>Proceedings of the Combustion Institute</i> , 2015, 35, 481-489.	3.9	40
12	Effect of cowl shock on restart characteristics of simple ramp type hypersonic inlets with thin boundary layers. <i>Aerospace Science and Technology</i> , 2018, 74, 72-80.	4.8	40
13	On the role of liquid viscosity in affecting droplet spreading on a smooth solid surface. <i>International Journal of Multiphase Flow</i> , 2019, 117, 53-63.	3.4	40
14	Dynamics of internal jets in the merging of two droplets of unequal sizes. <i>Journal of Fluid Mechanics</i> , 2016, 795, 671-689.	3.4	38
15	Computational realization of multiple flame stabilization modes in DLR strut-injection hydrogen supersonic combustor. <i>Proceedings of the Combustion Institute</i> , 2019, 37, 3685-3692.	3.9	38
16	Collision dynamics and mixing of unequal-size droplets. <i>International Journal of Heat and Mass Transfer</i> , 2013, 57, 421-428.	4.8	35
17	On the role of droplet bouncing in modeling impinging sprays under elevated pressures. <i>International Journal of Heat and Mass Transfer</i> , 2016, 102, 657-668.	4.8	35
18	A vortex-dynamical scaling theory for flickering buoyant diffusion flames. <i>Journal of Fluid Mechanics</i> , 2018, 855, 1156-1169.	3.4	35

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19	Time-resolved droplet size and velocity distributions in a dilute region of a high-pressure pulsed diesel spray. <i>International Journal of Heat and Mass Transfer</i> , 2019, 133, 745-755.	4.8	34
20	Intermediate species measurement during iso-butanol auto-ignition. <i>Combustion and Flame</i> , 2015, 162, 3541-3553.	5.2	32
21	Kinetic energy recovery and interface hysteresis of bouncing droplets after inelastic head-on collision. <i>Physics of Fluids</i> , 2017, 29, .	4.0	29
22	Experimental and kinetic modeling investigation on methyl decanoate pyrolysis at low and atmospheric pressures. <i>Fuel</i> , 2018, 232, 333-340.	6.4	27
23	Towards high-level theoretical studies of large biodiesel molecules: an ONIOM [QCISD(T)/CBS:DFT] study of hydrogen abstraction reactions of $C_nH_{2n+1}COOC_mH_{2m+1} + H$ . <i>Physical Chemistry Chemical Physics</i> , 2015, 17, 200-208.	2.8	26
24	Hypergolic ignition by head-on collision of N,N,N',N'-tetramethylethylenediamine and white fuming nitric acid droplets. <i>Combustion and Flame</i> , 2016, 173, 276-287.	5.2	26
25	Collision Dynamics and Internal Mixing of Droplets of Non-Newtonian Liquids. <i>Physical Review Applied</i> , 2015, 4, .	3.8	25
26	Promoting "adiabatic core" approximation in a rapid compression machine by an optimized creviced piston design. <i>Fuel</i> , 2019, 251, 328-340.	6.4	25
27	Non-monotonic viscous dissipation of bouncing droplets undergoing off-center collision. <i>Physics of Fluids</i> , 2019, 31, .	4.0	24
28	Blowout Limits of Cavity-Stabilized Flame of Supercritical Kerosene in Supersonic Combustors. <i>Journal of Propulsion and Power</i> , 2014, 30, 1161-1166.	2.2	22
29	Combustion characteristics of a slotted swirl combustor: An experimental test and numerical validation. <i>International Communications in Heat and Mass Transfer</i> , 2015, 66, 140-147.	5.6	21
30	Cross-impingement and combustion of sprays in high-pressure chamber and opposed-piston compression ignition engine. <i>Applied Thermal Engineering</i> , 2018, 144, 137-146.	6.0	21
