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	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
2	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
3	Surrogate-based modeling for emulation of supercritical injector flow and combustion. Proceedings of the Combustion Institute, 2021, 38, 6393-6401.	3.9	4
4	Subgrid scale modeling considerations for large eddy simulation of supercritical turbulent mixing and combustion. Physics of Fluids, 2021, 33, .	4.0	15
5	Flow dynamics of shear-coaxial cryogenic nitrogen jets under supercritical conditions with and without acoustic excitations. Physics of Fluids, 2021, 33, .	4.0	7
6	Reduced-Order Modeling for Complex Flow Emulation by Common Kernel-Smoothed Proper Orthogonal Decomposition. AIAA Journal, 2021, 59, 3291-3303.	2.6	6
7	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
8	Deep-learning accelerated calculation of real-fluid properties in numerical simulation of complex flowfields. Journal of Computational Physics, 2021, 444, 110567.	3.8	18
9	A novel surrogate model for emulation of bi-fluid swirl injector flow dynamics. , 2020, , .		0
10	Accelerating Numerical Simulations of Supercritical Fluid Flows using Deep Neural Networks. , 2020, , .		4
11	Liquid vaporization under thermodynamic phase non-equilibrium condition at the gas-liquid interface. Science China Technological Sciences, 2020, 63, 2649-2656.	4.0	2
12	Direct numerical simulation of multiscale flow physics of binary droplet collision. Physics of Fluids, 2020, 32, .	4.0	40
13	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
14	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
15	Kernel-Smoothed Proper Orthogonal Decompositionâ€“Based Emulation for Spatiotemporally Evolving Flow Dynamics Prediction. AIAA Journal, 2019, 57, 5269-5280.	2.6	12
16	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
17	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
18	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

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19	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
20	Optical Diagnostics in a High-Pressure Combustor with Gaseous Oxygen and Kerosene. Journal of Propulsion and Power, 2019, 35, 13-25.	2.2	11
21	Evolution and transition mechanisms of internal swirling flows with tangential entry. Physics of Fluids, 2018, 30, .	4.0	17
22	Central recirculation zones and instability waves in internal swirling flows with an annular entry. Physics of Fluids, 2018, 30, .	4.0	13
23	Uncertainty Quantification of Flame Transfer Function under a Bayesian Framework. , 2018, , .		0
24	Near-field flame dynamics of liquid oxygen/kerosene bi-swirl injectors at supercritical conditions. Combustion and Flame, 2018, 190, 1-11.	5.2	22
25	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
26	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
27	Supercritical fluid flow dynamics and mixing in gas-centered liquid-swirl coaxial injectors. Physics of Fluids, 2018, 30, .	4.0	28
28	Common Proper Orthogonal Decomposition-Based Spatiotemporal Emulator for Design Exploration. AIAA Journal, 2018, 56, 2429-2442.	2.6	16
29	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
30	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
31	Supercritical combustion of gas-centered liquid-swirl coaxial injectors for staged-combustion engines. Combustion and Flame, 2018, 197, 204-214.	5.2	25
32	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
33	Flow Dynamics of Gaseous Oxygen/Kerosene Jet-Swirl Injectors at Supercritical Conditions. , 2017, , .		9
34	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
35	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
36	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

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37	Metal-based nanoenergetic materials: Synthesis, properties, and applications. Progress in Energy and Combustion Science, 2017, 61, 293-365.	31.2	289
38	Subgrid Scale Modeling of the Equation of State for Turbulent Flows under Supercritical Conditions. , 2017, , .		15
39	Comparison of Tabulation and Correlated Dynamic Evaluation of Real Fluid Properties for Supercritical Mixing. , 2017, , .		13
40	A Two-stage Transfer Function Identification Methodology and Its Applications to Bi-swirl Injectors. , 2017, , .		2
