Vigor Yang

List of Publications by Year
in descending order

116 papers	6,954 citations	81900 39 h-index	60623 81 g-index
118 all docs	118 docs citations	118 times ranked	2925 citing authors

#	ARTICLE	IF	CITATIONS
1	Dynamics and stability of lean-premixed swirl-stabilized combustion. Progress in Energy and Combustion Science, 2009, 35, 293-364.	31.2	1,061
2	Modeling of supercritical vaporization, mixing, and combustion processes in liquid-fueled propulsion systems. Proceedings of the Combustion Institute, 2000, 28, 925-942.	3.9	358
3	Effect of particle size on combustion of aluminum particle dust in air. Combustion and Flame, 2009, 156, 5-13.	5.2	324
4	Metal-based nanoenergetic materials: Synthesis, properties, and applications. Progress in Energy and Combustion Science, 2017, 61, 293-365.	31.2	289
5	Modeling High-Pressure Mixing and Combustion Processes in Liquid Rocket Engines. Journal of Propulsion and Power, 1998, 14, 843-857.	2.2	259
6	A general theory of ignition and combustion of nano- and micron-sized aluminum particles. Combustion and Flame, 2016, 169, 94-109.	5.2	219
7	A numerical study of cryogenic fluid injection and mixing under supercritical conditions. Physics of Fluids, 2004, 16, 4248-4261.	4.0	200
8	A unified treatment of general fluid thermodynamics and its application to a preconditioning scheme. Journal of Computational Physics, 2003, 189, 277-304.	3.8	199
9	Modeling of combustion and ignition of solid-propellant ingredients. Progress in Energy and Combustion Science, 2007, 33, 497-551.	31.2	182
10	Combustion of bimodal nano/micron-sized aluminum particle dust in air. Proceedings of the Combustion Institute, 2007, 31, 2001-2009.	3.9	178
11	CRYOGENIC FLUID JETS AND MIXING LAYERS IN TRANSCRITICAL AND SUPERCRITICAL ENVIRONMENTS. Combustion Science and Technology, 2006, 178, 193-227.	2.3	167
12	Effect of Particle Size on Melting of Aluminum at Nano Scales. Journal of Physical Chemistry C, 2007, 111, 11776-11783.	3.1	163
13	Droplet Vaporization In High-Pressure Environments I: Near Critical Conditions. Combustion Science and Technology, 1991, 76, 111-132.	2.3	138
14	Counterflow diffusion flames of general fluids: Oxygen/hydrogen mixtures. Combustion and Flame, 2008, 154, 319-330.	5.2	135
15	Large-eddy simulations of gas-turbine swirl injector flow dynamics. Journal of Fluid Mechanics, 2007, 583, 99-122.	3.4	126
16	Vaporization of Liquid Oxygen (LOX) Droplets in Supercritical Hydrogen Environments. Combustion Science and Technology, 1994, 97, 247-270.	2.3	113
17	Combustion of liquid-fuel droplets in supercritical conditions. Combustion and Flame, 1992, 89, 299-319.	5.2	112
18	A Model of AP/HTPB Composite Propellant Combustion in Rocket-Motor Environments. Combustion Science and Technology, 2008, 180, 2143-2169.	2.3	111

