Tianfeng Lu

List of Publications by Year
in descending order

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124 papers	8,607 citations	53794 45 h-index	46799 89 g-index
124 all docs	124 docs citations	124 times ranked	2935 citing authors

#	Article	IF	Citations
1	A directed relation graph method for mechanism reduction. Proceedings of the Combustion Institute, 2005, 30, 1333-1341.	3.9	793
2	Toward accommodating realistic fuel chemistry in large-scale computations. Progress in Energy and Combustion Science, 2009, 35, 192-215.	31.2	612
3	Comprehensive chemical kinetic modeling of the oxidation of 2-methylalkanes from C7 to C20. Combustion and Flame, 2011, 158, 2338-2357.	5.2	466
4	Structure of a spatially developing turbulent lean methaneâ€“air Bunsen flame. Proceedings of the Combustion Institute, 2007, 31, 1291-1298.	3.9	329
5	Linear time reduction of large kinetic mechanisms with directed relation graph: n-Heptane and iso-octane. Combustion and Flame, 2006, 144, 24-36.	5.2	311
6	Three-dimensional direct numerical simulation of a turbulent lifted hydrogen jet flame in heated coflow: a chemical explosive mode analysis. Journal of Fluid Mechanics, 2010, 652, 45-64.	3.4	271
7	A criterion based on computational singular perturbation for the identification of quasi steady state species: A reduced mechanism for methane oxidation with NO chemistry. Combustion and Flame, 2008, 154, 761-774.	5.2	270
8	A physics-based approach to modeling real-fuel combustion chemistryÂâ€“ÂII. Reaction kinetic models of jet and rocket fuels. Combustion and Flame, 2018, 193, 520-537.	5.2	247
9	Chemical explosive mode analysis for a turbulent lifted ethylene jet flame in highly-heated coflow. Combustion and Flame, 2012, 159, 265-274.	5.2	236
10	Direct numerical simulations of ignition of a lean n-heptane/air mixture with temperature inhomogeneities at constant volume: Parametric study. Combustion and Flame, 2011, 158, 1727-1741.	5.2	222
11	Strategies for mechanism reduction for large hydrocarbons: n-heptane. Combustion and Flame, 2008, 154, 153-163.	5.2	208
12	Complex CSP for chemistry reduction and analysis. Combustion and Flame, 2001, 126, 1445-1455.	5.2	201
13	On the applicability of directed relation graphs to the reduction of reaction mechanisms. Combustion and Flame, 2006, 146, 472-483.	5.2	187
14	A compact skeletal mechanism for n-dodecane with optimized semi-global low-temperature chemistry for diesel engine simulations. Fuel, 2017, 191, 339-349.	6.4	186
15	A comprehensive iso-octane combustion model with improved thermochemistry and chemical kinetics. Combustion and Flame, 2017, 178, 111-134.	5.2	164
16	Development and validation of an n-dodecane skeletal mechanism forÂspray combustion applications. Combustion Theory and Modelling, 2014, 18, 187-203.	1.9	131
17	Experimental and kinetic modeling study of extinction and ignition of methyl decanoate in laminar non-premixed flows. Proceedings of the Combustion Institute, 2009, 32, 1067-1074.	3.9	128
18	A reduced mechanism for biodiesel surrogates for compression ignition engine applications. Fuel, 2012, 99, 143-153.	6.4	125