41	Comprehensive Study of Cryogenic Fluid Dynamics of Swirl Injectors at Supercritical Conditions. AIAA Journal, 2017, 55, 3109-3119.	2.6	35
42	Geometric Effects on Liquid Oxygen/Kerosene Bi-Swirl Injector Flow Dynamics at Supercritical Conditions. AIAA Journal, 2017, 55, 3467-3475.	2.6	23
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	Phonon optimized interatomic potential for aluminum. AIP Advances, 2017, 7, 125022.	1.3	4
45	A general theory of ignition and combustion of nano- and micron-sized aluminum particles. Combustion and Flame, 2016, 169, 94-109.	5.2	219
46	A Large-Eddy-Simulation Study of Combustion Dynamics of Bluff-Body Stabilized Flames. Combustion Science and Technology, 2016, 188, 924-952.	2.3	28
47	Heat Transport in Aqueous Suspensions of Alumina Nanoparticles. , 2016, , .		2
48	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
49	Thermal and Electrolytic Decomposition and Ignition of HANâ€“Water Solutions. Combustion Science and Technology, 2015, 187, 1065-1078.	2.3	27
50	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
51	Effect of ambient pressure on liquid swirl injector flow dynamics. Physics of Fluids, 2014, 26, 102104.	4.0	33
52	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
53	Combustion of micron-sized aluminum particle, liquid water, and hydrogen peroxide mixtures. Combustion and Flame, 2014, 161, 2469-2478.	5.2	22
54	Modeling of ammonium dinitramide (ADN) monopropellant combustion with coupled condensed and gas phase kinetics. Combustion and Flame, 2014, 161, 347-362.	5.2	39

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55	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
56	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
57	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
58	Radiation and Roughness Effects on Nozzle Thermochemical Erosion in Solid Rocket Motors. Journal of Propulsion and Power, 2014, 30, 314-324.	2.2	26
59	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
60	Combustion of Frozen Nanoaluminum and Water Mixtures. Journal of Propulsion and Power, 2014, 30, 133-142.	2.2	36
61	Thermochemical behavior of nano-sized aluminum-coated nickel particles. Journal of Nanoparticle Research, 2014, 16, 1.	1.9	13
62	Effect of packing density on flame propagation of nickel-coated aluminum particles. Combustion and Flame, 2014, 161, 2916-2923.	5.2	19
63	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
64	Mechanical Erosion of Graphite Nozzle in Solid-Propellant Rocket Motor. Journal of Propulsion and Power, 2013, 29, 593-601.	2.2	33
65	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
66	Flame propagation of nano/micron-sized aluminum particles and ice (ALICE) mixtures. Proceedings of the Combustion Institute, 2013, 34, 2221-2228.	3.9	34
67	Pyrophoricity of nascent and passivated aluminum particles at nano-scales. Combustion and Flame, 2013, 160, 1870-1875.	5.2	35
68	Thermochemical Behavior of Nickel-Coated Nanoaluminum Particles. Journal of Physical Chemistry C, 2013, 117, 7858-7869.	3.1	27
69	HIGH-FIDELITY SIMULATIONS OF IMPINGING JET ATOMIZATION. Atomization and Sprays, 2013, 23, 1079-1101.	0.8	93
70	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
71	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
72	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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73	A numerical study of fluid injection and mixing under near-critical conditions. Acta Mechanica Sinica/Lixue Xuebao, 2012, 28, 559-571.	3.4	6
74	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
75	High flowrate injector with gaseous hydrogen and gaseous oxygen. Science China Technological Sciences, 2011, 54, 2958-2973.	4.0	12
76	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
77	Modeling Study of Hydrogen/Oxygen andn-alkane/Oxygen Counterflow Diffusion Flames. Chinese Journal of Chemical Physics, 2011, 24, 231-238.	1.3	1
78	Thermo-mechanical behavior of nano aluminum particles with oxide layers during melting. Journal of Nanoparticle Research, 2010, 12, 2989-3002.	1.9	51
79	Dynamics and stability of lean-premixed swirl-stabilized combustion. Progress in Energy and Combustion Science, 2009, 35, 293-364.	31.2	1,061
