

Zu-chao Zhu

List of Publications by Year in descending order

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113
papers

1,846
citations

279798

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113
all docs

113
docs citations

113
times ranked

655
citing authors

#	ARTICLE	IF	CITATIONS
1	Analysis of unsteady flow and fluid exciting forces of multistage centrifugal pump based on actual size. Proceedings of the Institution of Mechanical Engineers, Part A: Journal of Power and Energy, 2022, 236, 21-32.	1.4	5
2	A Numerical and Experimental Study of the Time-Averaged and Transient Flow Downstream of a Butterfly Valve. Journal of Fluids Engineering, Transactions of the ASME, 2022, 144, .	1.5	8
3	Numerical study of gas-liquid two-phase flow and erosion in a cavity with a slope. Particuology, 2022, 62, 25-35.	3.6	7
4	Comparative analysis of transient valve-induced flow characteristics between opening and closing processes. Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering, 2022, 236, 1319-1329.	2.5	2
5	Correlation between the Internal Flow Pattern and the Blade Load Distribution of the Centrifugal Impeller. Machines, 2022, 10, 40.	2.2	1
6	Small-scale fluctuation and scaling law of mixing in three-dimensional rotating turbulent Rayleigh-Taylor instability. Physical Review E, 2022, 105, 015103.	2.1	3
7	Flow Characteristics and Energy Loss of a Multistage Centrifugal Pump with Blade-Type Guide Vanes. Journal of Marine Science and Engineering, 2022, 10, 180.	2.6	4
8	Time-Resolved Particle Image Velocimetry Measurements and Proper Orthogonal Decomposition Analysis of Unsteady Flow in a Centrifugal Impeller Passage. Frontiers in Energy Research, 2022, 9, .	2.3	11
9	Large eddy simulation of cavitating flow around a twist hydrofoil and investigation on force element evolution using a multiscale cavitation model. Physics of Fluids, 2022, 34, .	4.0	6
10	Investigations of energy distribution and loss characterization in a centrifugal impeller through PIV experiment. Ocean Engineering, 2022, 247, 110773.	4.3	19
11	An energy consumption improvement method for centrifugal pump based on bionic optimization of blade trailing edge. Energy, 2022, 246, 123323.	8.8	34
12	Experimental Study on Operational Stability of Centrifugal Pumps of Varying Impeller Types Based on External Characteristic, Pressure Pulsation and Vibration Characteristic Tests. Frontiers in Energy Research, 2022, 10, .	2.3	3
13	Effect of Incident Angle of Wear-Ring Clearance on Pressure Pulsation and Vibration Performance of Centrifugal Pump. Frontiers in Energy Research, 2022, 10, .	2.3	5
14	Transient Regulating Characteristics of V-Port Ball Valve in Opening and Closing Process. Journal of Fluids Engineering, Transactions of the ASME, 2022, , .	1.5	5
15	Numerical study on flow and wear characteristics of dense fine particle solid-liquid two-phase flow in centrifugal pump. AIP Advances, 2022, 12, .	1.3	2
16	Numerical study of solid-liquid two-phase flow and erosion in ball valves with different openings. Advanced Powder Technology, 2022, 33, 103542.	4.1	9
17	Blade shape optimization and internal-flow characteristics of the backward non-volute centrifugal fan. Proceedings of the Institution of Mechanical Engineers, Part A: Journal of Power and Energy, 2022, 236, 673-688.	1.4	3
18	Effects of particle size and liquid film viscosity on characteristics of particles colliding with dry and wet walls. Physics of Fluids, 2022, 34, .	4.0	4

