Vigor Yang

List of Publications by Citations

112 papers	5,154 citations	35 h-index	70 g-index
118 ext. papers	6,167 ext. citations	4.2 avg, IF	6.13 L-index

#	Paper	IF	Citations
112	Dynamics and stability of lean-premixed swirl-stabilized combustion. *Progress in Energy and Combustion Science*, **2009**, 35, 293-364	33.6	786
111	Modeling of supercritical vaporization, mixing, and combustion processes in liquid-fueled propulsion systems. *Proceedings of the Combustion Institute*, **2000**, 28, 925-942	5.9	276
110	Effect of particle size on combustion of aluminum particle dust in air. *Combustion and Flame*, **2009**, 156, 5-13	5.3	250
109	Modeling High-Pressure Mixing and Combustion Processes in Liquid Rocket Engines. *Journal of Propulsion and Power*, **1998**, 14, 843-857	1.8	199
108	Metal-based nanoenergetic materials: Synthesis, properties, and applications. *Progress in Energy and Combustion Science*, **2017**, 61, 293-365	33.6	175
107	A unified treatment of general fluid thermodynamics and its application to a preconditioning scheme. *Journal of Computational Physics*, **2003**, 189, 277-304	4.1	171
106	A numerical study of cryogenic fluid injection and mixing under supercritical conditions. *Physics of Fluids*, **2004**, 16, 4248-4261	4.4	164
105	Combustion of bimodal nano/micron-sized aluminum particle dust in air. *Proceedings of the Combustion Institute*, **2007**, 31, 2001-2009	5.9	149
104	CRYOGENIC FLUID JETS AND MIXING LAYERS IN TRANSCRITICAL AND SUPERCRITICAL ENVIRONMENTS. *Combustion Science and Technology*, **2006**, 178, 193-227	1.5	141
103	Effect of Particle Size on Melting of Aluminum at Nano Scales. *Journal of Physical Chemistry C*, **2007**, 111, 11776-11783	3.8	139
102	A general theory of ignition and combustion of nano- and micron-sized aluminum particles. *Combustion and Flame*, **2016**, 169, 94-109	5.3	138
101	Modeling of combustion and ignition of solid-propellant ingredients. *Progress in Energy and Combustion Science*, **2007**, 33, 497-551	33.6	128
100	Droplet Vaporization In High-Pressure Environments I: Near Critical Conditions. *Combustion Science and Technology*, **1991**, 76, 111-132	1.5	112
99	Counterflow diffusion flames of general fluids: Oxygen/hydrogen mixtures. *Combustion and Flame*, **2008**, 154, 319-330	5.3	108
98	Large-eddy simulations of gas-turbine swirl injector flow dynamics. *Journal of Fluid Mechanics*, **2007**, 583, 99-122	3.7	107
97	Combustion of liquid-fuel droplets in supercritical conditions. *Combustion and Flame*, **1992**, 89, 299-319	5.3	92
96	Large-eddy simulations of turbulent swirling flows injected into a dump chamber. *Journal of Fluid Mechanics*, **2005**, 527, 171-195	3.7	87

95	Near-field flow and flame dynamics of LOX/methane shear-coaxial injector under supercritical conditions. *Proceedings of the Combustion Institute*, **2007**, 31, 2309-2317	5.9	79
94	Vaporization of Liquid Oxygen (LOX) Droplets in Supercritical Hydrogen Environments. *Combustion Science and Technology*, **1994**, 97, 247-270	1.5	78
93	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	76
92	A Model of AP/HTPB Composite Propellant Combustion in Rocket-Motor Environments. *Combustion Science and Technology*, **2008**, 180, 2143-2169	1.5	73
91	HIGH-FIDELITY SIMULATIONS OF IMPINGING JET ATOMIZATION. *Atomization and Sprays*, **2013**, 23, 1079-1101	1.1	69
90	Triggering of longitudinal combustion instabilities in rocket motors - Nonlinear combustion response. *Journal of Propulsion and Power*, **1996**, 12, 1148-1158	1.8	64
89	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	1.5	56
88	Combustion and Conversion Efficiency of Nanoaluminum-Water Mixtures. *Combustion Science and Technology*, **2008**, 180, 2127-2142	1.5	51
87	Cryogenic fluid dynamics of pressure swirl injectors at supercritical conditions. *Physics of Fluids*, **2008**, 20, 056103	4.4	50
86	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	4.9	49
85	A general study of counterflow diffusion flames at subcritical and supercritical conditions: Oxygen/hydrogen mixtures. *Combustion and Flame*, **2014**, 161, 3040-3050	5.3	48
84	Thickness-based adaptive mesh refinement methods for multi-phase flow simulations with thin regions. *Journal of Computational Physics*, **2014**, 269, 22-39	4.1	44
83	Unsteady flow evolution in swirl injectors with radial entry. II. External excitations. *Physics of Fluids*, **2005**, 17, 045107	4.4	43
82	Active Control of Combustion Instabilities with Distributed Actuators. *Combustion Science and Technology*, **1991**, 78, 217-245	1.5	43
81	Combustion of alane and aluminum with water for hydrogen and thermal energy generation. *Proceedings of the Combustion Institute*, **2011**, 33, 1957-1965	5.9	41
80	An efficient preconditioning scheme for real-fluid mixtures using primitive pressure–temperature variables. *International Journal of Computational Fluid Dynamics*, **2007**, 21, 217-230	1.2	41
79	Unsteady flow evolution in swirl injector with radial entry. I. Stationary conditions. *Physics of Fluids*, **2005**, 17, 045106	4.4	40
78	Thermo-mechanical behavior of nano aluminum particles with oxide layers during melting. *Journal of Nanoparticle Research*, **2010**, 12, 2989-3002	2.3	39