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19	Large-eddy simulations of turbulent swirling flows injected into a dump chamber. Journal of Fluid Mechanics, 2005, 527, 171-195.	3.4	102
20	Near-field flow and flame dynamics of LOX/methane shear-coaxial injector under supercritical conditions. Proceedings of the Combustion Institute, 2007, 31, 2309-2317.	3.9	102
21	A Preconditioned Flux-Differencing Scheme for Chemically Reacting Flows at all Mach Numbers. International Journal of Computational Fluid Dynamics, 1997, 8, 31-49.	1.2	94
22	HIGH-FIDELITY SIMULATIONS OF IMPINGING JET ATOMIZATION. Atomization and Sprays, 2013, 23, 1079-1101.	0.8	93
23	Triggering of longitudinal combustion instabilities in rocket motors - Nonlinear combustion response. Journal of Propulsion and Power, 1996, 12, 1148-1158.	2.2	78
24	A GENERALIZED MODEL OF ACOUSTIC RESPONSE OF TURBULENT PREMIXED FLAME AND ITS APPLICATION TO GAS-TURBINE COMBUSTION INSTABILITY ANALYSIS. Combustion Science and Technology, 2005, 177, 1109-1150.	2.3	76
25	Simplification of pyrolytic reaction mechanism and turbulent heat transfer of n-decane at supercritical pressures. International Journal of Heat and Mass Transfer, 2014, 69, 455-463.	4.8	68
26	Cryogenic fluid dynamics of pressure swirl injectors at supercritical conditions. Physics of Fluids, 2008, 20, .	4.0	66
27	Combustion and Conversion Efficiency of Nanoaluminum-Water Mixtures. Combustion Science and Technology, 2008, 180, 2127-2142.	2.3	61
28	Thickness-based adaptive mesh refinement methods for multi-phase flow simulations with thin regions. Journal of Computational Physics, 2014, 269, 22-39.	3.8	60
29	A general study of counterflow diffusion flames at subcritical and supercritical conditions: Oxygen/hydrogen mixtures. Combustion and Flame, 2014, 161, 3040-3050.	5.2	60
30	An Efficient Surrogate Model for Emulation and Physics Extraction of Large Eddy Simulations. Journal of the American Statistical Association, 2018, 113, 1443-1456.	3.1	59
31	Unsteady flow evolution in swirl injector with radial entry. I. Stationary conditions. Physics of Fluids, 2005, 17, 045106.	4.0	53
32	Unsteady flow evolution in swirl injectors with radial entry. II. External excitations. Physics of Fluids, 2005, 17, 045107.	4.0	53
33	Active Control of Combustion Instabilities with Distributed Actuators. Combustion Science and Technology, 1991, 78, 217-245.	2.3	52
34	Thermo-mechanical behavior of nano aluminum particles with oxide layers during melting. Journal of Nanoparticle Research, 2010, 12, 2989-3002.	1.9	51
35	An efficient preconditioning scheme for real-fluid mixtures using primitive pressureâ€“temperature variables. International Journal of Computational Fluid Dynamics, 2007, 21, 217-230.	1.2	47
36	Combustion of alane and aluminum with water for hydrogen and thermal energy generation. Proceedings of the Combustion Institute, 2011, 33, 1957-1965.	3.9	47

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37	Supersonic Combustion and Flame Stabilization of Coflow Ethylene and Air with Splitter Plate. Journal of Propulsion and Power, 2015, 31, 1242-1255.	2.2	45
38	On the Existence and Stability of Limit Cycles for Transverse Acoustic Oscillations in a Cylindrical Combustion Chamber. 1: Standing Modes. Combustion Science and Technology, 1990, 72, 37-65.	2.3	41
39	Effects of particle size and pressure on combustion of nano-aluminum particles and liquid water. Combustion and Flame, 2013, 160, 2251-2259.	5.2	40
40	Large-Eddy Simulation of Supercritical Combustion: Model Validation Against Gaseous H2â€"O2 Injector. Journal of Propulsion and Power, 2017, 33, 1272-1284.	2.2	40
41	Direct numerical simulation of multiscale flow physics of binary droplet collision. Physics of Fluids, 2020, 32, .	4.0	40
42	Modeling of ammonium dinitramide (ADN) monopropellant combustion with coupled condensed and gas phase kinetics. Combustion and Flame, 2014, 161, 347-362.	5.2	39
43	Supercritical Mixing and Combustion of Liquid-Oxygen/ Kerosene Bi-Swirl Injectors. Journal of Propulsion and Power, 2017, 33, 316-322.	2.2	39
44	Pressure-coupled vaporization response of n-pentane fuel droplet at subcritical and supercritical conditions. Proceedings of the Combustion Institute, 2011, 33, 1997-2003.	3.9	38
45	Combustion of Frozen Nanoaluminum and Water Mixtures. Journal of Propulsion and Power, 2014, 30, 133-142.	2.2	36
46	Pyrophoricity of nascent and passivated aluminum particles at nano-scales. Combustion and Flame, 2013, 160, 1870-1875.	5.2	35
47	Comprehensive Study of Cryogenic Fluid Dynamics of Swirl Injectors at Supercritical Conditions. AIAA Journal, 2017, 55, 3109-3119.	2.6	35
48	Flame propagation of nano/micron-sized aluminum particles and ice (ALICE) mixtures. Proceedings of the Combustion Institute, 2013, 34, 2221-2228.	3.9	34
49	Mechanical Erosion of Graphite Nozzle in Solid-Propellant Rocket Motor. Journal of Propulsion and Power, 2013, 29, 593-601.	2.2	33
50	Effect of ambient pressure on liquid swirl injector flow dynamics. Physics of Fluids, 2014, 26, 102104.	4.0	33
51	A systematic approach to high-fidelity modeling and efficient simulation of supercritical fluid mixing and combustion. Combustion and Flame, 2018, 195, 203-215.	5.2	30
52	Recent advances in physical understanding and quantitative prediction of impinging-jet dynamics and atomization. Chinese Journal of Aeronautics, 2019, 32, 45-57.	5.3	30
53	Three-dimensional flow dynamics and mixing in a gas-centered liquid-swirl coaxial injector at supercritical pressure. Physics of Fluids, 2019, 31, .	4.0	29
54	Vaporization of Liquid Oxygen (LOX) Droplets in Hydrogen and Water Environments under Sub- and Super-Critical Conditions. Combustion Science and Technology, 2007, 180, 1-26.	2.3	28