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19	The effect of flame structure on soot formation and transport in turbulent nonpremixed flames using direct numerical simulation. Combustion and Flame, 2007, 151, 2-28.	5.2	118
20	Modelling n-dodecane spray and combustion with the transported probability density function method. Combustion and Flame, 2015, 162, 2006-2019.	5.2	118
21	Dynamic stiffness removal for direct numerical simulations. Combustion and Flame, 2009, 156, 1542-1551.	5.2	111
22	A Reduced Mechanism for High-Temperature Oxidation of Biodiesel Surrogates. Energy & Fuels, 2010, 24, 6283-6293.	5.1	110
23	A DNS study of ignition characteristics of a lean iso-octane/air mixture under HCCI and SACI conditions. Proceedings of the Combustion Institute, 2013, 34, 2985-2993.	3.9	109
24	Computational diagnostics for n-heptane flames with chemical explosive mode analysis. Combustion and Flame, 2012, 159, 3119-3127.	5.2	107
25	Development of Comprehensive Detailed and Reduced Reaction Mechanisms for Combustion Modeling. AIAA Journal, 2003, 41, 1629-1646.	2.6	106
26	Direct numerical simulations of the ignition of lean primary reference fuel/air mixtures with temperature inhomogeneities. Combustion and Flame, 2013, 160, 2038-2047.	5.2	103
27	A comprehensive experimental and modeling study of iso-pentanol combustion. Combustion and Flame, 2013, 160, 2712-2728.	5.2	95
28	Direct numerical simulations of HCCI/SACI with ethanol. Combustion and Flame, 2014, 161, 1826-1841.	5.2	95
29	A physics-based approach to modeling real-fuel combustion chemistry â€“ IV. HyChem modeling of combustion kinetics of a bio-derived jet fuel and its blends with a conventional Jet A. Combustion and Flame, 2018, 198, 477-489.	5.2	95
30	On the off-stoichiometric peaking of adiabatic flame temperature. Combustion and Flame, 2006, 145, 808-819.	5.2	93
31	Numerical and experimental investigation of turbulent DME jet flames. Proceedings of the Combustion Institute, 2015, 35, 1157-1166.	3.9	89
32	A Multicomponent Blend as a Diesel Fuel Surrogate for Compression Ignition Engine Applications. Journal of Engineering for Gas Turbines and Power, 2015, 137, .	1.1	85
33	Identification of premixed flame propagation modes using chemical explosive mode analysis. Proceedings of the Combustion Institute, 2019, 37, 2407-2415.	3.9	78
34	Systematic Approach To Obtain Analytic Solutions of Quasi Steady State Species in Reduced Mechanisms. Journal of Physical Chemistry A, 2006, 110, 13202-13208.	2.5	74
35	A Physics-based approach to modeling real-fuel combustion chemistry â€“ÂIII. Reaction kinetic model of JP10. Combustion and Flame, 2018, 198, 466-476.	5.2	67
36	Direct numerical simulations of ignition of a lean n-heptane/air mixture with temperature and composition inhomogeneities relevant to HCCI and SCCI combustion. Combustion and Flame, 2015, 162, 4566-4585.	5.2	63

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37	Direct numerical simulation of a temporally evolving air/n-dodecane jet at low-temperature diesel-relevant conditions. Combustion and Flame, 2018, 195, 183-202.	5.2	62
38	The use of dynamic adaptive chemistry and tabulation in reactive flow simulations. Combustion and Flame, 2014, 161, 127-137.	5.2	60
39	Analysis of segregation and bifurcation in turbulent spray flames: A 3D counterflow configuration. Proceedings of the Combustion Institute, 2015, 35, 1675-1683.	3.9	57
40	Direct numerical simulation of flame stabilization assisted by autoignition in a reheat gas turbine combustor. Proceedings of the Combustion Institute, 2019, 37, 2635-2642.	3.9	57
41	Dynamic adaptive chemistry for turbulent flame simulations. Combustion Theory and Modelling, 2013, 17, 167-183.	1.9	51
42	Simulation of soot formation in turbulent premixed flames. Combustion and Flame, 2007, 150, 108-126.	5.2	49
43	Dynamic adaptive chemistry with operator splitting schemes for reactive flow simulations. Journal of Computational Physics, 2014, 263, 19-36.	3.8	48
44	A computational study of ethyleneâ€“air sooting flames: Effects of large polycyclic aromatic hydrocarbons. Combustion and Flame, 2016, 163, 427-436.	5.2	48
45	Development of a Virtual CFR Engine Model for Knocking Combustion Analysis. SAE International Journal of Engines, 0, 11, 1069-1082.	0.4	48
46	Ignition and extinction in perfectly stirred reactors with detailed chemistry. Combustion and Flame, 2012, 159, 2069-2076.	5.2	47
47	Cyclopentane combustion. Part II. Ignition delay measurements and mechanism validation. Combustion and Flame, 2017, 183, 372-385.	5.2	47
48	Direct numerical simulations of turbulent lean premixed combustion. Journal of Physics: Conference Series, 2006, 46, 38-42.	0.4	44
49	A counterflow diffusion flame study of branched octane isomers. Proceedings of the Combustion Institute, 2013, 34, 1015-1023.	3.9	44
50	A dynamic adaptive method for hybrid integration of stiff chemistry. Combustion and Flame, 2015, 162, 287-295.	5.2	43
51	Simulating Flame Lift-Off Characteristics of Diesel and Biodiesel Fuels Using Detailed Chemical-Kinetic Mechanisms and Large Eddy Simulation Turbulence Model. Journal of Energy Resources Technology, Transactions of the ASME, 2012, 134, .	2.3	41
52	Multidimensional Numerical Simulations of Knocking Combustion in a Cooperative Fuel Research Engine. Journal of Energy Resources Technology, Transactions of the ASME, 2018, 140, .	2.3	38
53	Structure of strongly turbulent premixed n-dodecaneâ€“air flames: Direct numerical simulations and chemical explosive mode analysis. Combustion and Flame, 2019, 209, 27-40.	5.2	38
54	A reduced mechanism for biodiesel surrogates with low temperature chemistry for compression ignition engine applications. Combustion Theory and Modelling, 2012, 16, 369-385.	1.9	37