77	An Efficient Surrogate Model for Emulation and Physics Extraction of Large Eddy Simulations. *Journal of the American Statistical Association*, **2018**, 113, 1443-1456	2.8	35
76	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	1.5	34
75	Large-Eddy Simulation of Supercritical Combustion: Model Validation Against Gaseous H2O2 Injector. *Journal of Propulsion and Power*, **2017**, 33, 1272-1284	1.8	31
74	Effects of particle size and pressure on combustion of nano-aluminum particles and liquid water. *Combustion and Flame*, **2013**, 160, 2251-2259	5.3	31
73	Modeling of ammonium dinitramide (ADN) monopropellant combustion with coupled condensed and gas phase kinetics. *Combustion and Flame*, **2014**, 161, 347-362	5.3	30
72	Supercritical Mixing and Combustion of Liquid-Oxygen/ Kerosene Bi-Swirl Injectors. *Journal of Propulsion and Power*, **2017**, 33, 316-322	1.8	30
71	Pyrophoricity of nascent and passivated aluminum particles at nano-scales. *Combustion and Flame*, **2013**, 160, 1870-1875	5.3	30
70	Combustion of Frozen Nanoaluminum and Water Mixtures. *Journal of Propulsion and Power*, **2014**, 30, 133-142	1.8	29
69	Pressure-coupled vaporization response of n-pentane fuel droplet at subcritical and supercritical conditions. *Proceedings of the Combustion Institute*, **2011**, 33, 1997-2003	5.9	29
68	Comprehensive Study of Cryogenic Fluid Dynamics of Swirl Injectors at Supercritical Conditions. *AIAA Journal*, **2017**, 55, 3109-3119	2.1	28
67	Flame propagation of nano/micron-sized aluminum particles and ice (ALICE) mixtures. *Proceedings of the Combustion Institute*, **2013**, 34, 2221-2228	5.9	28
66	Effect of ambient pressure on liquid swirl injector flow dynamics. *Physics of Fluids*, **2014**, 26, 102104	4.4	26
65	Thermochemical Behavior of Nickel-Coated Nanoaluminum Particles. *Journal of Physical Chemistry C*, **2013**, 117, 7858-7869	3.8	23
64	Counterflow Diffusion Flames of Oxygen and N-Alkane Hydrocarbons (CH4-C16H34) at Subcritical and Supercritical Conditions. *Combustion Science and Technology*, **2015**, 187, 60-82	1.5	22
63	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	1.5	22
62	Supersonic Combustion and Flame Stabilization of Coflow Ethylene and Air with Splitter Plate. *Journal of Propulsion and Power*, **2015**, 31, 1242-1255	1.8	21
61	Supercritical fluid flow dynamics and mixing in gas-centered liquid-swirl coaxial injectors. *Physics of Fluids*, **2018**, 30, 075106	4.4	19
60	Radiation and Roughness Effects on Nozzle Thermochemical Erosion in Solid Rocket Motors. *Journal of Propulsion and Power*, **2014**, 30, 314-324	1.8	18