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55	A Large-Eddy-Simulation Study of Combustion Dynamics of Bluff-Body Stabilized Flames. Combustion Science and Technology, 2016, 188, 924-952.	2.3	28
56	Supercritical fluid flow dynamics and mixing in gas-centered liquid-swirl coaxial injectors. Physics of Fluids, 2018, 30, .	4.0	28
57	Thermochemical Behavior of Nickel-Coated Nanoaluminum Particles. Journal of Physical Chemistry C, 2013, 117, 7858-7869.	3.1	27
58	Thermal and Electrolytic Decomposition and Ignition of HANâ€“Water Solutions. Combustion Science and Technology, 2015, 187, 1065-1078.	2.3	27
59	Radiation and Roughness Effects on Nozzle Thermochemical Erosion in Solid Rocket Motors. Journal of Propulsion and Power, 2014, 30, 314-324.	2.2	26
60	Counterflow Diffusion Flames of Oxygen and N-Alkane Hydrocarbons (CH₄-C₁₆H₃₄) at Subcritical and Supercritical Conditions. Combustion Science and Technology, 2015, 187, 60-82.	2.3	26
61	Supercritical combustion of gas-centered liquid-swirl coaxial injectors for staged-combustion engines. Combustion and Flame, 2018, 197, 204-214.	5.2	25
62	Effect of voids and pressure on melting of nano-particulate and bulk aluminum. Journal of Nanoparticle Research, 2009, 11, 1117-1127.	1.9	23
63	Geometric Effects on Liquid Oxygen/Kerosene Bi-Swirl Injector Flow Dynamics at Supercritical Conditions. AIAA Journal, 2017, 55, 3467-3475.	2.6	23
64	Transient Combustion Response of AP/HTPB Composite Propellant to Acoustic Oscillations in a Rocket Motor. Combustion Science and Technology, 2009, 181, 597-617.	2.3	22
65	Combustion of micron-sized aluminum particle, liquid water, and hydrogen peroxide mixtures. Combustion and Flame, 2014, 161, 2469-2478.	5.2	22
66	Near-field flame dynamics of liquid oxygen/kerosene bi-swirl injectors at supercritical conditions. Combustion and Flame, 2018, 190, 1-11.	5.2	22
67	Decomposition and Ignition of HAN-Based Monopropellants by Electrolysis. , 2009, , .		19
68	Vaporization of two liquid oxygen (LOX) droplets in tandem in convective hydrogen streams at supercritical pressures. International Journal of Heat and Mass Transfer, 2014, 68, 500-508.	4.8	19
69	Effect of packing density on flame propagation of nickel-coated aluminum particles. Combustion and Flame, 2014, 161, 2916-2923.	5.2	19
70	Effects of entrainment and agglomeration of particles on combustion of nano-aluminum and water mixtures. Combustion and Flame, 2014, 161, 2215-2217.	5.2	19
71	Deep-learning accelerated calculation of real-fluid properties in numerical simulation of complex flowfields. Journal of Computational Physics, 2021, 444, 110567.	3.8	18
72	Evolution and transition mechanisms of internal swirling flows with tangential entry. Physics of Fluids, 2018, 30, .	4.0	17