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19	Axial thrust instability analysis and estimation theory of high speed centrifugal pump. <i>Physics of Fluids</i> , 2022, 34, .	4.0	13
20	Numerical investigation on buoyancy-driven flow over a circular cylinder in a channel with nonparallel walls. <i>Numerical Heat Transfer; Part A: Applications</i> , 2022, 82, 299-316.	2.1	2
21	Numerical Analysis of Droplet Impact on the Convex Surface with Liquid Film. <i>Langmuir</i> , 2022, 38, 7593-7602.	3.5	3
22	Application of enstrophy dissipation to analyze energy loss in a centrifugal pump as turbine. <i>Renewable Energy</i> , 2021, 163, 41-55.	8.9	43
23	Solidâ€“liquid two-phase flow and erosion calculation of butterfly valves at small opening based on DEM method. <i>Industrial Lubrication and Tribology</i> , 2021, 73, 414-421.	1.3	3
24	Numerical investigation of transient liquid nitrogen cavitating flows with special emphasis on force evolution and entropy features. <i>Cryogenics</i> , 2021, 113, 103225.	1.7	16
25	Large Eddy Simulation of Periodic Transient Pressure Fluctuation in a Centrifugal Pump Impeller at Low Flow Rate. <i>Symmetry</i> , 2021, 13, 311.	2.2	3
26	Numerical Simulation of Fine Particle Solid-Liquid Two-Phase Flow in a Centrifugal Pump. <i>Shock and Vibration</i> , 2021, 2021, 1-10.	0.6	6
27	Investigation of Flow Separation Characteristics in a Pump as Turbines Impeller Under the Best Efficiency Point Condition. <i>Journal of Fluids Engineering, Transactions of the ASME</i> , 2021, 143, .	1.5	11
28	Experimental and numerical investigations of cavitation evolution in a high-speed centrifugal pump with inducer. <i>Journal of Hydrodynamics</i> , 2021, 33, 140-149.	3.2	23
29	Study on the eccentric jet-flow characteristics induced by the opening regulation with a gate valve. <i>Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science</i> , 2021, 235, 5353-5364.	2.1	2
30	Numerical Analyses of Static Characteristics of Liquid Annular Seals Based on 2D LBM-LES Model. <i>Shock and Vibration</i> , 2021, 2021, 1-11.	0.6	0
31	Impact of Particle Sizes on Flow Characteristics of Slurry Pump for Deep-Sea Mining. <i>Shock and Vibration</i> , 2021, 2021, 1-13.	0.6	10
32	Effect of Rotation Speed and Flow Rate on Slip Factor in a Centrifugal Pump. <i>Shock and Vibration</i> , 2021, 2021, 1-14.	0.6	0
33	Boundary Vorticity Analysis and Shedding Dynamics of Transient Cavitation Flow Around a Twisted Hydrofoil. <i>Journal of Fluids Engineering, Transactions of the ASME</i> , 2021, 143, .	1.5	8
34	Numerical and experimental research on the erosion of solid-liquid two-phase flow in transport butterfly valve based on DEM method. <i>Industrial Lubrication and Tribology</i> , 2021, 73, 606-613.	1.3	6
35	Influence of Impeller Sinusoidal Tubercle Trailing-Edge on Pressure Pulsation in a Centrifugal Pump at Nominal Flow Rate. <i>Journal of Fluids Engineering, Transactions of the ASME</i> , 2021, 143, .	1.5	26
36	Multiscale modeling of tip-leakage cavitating flows by a combined volume of fluid and discrete bubble model. <i>Physics of Fluids</i> , 2021, 33, .	4.0	36