59	Effects of entrainment and agglomeration of particles on combustion of nano-aluminum and water mixtures. *Combustion and Flame*, **2014**, 161, 2215-2217	5.3	18
58	Mechanical Erosion of Graphite Nozzle in Solid-Propellant Rocket Motor. *Journal of Propulsion and Power*, **2013**, 29, 593-601	1.8	18
57	Effect of voids and pressure on melting of nano-particulate and bulk aluminum. *Journal of Nanoparticle Research*, **2009**, 11, 1117-1127	2.3	18
56	Combustion of micron-sized aluminum particle, liquid water, and hydrogen peroxide mixtures. *Combustion and Flame*, **2014**, 161, 2469-2478	5.3	17
55	A systematic approach to high-fidelity modeling and efficient simulation of supercritical fluid mixing and combustion. *Combustion and Flame*, **2018**, 195, 203-215	5.3	17
54	Three-dimensional flow dynamics and mixing in a gas-centered liquid-swirl coaxial injector at supercritical pressure. *Physics of Fluids*, **2019**, 31, 065109	4.4	16
53	Direct numerical simulation of multiscale flow physics of binary droplet collision. *Physics of Fluids*, **2020**, 32, 062103	4.4	16
52	A Large-Eddy-Simulation Study of Combustion Dynamics of Bluff-Body Stabilized Flames. *Combustion Science and Technology*, **2016**, 188, 924-952	1.5	15
51	Effect of packing density on flame propagation of nickel-coated aluminum particles. *Combustion and Flame*, **2014**, 161, 2916-2923	5.3	15
50	Geometric Effects on Liquid Oxygen/Kerosene Bi-Swirl Injector Flow Dynamics at Supercritical Conditions. *AIAA Journal*, **2017**, 55, 3467-3475	2.1	15
49	Thermal and Electrolytic Decomposition and Ignition of HAN Water Solutions. *Combustion Science and Technology*, **2015**, 187, 1065-1078	1.5	14
48	Subgrid Scale Modeling of the Equation of State for Turbulent Flows under Supercritical Conditions **2017**,		13
47	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	4.9	13
46	Recent advances in physical understanding and quantitative prediction of impinging-jet dynamics and atomization. *Chinese Journal of Aeronautics*, **2019**, 32, 45-57	3.7	13
45	Near-field flame dynamics of liquid oxygen/kerosene bi-swirl injectors at supercritical conditions. *Combustion and Flame*, **2018**, 190, 1-11	5.3	13
44	Common Proper Orthogonal Decomposition-Based Spatiotemporal Emulator for Design Exploration. *AIAA Journal*, **2018**, 56, 2429-2442	2.1	12
43	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	2.1	12
42	Decomposition and Ignition of HAN-Based Monopropellants by Electrolysis **2009**,		12

41	Transient Combustion Response of AP/HTPB Composite Propellant to Acoustic Oscillations in a Rocket Motor. *Combustion Science and Technology*, **2009**, 181, 597-617	1.5	11
40	Supercritical combustion of gas-centered liquid-swirl coaxial injectors for staged-combustion engines. *Combustion and Flame*, **2018**, 197, 204-214	5.3	10
39	Thermochemical behavior of nano-sized aluminum-coated nickel particles. *Journal of Nanoparticle Research*, **2014**, 16, 1	2.3	10
38	Comparison of Tabulation and Correlated Dynamic Evaluation of Real Fluid Properties for Supercritical Mixing **2017**,		10
37	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	6.7	9
36	High flowrate injector with gaseous hydrogen and gaseous oxygen. *Science China Technological Sciences*, **2011**, 54, 2958-2973	3.5	9
35	Thermal conductivity calculation of nano-suspensions using Green-Kubo relations with reduced artificial correlations. *Journal of Physics Condensed Matter*, **2017**, 29, 155302	1.8	8
34	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	4.1	8
33	Evolution and transition mechanisms of internal swirling flows with tangential entry. *Physics of Fluids*, **2018**, 30, 013601	4.4	8
32	Linear Acoustic Analysis of Main Combustion Chamber of an Oxidizer-Rich Staged Combustion Engine. *Journal of Propulsion and Power*, **2018**, 34, 1505-1518	1.8	8
31	ELECTROLYTIC-INDUCED DECOMPOSITION AND IGNITION OF HAN-BASED LIQUID MONOPROPELLANTS. *International Journal of Energetic Materials and Chemical Propulsion*, **2007**, 6, 575-588	1.9	8
30	Flow Dynamics and Mixing of a Transverse Jet in Crossflow: Part I: Steady Crossflow. *Journal of Engineering for Gas Turbines and Power*, **2017**, 139,	1.7	7
29	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	4.1	7
28	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	3.7	7
27	Solid Propellants **2010**,		7
26	Flow Dynamics of Gaseous Oxygen/Kerosene Jet-Swirl Injectors at Supercritical Conditions **2017**,		6
25	Central recirculation zones and instability waves in internal swirling flows with an annular entry. *Physics of Fluids*, **2018**, 30, 013602	4.4	6
24	Optical Diagnostics in a High-Pressure Combustor with Gaseous Oxygen and Kerosene. *Journal of Propulsion and Power*, **2019**, 35, 13-25	1.8	6