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73	Common Proper Orthogonal Decomposition-Based Spatiotemporal Emulator for Design Exploration. AIAA Journal, 2018, 56, 2429-2442.	2.6	16
74	Vaporization of liquid droplet with large deformation and high mass transfer rate, II: Variable-density, variable-property case. Journal of Computational Physics, 2019, 394, 1-17.	3.8	16
75	A Consistent Characteristic Boundary Condition for General Fluid Mixture and Its Implementation in a Preconditioning Scheme. Advances in Applied Mathematics and Mechanics, 2012, 4, 72-92.	1.2	15
76	Subgrid Scale Modeling of the Equation of State for Turbulent Flows under Supercritical Conditions. , 2017, , .		15
77	Subgrid scale modeling considerations for large eddy simulation of supercritical turbulent mixing and combustion. Physics of Fluids, 2021, 33, .	4.0	15
78	ELECTROLYTIC-INDUCED DECOMPOSITION AND IGNITION OF HAN-BASED LIQUID MONOPROPELLANTS. International Journal of Energetic Materials and Chemical Propulsion, 2007, 6, 575-588.	0.3	15
79	Linear Acoustic Analysis of Main Combustion Chamber of an Oxidizer-Rich Staged Combustion Engine. Journal of Propulsion and Power, 2018, 34, 1505-1518.	2.2	14
80	Vaporization of liquid droplet with large deformation and high mass transfer rate, I: Constant-density, constant-property case. Journal of Computational Physics, 2019, 392, 56-70.	3.8	14
81	Thermochemical behavior of nano-sized aluminum-coated nickel particles. Journal of Nanoparticle Research, 2014, 16, 1.	1.9	13
82	Thermal conductivity calculation of nano-suspensions using Greenâ€"Kubo relations with reduced artificial correlations. Journal of Physics Condensed Matter, 2017, 29, 155302.	1.8	13
83	Comparison of Tabulation and Correlated Dynamic Evaluation of Real Fluid Properties for Supercritical Mixing. , 2017, , .		13
84	Central recirculation zones and instability waves in internal swirling flows with an annular entry. Physics of Fluids, 2018, 30, .	4.0	13
85	High flowrate injector with gaseous hydrogen and gaseous oxygen. Science China Technological Sciences, 2011, 54, 2958-2973.	4.0	12
86	A high-fidelity design methodology using LES-based simulation and POD-based emulation: A case study of swirl injectors. Chinese Journal of Aeronautics, 2018, 31, 1855-1869.	5.3	12
87	Kernel-Smoothed Proper Orthogonal Decompositionâ€"Based Emulation for Spatiotemporally Evolving Flow Dynamics Prediction. AIAA Journal, 2019, 57, 5269-5280.	2.6	12
88	Flow Dynamics and Mixing of a Transverse Jet in Crossflowâ€"Part I: Steady Crossflow. Journal of Engineering for Gas Turbines and Power, 2017, 139, .	1.1	11
89	Optical Diagnostics in a High-Pressure Combustor with Gaseous Oxygen and Kerosene. Journal of Propulsion and Power, 2019, 35, 13-25.	2.2	11
90	Clustering effects on liquid oxygen (LOX) droplet vaporization in hydrogen environments at subcritical and supercritical pressures. International Journal of Hydrogen Energy, 2012, 37, 11815-11823.	7.1	9