31	A theoretical kinetics study on low-temperature reactions of methyl acetate radicals with molecular oxygen. <i>Combustion and Flame</i> , 2018, 196, 45-53.	5.2	20
32	Vortex-dynamical interpretation of anti-phase and in-phase flickering of dual buoyant diffusion flames. <i>Physical Review Fluids</i> , 2019, 4, .	2.5	20
33	Experimental study and RANS calculation on velocity and temperature of a kerosene-fueled swirl laboratory combustor with and without centerbody air injection. <i>International Journal of Heat and Mass Transfer</i> , 2015, 89, 964-976.	4.8	19
34	Ignition delay times of low alkylfurans at high pressures using a rapid compression machine. <i>Proceedings of the Combustion Institute</i> , 2017, 36, 323-332.	3.9	19
35	Ab initio kinetics for the decomposition of monomethylhydrazine (CH <sub>3</sub> NHNH <sub>2</sub> ). <i>Proceedings of the Combustion Institute</i> , 2011, 33, 425-432.	3.9	18
36	Toward High-Level Theoretical Studies of Large Biodiesel Molecules: An ONIOM [QCISD(T)/CBS:DFT] Study of the Reactions between Unsaturated Methyl Esters (C <sub>n</sub> H <sub>2n</sub> COOCH <sub>3</sub> ) and Hydrogen Radical. <i>Journal of Physical Chemistry A</i> , 2018, 122, 4882-4893.	2.5	18

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37	A theoretical investigation on Bell-Evans-Polanyi correlations for hydrogen abstraction reactions of large biodiesel molecules by H and OH radicals. <i>Combustion and Flame</i> , 2020, 214, 394-406.	5.2	18
38	Vortex-ring-induced internal mixing upon the coalescence of initially stationary droplets. <i>Physical Review Fluids</i> , 2017, 2, .	2.5	18
39	Marangoni-flow-induced partial coalescence of a droplet on a liquid/air interface. <i>Physical Review Fluids</i> , 2018, 3, .	2.5	18
40	Collision-induced jet-like mixing for droplets of unequal-sizes. <i>International Journal of Heat and Mass Transfer</i> , 2018, 120, 218-227.	4.8	16
41	Linear analysis on the interfacial instability of a spherical liquid droplet subject to a radial vibration. <i>Physics of Fluids</i> , 2018, 30, .	4.0	16
42	Combustion of Vaporized Kerosene in Supersonic Model Combustors with Dislocated Dual Cavities. <i>Journal of Propulsion and Power</i> , 2014, 30, 1152-1160.	2.2	15
43	Non-Newtonian flow effects on the coalescence and mixing of initially stationary droplets of shear-thinning fluids. <i>Physical Review E</i> , 2015, 91, 023009.	2.1	15
44	Numerical Interpretation to the Roles of Liquid Viscosity in Droplet Spreading at Small Weber Numbers. <i>Langmuir</i> , 2019, 35, 16164-16171.	3.5	14
45	Theoretical calculation of low-temperature oxidation of heptyl radicals and O <sub>2</sub> . <i>Combustion and Flame</i> , 2020, 217, 274-284.	5.2	14
46	On jet-wake flame stabilization in scramjet: A LES/RANS study from chemical kinetic and fluid-dynamical perspectives. <i>Aerospace Science and Technology</i> , 2022, 120, 107255.	4.8	14
47	Gas-Phase Kinetics Study of Reaction of OH Radical with CH <sub>3</sub> NHNH <sub>2</sub> by Second-Order Multireference Perturbation Theory. <i>Journal of Physical Chemistry A</i> , 2012, 116, 5045-5056.	2.5	13
48	Towards high-level theoretical studies of large biodiesel molecules: an ONIOM/RRKM/Master-equation approach to the isomerization and dissociation kinetics of methyl decanoate radicals. <i>Physical Chemistry Chemical Physics</i> , 2019, 21, 5232-5242.	2.8	13