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55	Diffusion coefficient reduction through species bundling. Combustion and Flame, 2007, 148, 117-126.	5.2	36
56	Direct numerical simulations of the ignition of a lean biodiesel/air mixture with temperature and composition inhomogeneities at high pressure and intermediate temperature. Combustion and Flame, 2014, 161, 2878-2889.	5.2	36
57	Dynamic adaptive combustion modeling of spray flames based on chemical explosive mode analysis. Combustion and Flame, 2018, 195, 30-39.	5.2	34
58	A bifurcation analysis for limit flame phenomena of DME/air in perfectly stirred reactors. Combustion and Flame, 2014, 161, 1716-1723.	5.2	33
59	Some Aspects of Chemical Kinetics in Chapman-Jouguet Detonation: Induction Length Analysis. Journal of Propulsion and Power, 2003, 19, 901-907.	2.2	32
60	A reduced mechanism for ethylene/methane mixtures with excessive NO enrichment. Combustion and Flame, 2011, 158, 1245-1254.	5.2	31
61	Analysis of operator splitting errors for near-limit flame simulations. Journal of Computational Physics, 2017, 335, 578-591.	3.8	31
62	Performance of transported PDF mixing models in a turbulent premixed flame. Proceedings of the Combustion Institute, 2017, 36, 1987-1995.	3.9	30
63	On predicting the length, width, and volume of the jet diffusion flame. Applied Thermal Engineering, 2016, 94, 799-812.	6.0	29
64	Mechanical-Agitation-Assisted Growth of Large-Scale and Uniform ZnO Nanorod Arrays within 3D Multichannel Monolithic Substrates. Crystal Growth and Design, 2013, 13, 3657-3664.	3.0	27
65	On lumped-reduced reaction model for combustion of liquid fuels. Combustion and Flame, 2016, 163, 437-446.	5.2	27
66	A mixing timescale model for TPDF simulations of turbulent premixed flames. Combustion and Flame, 2017, 177, 171-183.	5.2	27
67	A sparse stiff chemistry solver based on dynamic adaptive integration for efficient combustion simulations. Combustion and Flame, 2016, 172, 183-193.	5.2	24
68	Ignition dynamics of DME/methane-air reactive mixing layer under reactivity controlled compression ignition conditions: Effects of cool flames. Applied Energy, 2019, 249, 343-354.	10.1	24
69	A numerical investigation of the flame structure and blowoff characteristics of a bluff-body stabilized turbulent premixed flame. Combustion and Flame, 2019, 202, 376-393.	5.2	23
70	A physics-based approach to modeling real-fuel combustion chemistry â€“ V. NO formation from a typical Jet A. Combustion and Flame, 2020, 212, 270-278.	5.2	23
71	A reduced multicomponent diffusion model. Combustion and Flame, 2015, 162, 68-74.	5.2	22
72	Numerical analysis of ignition and flame stabilization in an n-heptane spray flame. International Journal of Heat and Mass Transfer, 2015, 88, 565-571.	4.8	21