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91	Flow Dynamics of Gaseous Oxygen/Kerosene Jet-Swirl Injectors at Supercritical Conditions. , 2017, , .		9
92	Pressure-Coupled Responses of LOX Droplet Vaporization and Combustion in High-Pressure Hydrogen Environments. Combustion Science and Technology, 2014, 186, 1191-1208.	2.3	8
93	Flow dynamics of shear-coaxial cryogenic nitrogen jets under supercritical conditions with and without acoustic excitations. Physics of Fluids, 2021, 33, .	4.0	7
94	Numerical study of two-phase flow dynamics and atomization in an open-type liquid swirl injector. International Journal of Multiphase Flow, 2021, 143, 103702.	3.4	7
95	A numerical study of fluid injection and mixing under near-critical conditions. Acta Mechanica Sinica/Lixue Xuebao, 2012, 28, 559-571.	3.4	6
96	Flame propagation in nano-aluminumâ€“water (nAlâ€“H2O) mixtures: The role of thermal interface resistance. Combustion and Flame, 2019, 201, 160-169.	5.2	6
97	Reduced-Order Modeling for Complex Flow Emulation by Common Kernel-Smoothed Proper Orthogonal Decomposition. AIAA Journal, 2021, 59, 3291-3303.	2.6	6
98	INTERACTIONS BETWEEN ACOUSTIC WAVES AND PREMIXED FLAMES IN POROUS CHAMBERS. , 1994, , .		6
99	Subgrid modeling of the filtered equation of state with application to real-fluid turbulent mixing at supercritical pressures. Physics of Fluids, 2022, 34, .	4.0	6
100	Phonon optimized interatomic potential for aluminum. AIP Advances, 2017, 7, 125022.	1.3	4
101	Accelerating Numerical Simulations of Supercritical Fluid Flows using Deep Neural Networks. , 2020, , .		4
102	Surrogate-based modeling for emulation of supercritical injector flow and combustion. Proceedings of the Combustion Institute, 2021, 38, 6393-6401.	3.9	4
103	Effect of recess length on flow dynamics in gas-centered liquid-swirl coaxial injectors under supercritical conditions. Aerospace Science and Technology, 2022, 128, 107757.	4.8	4
104	Flow Dynamics and Mixing of a Transverse Jet in Crossflowâ€"Part II: Oscillating Crossflow. Journal of Engineering for Gas Turbines and Power, 2017, 139, .	1.1	3
105	Heat Transport in Aqueous Suspensions of Alumina Nanoparticles. , 2016, , .		2
106	A Two-stage Transfer Function Identification Methodology and Its Applications to Bi-swirl Injectors. , 2017, , .		2
107	Liquid vaporization under thermodynamic phase non-equilibrium condition at the gas-liquid interface. Science China Technological Sciences, 2020, 63, 2649-2656.	4.0	2
108	Comparison of Finite Rate Chemistry and Flamelet/Progress-Variable Models: Sandia Flames and the Effect of Differential Diffusion. Combustion Science and Technology, 2020, 192, 1137-1159.	2.3	2

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109	Vaporization and combustion of fuel droplets at supercritical conditions. , 1991, , .		1
110	Modeling Study of Hydrogen/Oxygen and<i>n</i>-alkane/Oxygen Counterflow Diffusion Flames. Chinese Journal of Chemical Physics, 2011, 24, 231-238.	1.3	1
111	A NUMERICAL STUDY OF FLUID INJECTION AND MIXING UNDER NEAR-CRITICAL CONDITIONS. International Journal of Modern Physics Conference Series, 2012, 19, 39-49.	0.7	1
112	Modeling of Nitramine Propellant Combustion and Ignition. Theoretical and Computational Chemistry, 2003, 13, 295-350.	0.4	0
113	COMBUSTION AND IGNITION OF NITRAMINE PROPELLANTS: ASPECTS OF MODELING, SIMULATION, AND ANALYSIS. Advanced Series in Physical Chemistry, 2005, , 369-417.	1.5	0
114	Uncertainty Quantification of Flame Transfer Function under a Bayesian Framework. , 2018, , .		0
115	A novel surrogate model for emulation of bi-fluid swirl injector flow dynamics. , 2020, , .		0
116	Linear stability of real-fluid mixing layers at supercritical pressures. Physics of Fluids, 0, , .	4.0	0