49	Numerical investigation on flow nonuniformity-induced hysteresis in scramjet isolator. <i>Chinese Journal of Aeronautics</i> , 2020, 33, 3176-3188.	5.3	13
50	Spray Impingement and Combustion in a Model Opposed-Piston Compression Ignition Engine. <i>Combustion Science and Technology</i> , 2017, 189, 1943-1965.	2.3	12
51	Vortex-dynamical implications of nonmonotonic viscous dissipation of off-center droplet bouncing. <i>Physics of Fluids</i> , 2020, 32, .	4.0	12
52	Catalytic combustion of methyl butanoate over HZSM-5 zeolites. <i>Chemical Communications</i> , 2021, 57, 2233-2244.	4.1	11
53	Marangoni effect on the impact of droplets onto a liquid-gas interface. <i>Physical Review Fluids</i> , 2020, 5, .	2.5	11
54	A fitting formula for the falloff curves of unimolecular reactions. <i>International Journal of Chemical Kinetics</i> , 2009, 41, 727-734.	1.6	10

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55	Mass interminglement and hypergolic ignition of TMEDA and WFNA droplets by off-center collision. <i>Combustion and Flame</i> , 2018, 197, 276-289.	5.2	10
56	Spreading and bouncing of liquid alkane droplets upon impacting on a heated surface. <i>International Journal of Heat and Mass Transfer</i> , 2020, 159, 120076.	4.8	10
57	A fitting formula for the falloff curves of unimolecular reactions, II: Tunneling effects. <i>International Journal of Chemical Kinetics</i> , 2011, 43, 31-42.	1.6	9
58	MODELING KINETIC ENERGY DISSIPATION OF BOUNCING DROPLETS FOR LAGRANGIAN SIMULATION OF IMPINGING SPRAYS UNDER HIGH AMBIENT PRESSURES. <i>Atomization and Sprays</i> , 2018, 28, 673-694.	0.8	9
59	Cascaded group-additivity ONIOM: A new method to approach CCSD(T)/CBS energies of large aliphatic hydrocarbons. <i>Combustion and Flame</i> , 2019, 201, 31-43.	5.2	9
60	Experimental Study on Droplet Splash and Receding Breakup on a Smooth Surface at Atmospheric Pressure. <i>Langmuir</i> , 2021, 37, 10838-10848.	3.5	9
61	Density functional theory study of the reactions of 2-azido- N , N -dimethylethanamine with nitric acid and nitrogen dioxide. <i>Combustion and Flame</i> , 2015, 162, 237-248.	5.2	8
62	On the flame height of circulation-controlled firewhirls with variable density. <i>Proceedings of the Combustion Institute</i> , 2017, 36, 3097-3104.	3.9	8
63	Near-field flow stability of buoyant methane/air inverse diffusion flames. <i>Combustion and Flame</i> , 2018, 191, 66-75.	5.2	8
64	Hypergolic ignition modulated by head-on collision, intermixing and convective cooling of binary droplets with varying sizes. <i>International Journal of Heat and Mass Transfer</i> , 2019, 139, 475-481.	4.8	8
65	Influence of Torsional Anharmonicity on the Reactions of Methyl Butanoate with Hydroperoxyl Radical. <i>Journal of Physical Chemistry A</i> , 2020, 124, 8643-8652.	2.5	8
66	Theoretical Study on Criegee Intermediate's Role in Ozonolysis of Acrylic Acid. <i>Journal of Physical Chemistry A</i> , 2019, 123, 1929-1936.	2.5	7
67	Theoretical chemical kinetics for catalytic pyrolysis of methyl acetate over H-ZSM-5 zeolites. <i>Fuel</i> , 2020, 277, 118101.	6.4	7
68	Marangoni Effect in Bipropellant Droplet Mixing during Hypergolic Ignition. <i>Physical Review Applied</i> , 2021, 15, .	3.8	7
69	Nonaxisymmetric flow characteristics in head-on collision of spinning droplets. <i>Physical Review Fluids</i> , 2020, 5, .	2.5	7