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73	A physics-based approach to modeling real-fuel combustion chemistry â€“ VI. Predictive kinetic models of gasoline fuels. Combustion and Flame, 2020, 220, 475-487.	5.2	21
74	Study on combustion characteristics of dimethyl ether under the moderate or intense low-oxygen dilution condition. Energy Conversion and Management, 2016, 108, 549-565.	9.2	20
75	Analysis of a Turbulent Lifted Hydrogen/Air Jet Flame from Direct Numerical Simulation with Computational Singular Perturbation. , 2008, , .		19
76	Combustion Characteristics of C₅ Alcohols and a Skeletal Mechanism for Homogeneous Charge Compression Ignition Combustion Simulation. Energy & Fuels, 2015, 29, 7584-7594.	5.1	19
77	Effects of Spray and Turbulence Modelling on the Mixing and Combustion Characteristics of an n-heptane Spray Flame Simulated with Dynamic Adaptive Chemistry. Flow, Turbulence and Combustion, 2016, 97, 609-629.	2.6	19
78	Differential diffusion effect on the stabilization characteristics of autoignited laminar lifted methane/hydrogen jet flames in heated coflow air. Combustion and Flame, 2018, 198, 305-319.	5.2	19
79	Experimental and Numerical Investigation of Ethanol/Diethyl Ether Mixtures in a CI Engine. , 0, , .		17
80	Scalable continuous flow synthesis of ZnO nanorod arrays in 3-D ceramic honeycomb substrates for low-temperature desulfurization. CrystEngComm, 2017, 19, 5128-5136.	2.6	16
81	Micromixing Models for PDF Simulations of Turbulent Premixed Flames. Combustion Science and Technology, 2019, 191, 1430-1455.	2.3	16
82	A linearized error propagation method for skeletal mechanism reduction. Combustion and Flame, 2020, 211, 303-311.	5.2	16
83	Towards quantitative prediction of ignition-delay-time sensitivity on fuel-to-air equivalence ratio. Combustion and Flame, 2020, 214, 103-115.	5.2	16
84	Effects of small-scale turbulence on NOx formation in premixed flame fronts. Fuel, 2014, 115, 241-247.	6.4	15
85	On the flame stabilization of turbulent lifted hydrogen jet flames in heated coflows near the autoignition limit: A comparative DNS study. Combustion and Flame, 2021, 233, 111584.	5.2	14
86	Experimental and theoretical insight into the soot tendencies of the methylcyclohexene isomers. Proceedings of the Combustion Institute, 2019, 37, 1083-1090.	3.9	13
87	Numerical Analysis of Fuel Effects on Advanced Compression Ignition Using a Cooperative Fuel Research Engine Computational Fluid Dynamics Model. Journal of Energy Resources Technology, Transactions of the ASME, 2021, 143, .	2.3	13
88	Numerical Investigation of Fuel Property Effects on Mixed-Mode Combustion in a Spark-Ignition Engine. Journal of Energy Resources Technology, Transactions of the ASME, 2021, 143, .	2.3	13
89	Multiple criticality and staged ignition of methane in the counterflow. International Journal of Chemical Kinetics, 2009, 41, 764-776.	1.6	12
90	Multi-Dimensional CFD Simulations of Knocking Combustion in a CFR Engine. , 2017, , .		12