80	Effect of voids and pressure on melting of nano-particulate and bulk aluminum. Journal of Nanoparticle Research, 2009, 11, 1117-1127.	1.9	23
81	Effect of particle size on combustion of aluminum particle dust in air. Combustion and Flame, 2009, 156, 5-13.	5.2	324
82	Decomposition and Ignition of HAN-Based Monopropellants by Electrolysis. , 2009, , .		19
83	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
84	Counterflow diffusion flames of general fluids: Oxygen/hydrogen mixtures. Combustion and Flame, 2008, 154, 319-330.	5.2	135
85	Combustion and Conversion Efficiency of Nanoaluminum-Water Mixtures. Combustion Science and Technology, 2008, 180, 2127-2142.	2.3	61
86	A Model of AP/HTPB Composite Propellant Combustion in Rocket-Motor Environments. Combustion Science and Technology, 2008, 180, 2143-2169.	2.3	111
87	Cryogenic fluid dynamics of pressure swirl injectors at supercritical conditions. Physics of Fluids, 2008, 20, .	4.0	66
88	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
89	Effect of Particle Size on Melting of Aluminum at Nano Scales. Journal of Physical Chemistry C, 2007, 111, 11776-11783.	3.1	163
90	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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91	Large-eddy simulations of gas-turbine swirl injector flow dynamics. Journal of Fluid Mechanics, 2007, 583, 99-122.	3.4	126
92	Combustion of bimodal nano/micron-sized aluminum particle dust in air. Proceedings of the Combustion Institute, 2007, 31, 2001-2009.	3.9	178
93	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
94	Modeling of combustion and ignition of solid-propellant ingredients. Progress in Energy and Combustion Science, 2007, 33, 497-551.	31.2	182
95	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
96	CRYOGENIC FLUID JETS AND MIXING LAYERS IN TRANSCRITICAL AND SUPERCRITICAL ENVIRONMENTS. Combustion Science and Technology, 2006, 178, 193-227.	2.3	167
97	COMBUSTION AND IGNITION OF NITRAMINE PROPELLANTS: ASPECTS OF MODELING, SIMULATION, AND ANALYSIS. Advanced Series in Physical Chemistry, 2005, , 369-417.	1.5	0
98	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
99	Unsteady flow evolution in swirl injector with radial entry. I. Stationary conditions. Physics of Fluids, 2005, 17, 045106.	4.0	53
100	Large-eddy simulations of turbulent swirling flows injected into a dump chamber. Journal of Fluid Mechanics, 2005, 527, 171-195.	3.4	102
101	Unsteady flow evolution in swirl injectors with radial entry. II. External excitations. Physics of Fluids, 2005, 17, 045107.	4.0	53
102	A numerical study of cryogenic fluid injection and mixing under supercritical conditions. Physics of Fluids, 2004, 16, 4248-4261.	4.0	200
103	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
104	Modeling of Nitramine Propellant Combustion and Ignition. Theoretical and Computational Chemistry, 2003, 13, 295-350.	0.4	0
105	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
106	Modeling High-Pressure Mixing and Combustion Processes in Liquid Rocket Engines. Journal of Propulsion and Power, 1998, 14, 843-857.	2.2	259
107	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
108	Triggering of longitudinal combustion instabilities in rocket motors - Nonlinear combustion response. Journal of Propulsion and Power, 1996, 12, 1148-1158.	2.2	78

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109	Vaporization of Liquid Oxygen (LOX) Droplets in Supercritical Hydrogen Environments. Combustion Science and Technology, 1994, 97, 247-270.	2.3	113
110	INTERACTIONS BETWEEN ACOUSTIC WAVES AND PREMIXED FLAMES IN POROUS CHAMBERS. , 1994, , .		6
111	Combustion of liquid-fuel droplets in supercritical conditions. Combustion and Flame, 1992, 89, 299-319.	5.2	112
112	Droplet Vaporization In High-Pressure Environments I: Near Critical Conditions. Combustion Science and Technology, 1991, 76, 111-132.	2.3	138
113	Vaporization and combustion of fuel droplets at supercritical conditions. , 1991, , .		1
114	Active Control of Combustion Instabilities with Distributed Actuators. Combustion Science and Technology, 1991, 78, 217-245.	2.3	52
115	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
116	Linear stability of real-fluid mixing layers at supercritical pressures. Physics of Fluids, 0, , .	4.0	0