70	Ab Initio Kinetics for Thermal Decomposition of CH <sub>3</sub> N <sup>+</sup> CH <sub>2</sub> NH <sub>2</sub> , <i>cis</i> -CH <sub>3</sub> NHN <sup>+</sup> CH <sub>2</sub> H, <i>trans</i> -CH <sub>3</sub> NHN <sup>+</sup> CH <sub>2</sub> H, and C <sup>+</sup> CH <sub>2</sub> H <sub>2</sub> NNH <sub>2</sub> Radicals. <i>Journal of Physical Chemistry A</i> , 2012, 116, 8419-8430.	2.5	6
71	Theoretical analysis of Rayleigh-Taylor instability on a spherical droplet in a gas stream. <i>Applied Mathematical Modelling</i> , 2019, 67, 634-644.	4.2	6
72	Role of the Knudsen layer in determining surface reaction rates based on sticking coefficients. <i>Journal of Fluid Mechanics</i> , 2009, 634, 113.	3.4	5

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73	On flame height of circulation-controlled firewhirls with variable physical properties and in power-law vortices: A mass-diffusivity-ratio model correction. <i>Combustion and Flame</i> , 2017, 182, 36-47.	5.2	5
74	The auto-ignition behaviors and risk assessments of double-base propellant containing different 1,1-diamino-2,2-dinitroethene particle sizes under rapid heating. <i>Combustion and Flame</i> , 2021, 234, 111627.	5.2	5
75	Subpatterns of Thin-Sheet Splash on a Smooth Surface. <i>Langmuir</i> , 2020, 36, 4917-4922.	3.5	4
76	Hysteresis of Shock Train Movement in the Isolator with a Ramp. <i>AIAA Journal</i> , 2021, 59, 3873-3882.	2.6	4
77	A COMPUTATIONAL MODEL FOR SPINNING EFFECTS ON POST-COLLISION VELOCITIES OF BOUNCING DROPLETS. <i>Atomization and Sprays</i> , 2021, 31, 43-61.	0.8	4
78	Spin-affected reflexive and stretching separation of off-center droplet collision. <i>Physical Review Fluids</i> , 2022, 7, .	2.5	4
79	Secondary channels in the thermal decomposition of monomethylhydrazine (CH <sub>3</sub> NHNH <sub>2</sub> ). <i>RSC Advances</i> , 2014, 4, 62951-62964.	3.6	3
80	Circulation-controlled firewhirls with differential diffusion. <i>Combustion and Flame</i> , 2018, 189, 288-299.	5.2	3
81	Approximate reconstruction of torsional potential energy surface based on voronoi tessellation. <i>Proceedings of the Combustion Institute</i> , 2021, 38, 757-766.	3.9	3
82	Stability of Buoyant Inverse Diffusion Methane Flames with Confinement Effects. <i>Combustion Science and Technology</i> , 2020, 192, 1650-1667.	2.3	2
83	Theoretical studies on the initial reaction kinetics and mechanisms of p-, m- and o-nitrotoluene. <i>Physical Chemistry Chemical Physics</i> , 2021, 23, 4658-4668.	2.8	1
84	CVD in Weakly Rarefied Rotating Disk Flows. <i>Chemical Vapor Deposition</i> , 2009, 15, 274-280.	1.3	0
85	Rarefied flow effects on stabilization and extinction of rotating-disk flame at low pressures. <i>International Journal of Heat and Mass Transfer</i> , 2010, 53, 475-481.	4.8	0
86	Response of spherical diffusion flames subjected to rotation: Microgravity experimentation and computational simulation. <i>Combustion and Flame</i> , 2012, 159, 665-672.	5.2	0
87	Collision Dynamics and Internal Mixing of Equal-Size Droplets of Non-Newtonian Liquids. , 2016, , .		0
88	Dynamics of binary droplet collision in gaseous environment. <i>Scientia Sinica: Physica, Mechanica Et Astronomica</i> , 2017, 47, 070013.	0.4	0
89	Subpatterns of Thin-Sheet Splash of a Droplet Impact on a Heated Surface. <i>Langmuir</i> , 2022, 38, 810-817.	3.5	0