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91	A kinetics-based method for constraint selection in rate-controlled constrained equilibrium. Combustion Theory and Modelling, 2017, 21, 159-182.	1.9	12
92	Investigation of Reactive Scalar Mixing in Transported PDF Simulations of Turbulent Premixed Methane-Air Bunsen Flames. Flow, Turbulence and Combustion, 2019, 103, 667-697.	2.6	12
93	A direct numerical simulation of Jet A flame kernel quenching. Combustion and Flame, 2021, 225, 349-363.	5.2	12
94	Sensitivities of direct numerical simulations to chemical kinetic uncertainties: spherical flame kernel evolution of a real jet fuel. Combustion and Flame, 2019, 209, 117-132.	5.2	10
95	Implementation of Detailed Chemistry Mechanisms in Engine Simulations. Journal of Engineering for Gas Turbines and Power, 2019, 141, .	1.1	10
96	Numerical Investigation of a Central Fuel Property Hypothesis Under Boosted Spark-Ignition Conditions. Journal of Energy Resources Technology, Transactions of the ASME, 2021, 143, .	2.3	10
97	Simulating Flame Lift-Off Characteristics of Diesel and Biodiesel Fuels Using Detailed Chemical-Kinetic Mechanisms and LES Turbulence Model. , 2011, , .		8
98	Analysis of Autoignition Chemistry in Aeroderivative Premixers At Engine Conditions. Journal of Engineering for Gas Turbines and Power, 2021, , .	1.1	8
99	Development of Non-stiff Reduced Mechanisms for Direct Numerical Simulations. , 2008, , .		6
100	Large Eddy Simulation of an n-Heptane Spray Flame with Dynamic Adaptive Chemistry under Different Oxygen Concentrations. SAE International Journal of Engines, 0, 8, 447-454.	0.4	6
101	Dynamics of flowâ€“soot interaction in wrinkled non-premixed ethyleneâ€“air flames. Combustion Theory and Modelling, 2015, 19, 568-586.	1.9	6
102	Wall-impinging laminar premixed n-dodecane flames under autoignitive conditions. Proceedings of the Combustion Institute, 2019, 37, 1647-1654.	3.9	6
103	Heterogeneous Effects in the Propagation and Quenching of Spray Detonations. Journal of Propulsion and Power, 2004, 20, 820-827.	2.2	5
104	Towards Accomodating Realistic Fuel Chemistry in Large-Scale Computations. , 2008, , .		5
105	A Multi-Component Blend as a Diesel Fuel Surrogate for Compression Ignition Engine Applications. , 2014, , .		5
106	Soot Formation Modelling of Spray-A Using a Transported PDF Approach. , 2015, , .		5
107	Simulations of Multi-Mode Combustion Regimes Realizable in a Gasoline Direct Injection Engine. Journal of Energy Resources Technology, Transactions of the ASME, 2021, 143, .	2.3	4
108	Effects of non-thermal termolecular reactions on detonation development in hydrogen (H<mml:math) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 112277.	5.2	4

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109	A second-order dynamic adaptive hybrid scheme for time-integration of stiff chemistry. Combustion and Flame, 2021, 228, 193-201.	5.2	3
110	Approaches to Mechanism Reduction for Hydrocarbon Oxidation: Ethylene. , 2004, , .		2
111	Numerical Study on Combustion Characteristics of Biodiesel Using a New Reduced Mechanism for Methyl Decanoate as Surrogate. , 2010, , .		2
112	The Role of double-turning in Counterflow Ignition of Methane, Ethylene and Methane/Hydrogen Mixtures. , 2008, , .		1
113	Kinetic Study of Methyl Palmitate Oxidation in a Jet-Stirred Reactor and an Opposed-Flow Diffusion Flame Using a Semidetailed Mechanism. Combustion Science and Technology, 2013, 185, 711-722.	2.3	1
114	Analysis of The Chemical States of A Bluff-body Stabilized Premixed Flame Near Blowoff. , 2019, , .		1
115	Chemical Explosive Mode Analysis for Diagnostics of Direct Numerical Simulations. , 2020, , 89-108.		1
116	Study of Turbulent Premixed Flame Thickness using Direct Numerical Simulation in a Slot Burner Configuration. , 2006, , .		0
117	HEEDS Optimized HyChem Mechanisms. , 2017, , .		0
118	Implementation of Detailed Chemistry Mechanisms in Engine Simulations. , 2017, , .		0
119	Lagrangian Chemical Explosive Mode Analysis of Highly Turbulent Premixed Flames. , 2019, , .		0
120	A direct method for calculating turning points of perfectly stirred reactors. Combustion and Flame, 2020, 211, 374-376.	5.2	0
121	An Automated Analytical Differentiation Framework for Reacting Flow Simulations. , 2021, , .		0
122	A spectral method for fast sensitivity analysis: Perfectly stirred reactors. Combustion and Flame, 2021, 229, 111414.	5.2	0
123	Code Structure for the Universal Reduced Kinetics Model. , 2021, , 613-616.		0
124	An Analytical Sensitivity Analysis Method for Turbulent Reacting Flows. , 2022, , .		0