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37	Numerical analysis of thermo-sensitive cavitating flows with special emphasises on flow separation and enstrophy conversion. <i>International Communications in Heat and Mass Transfer</i> , 2021, 125, 105336.	5.6	14
38	Very Large Eddy Simulation of Cavitation from Inception to Sheet/Cloud Regimes by A Multiscale Model. <i>China Ocean Engineering</i> , 2021, 35, 361-371.	1.6	16
39	Studies of cavitation characteristics of inducers with different blade numbers. <i>AIP Advances</i> , 2021, 11, .	1.3	3
40	The effect of solid particle size and concentrations on internal flow and external characteristics of the dense fine particles solid-liquid two-phase centrifugal pump under low flow condition. <i>AIP Advances</i> , 2021, 11, 085309.	1.3	4
41	Numerical study on cavitation over flat hydrofoils with arc obstacles. <i>Physics of Fluids</i> , 2021, 33, .	4.0	16
42	Effect of liquid layer on the motion of particle during oblique wet collision. <i>Advanced Powder Technology</i> , 2021, 32, 3259-3267.	4.1	3
43	Large eddy simulation of tip-leakage cavitating flow using a multiscale cavitation model and investigation on model parameters. <i>Physics of Fluids</i> , 2021, 33, .	4.0	16
44	Void fraction and pressure drop of hydrocarbon mixture during condensation in a helically coiled tube. <i>International Journal of Heat and Mass Transfer</i> , 2021, 178, 121618.	4.8	1
45	Instability analysis for a centrifugal pump with straight inlet pipe using partially averaged Navier-Stokes model. <i>Proceedings of the Institution of Mechanical Engineers, Part A: Journal of Power and Energy</i> , 2021, 235, 211-226.	1.4	4
46	Effects of flow pattern on hydraulic performance and energy conversion characterisation in a centrifugal pump. <i>Renewable Energy</i> , 2020, 151, 475-487.	8.9	88
47	Investigation of transient gas-solid flow characteristics and particle erosion in a square gate valve. <i>Engineering Failure Analysis</i> , 2020, 118, 104827.	4.0	9
48	Experimental and Comparative RANS/URANS Investigations on the Effect of Radius of Volute Tongue on the Aerodynamics and Aeroacoustics of a Sirocco Fan. <i>Processes</i> , 2020, 8, 1442.	2.8	7
49	Evolution Characteristics of Separated Vortices and Near-Wall Flow in a Centrifugal Impeller in an Off-Designed Condition. <i>Applied Sciences (Switzerland)</i> , 2020, 10, 8209.	2.5	5
50	Investigation of flow pattern and hydraulic performance of a centrifugal pump impeller through the PIV method. <i>Renewable Energy</i> , 2020, 162, 561-574.	8.9	25
51	Reduction of aerodynamic noise of single-inlet centrifugal fan with inclined volute tongue. <i>Measurement and Control</i> , 2020, 53, 1376-1387.	1.8	4
52	Characteristics of Ammonia Oxidation in a Dielectric Barrier Discharge Reactor. <i>IEEE Transactions on Plasma Science</i> , 2020, 48, 3616-3620.	1.3	2
53	Unsteady Flow Characteristics of Rotating Stall and Surging in a Backward Centrifugal Fan at Low Flow-Rate Conditions. <i>Processes</i> , 2020, 8, 872.	2.8	6
54	Investigation on characteristics of pressure fluctuation in a centrifugal pump with clearance flow. <i>Journal of Mechanical Science and Technology</i> , 2020, 34, 3657-3666.	1.5	14

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55	Research of Particle Motion in a Two-Stage Slurry Transport Pump for Deep-Ocean Mining by the CFD-DEM Method. <i>Energies</i> , 2020, 13, 6711.	3.1	10
56	Numerical Analysis to the Effect of Guiding Plate on Flow Characteristics in a Ball Valve. <i>Processes</i> , 2020, 8, 69.	2.8	5
57	Numerical Study on the Influence of Inlet Guide Vanes on the Internal Flow Characteristics of Centrifugal Pump. <i>Processes</i> , 2020, 8, 122.	2.8	10
58	Extended compressible thermal cavitation model for the numerical simulation of cryogenic cavitating flow. <i>International Journal of Hydrogen Energy</i> , 2020, 45, 10104-10118.	7.1	51
59	Gas-liquid two-phase flow and erosion calculation of gate valve based on the CFD-DEM model. <i>Powder Technology</i> , 2020, 366, 395-407.	4.2	51
60	Comparative Experiments on a Self-priming Pump Delivering Water Medium During Rapid and Slow Starting Periods. <i>Iranian Journal of Science and Technology - Transactions of Mechanical Engineering</i> , 2020, , 1.	1.3	6
61	Effects of clearance flow on the characteristics of centrifugal pump under low flow rate. <i>Journal of Mechanical Science and Technology</i> , 2020, 34, 189-200.	1.5	14
62	An Experimental and Numerical Study of Regulating Performance and Flow Loss in a V-Port Ball Valve. <i>Journal of Fluids Engineering, Transactions of the ASME</i> , 2020, 142, .	1.5	42
63	Experiments on Pressure Distribution of a Low Specific-Speed Centrifugal Pump with Atypical Open Impeller. <i>Journal of Chemical Engineering of Japan</i> , 2020, 53, 237-245.	0.6	2
64	Effect of Shaft Diameter on the Hydrodynamic Torque of Butterfly Valve Disk. <i>Journal of Fluids Engineering, Transactions of the ASME</i> , 2020, 142, 111202.	1.5	8
65	Condensation flow patterns and heat transfer correction for zeotropic hydrocarbon mixtures in a helically coiled tube. <i>International Journal of Heat and Mass Transfer</i> , 2019, 143, 118500.	4.8	15
66	Quantification of wake unsteadiness for low-Re flow across two staggered cylinders. <i>Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science</i> , 2019, 233, 6892-6909.	2.1	20
67	Analysis of vortices formed in flow passage of a five-bladed centrifugal water pump by means of PIV method. <i>AIP Advances</i> , 2019, 9, .	1.3	10
68	Effects of Single-arc Blade Profile Length on the Performance of a Forward Multiblade Fan. <i>Processes</i> , 2019, 7, 629.	2.8	8
69	Effects of dimensional wall temperature on velocity-temperature correlations in supersonic turbulent channel flow of thermally perfect gas. <i>Science China: Physics, Mechanics and Astronomy</i> , 2019, 62, 1.	5.1	13
70	Metrological performance investigation of swirl flowmeter affected by vortex inflow. <i>Journal of Mechanical Science and Technology</i> , 2019, 33, 2671-2680.	1.5	17
71	Study on the metrological performance of a swirlmeter affected by flow regulation with a sleeve valve. <i>Flow Measurement and Instrumentation</i> , 2019, 67, 83-94.	2.0	28
72	Unsteady mixed convection in a square enclosure with an inner cylinder rotating in a bi-directional and time-periodic mode. <i>International Journal of Heat and Mass Transfer</i> , 2019, 136, 563-580.	4.8	39