23	Kernel-Smoothed Proper Orthogonal Decomposition□Based Emulation for Spatiotemporally Evolving Flow Dynamics Prediction. *AIAA Journal*, **2019**, 57, 5269-5280	2.1	5
22	A numerical study of fluid injection and mixing under near-critical conditions. *Acta Mechanica Sinica/Lixue Xuebao*, **2012**, 28, 559-571	2	5
21	INTERACTIONS BETWEEN ACOUSTIC WAVES AND PREMIXED FLAMES IN POROUS CHAMBERS **1994**,		5
20	Subgrid scale modeling considerations for large eddy simulation of supercritical turbulent mixing and combustion. *Physics of Fluids*, **2021**, 33, 075112	4.4	5
19	Pressure-Coupled Responses of LOX Droplet Vaporization and Combustion in High-Pressure Hydrogen Environments. *Combustion Science and Technology*, **2014**, 186, 1191-1208	1.5	4
18	Phonon optimized interatomic potential for aluminum. *AIP Advances*, **2017**, 7, 125022	1.5	4
17	Flame propagation in nano-aluminum□water (nAl□H2O) mixtures: The role of thermal interface resistance. *Combustion and Flame*, **2019**, 201, 160-169	5.3	3
16	Flow dynamics of shear-coaxial cryogenic nitrogen jets under supercritical conditions with and without acoustic excitations. *Physics of Fluids*, **2021**, 33, 076111	4.4	3
15	Flow Dynamics and Mixing of a Transverse Jet in Crossflow□Part II: Oscillating Crossflow. *Journal of Engineering for Gas Turbines and Power*, **2017**, 139,	1.7	2
14	Liquid Propellants and Combustion: Fundamentals and Classifications **2010**,		2
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	1.5	1
12	Heat Transport in Aqueous Suspensions of Alumina Nanoparticles **2016**,		1
11	A Two-stage Transfer Function Identification Methodology and Its Applications to Bi-swirl Injectors **2017**,		1
10	Modeling Study of Hydrogen/Oxygen and n-alkane/Oxygen Counterflow Diffusion Flames. *Chinese Journal of Chemical Physics*, **2011**, 24, 231-238	0.9	1
9	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
8	Liquid vaporization under thermodynamic phase non-equilibrium condition at the gas-liquid interface. *Science China Technological Sciences*, **2020**, 63, 2649-2656	3.5	1
7	Surrogate-based modeling for emulation of supercritical injector flow and combustion. *Proceedings of the Combustion Institute*, **2021**, 38, 6393-6401	5.9	1
6	Deep-learning accelerated calculation of real-fluid properties in numerical simulation of complex flowfields. *Journal of Computational Physics*, **2021**, 444, 110567	4.1	1

5	Subgrid modeling of the filtered equation of state with application to real-fluid turbulent mixing at supercritical pressures. *Physics of Fluids*, **2022**, 34, 065112	4.4	1
4	Reduced-Order Modeling for Complex Flow Emulation by Common Kernel-Smoothed Proper Orthogonal Decomposition. *AIAA Journal*, **2021**, 59, 3291-3303	2.1	0
3	Numerical study of two-phase flow dynamics and atomization in an open-type liquid swirl injector. *International Journal of Multiphase Flow*, **2021**, 143, 103702	3.6	0
2	Modeling of Nitramine Propellant Combustion and Ignition. *Theoretical and Computational Chemistry*, **2003**, 13, 295-350		
1	COMBUSTION AND IGNITION OF NITRAMINE PROPELLANTS: ASPECTS OF MODELING, SIMULATION, AND ANALYSIS. *Advanced Series in Physical Chemistry*, **2005**, 369-417		