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73	Effects of vortex structure on performance characteristics of a multiblade fan with inclined tongue. Proceedings of the Institution of Mechanical Engineers, Part A: Journal of Power and Energy, 2019, 233, 1007-1021.	1.4	28
74	Investigation of flow separation in a centrifugal pump impeller based on improved delayed detached eddy simulation method. Advances in Mechanical Engineering, 2019, 11, 168781401989783.	1.6	6
75	Experimental investigations on the performance and noise characteristics of a forward-curved fan with the stepped tongue. Measurement and Control, 2019, 52, 1480-1488.	1.8	19
76	Unstable flow characteristics in a pump-turbine simulated by a modified Partially-Averaged Navier-Stokes method. Science China Technological Sciences, 2019, 62, 406-416.	4.0	18
77	Numerical investigation of attached cavitating flow in thermo-sensitive fluid with special emphasis on thermal effect and shedding dynamics. International Journal of Hydrogen Energy, 2019, 44, 3170-3184.	7.1	40
78	Instability analysis under part-load conditions in centrifugal pump. Journal of Mechanical Science and Technology, 2019, 33, 269-278.	1.5	24
79	Large eddy simulation of energy gradient field in a centrifugal pump impeller. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 2019, 233, 4047-4057.	2.1	9
80	Internal unsteady flow characteristics of centrifugal pump based on entropy generation rate and vibration energy. Proceedings of the Institution of Mechanical Engineers, Part E: Journal of Process Mechanical Engineering, 2019, 233, 456-473.	2.5	31
81	Theoretical Solutions for Dynamic Characteristics of Spiral-Grooved Liquid Seals. Tribology Transactions, 2019, 62, 22-33.	2.0	5
82	Effect of the blade loading distribution on hydrodynamic performance of a centrifugal pump with cylindrical blades. Journal of Mechanical Science and Technology, 2018, 32, 1161-1170.	1.5	55
83	Numerical investigation of pressure distribution in a low specific speed centrifugal pump. Journal of Thermal Science, 2018, 27, 25-33.	1.9	13
84	Entropy generation analysis for the cavitating head-drop characteristic of a centrifugal pump. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 2018, 232, 4637-4646.	2.1	85
85	Numerical simulation of cryogenic cavitating flow by an extended transport-based cavitation model with thermal effects. Cryogenics, 2018, 92, 98-104.	1.7	44
86	Partitioning effect on natural convection in a circular enclosure with an asymmetrically placed inclined plate. International Communications in Heat and Mass Transfer, 2018, 90, 11-22.	5.6	21
87	Direct numerical simulation of high-temperature supersonic turbulent channel flow of equilibrium air. AIP Advances, 2018, 8, 115325.	1.3	5
88	Transient behaviors of mixed convection in a square enclosure with an inner impulsively rotating circular cylinder. International Communications in Heat and Mass Transfer, 2018, 98, 143-154.	5.6	31
89	Statistics of Heat Transfer in Two-Dimensional Turbulent Rayleigh-Bénard Convection at Various Prandtl Number. Entropy, 2018, 20, 582.	2.2	7
90	Theoretical Solutions for Dynamic Characteristics of Liquid Annular Seals with Herringbone Grooves on the Stator Based on Bulk-Flow Theory. Science and Technology of Nuclear Installations, 2018, 2018, 1-13.	0.8	2

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91	Unsteady characteristics of low-Re flow past two tandem cylinders. Theoretical and Computational Fluid Dynamics, 2018, 32, 475-493.	2.2	27
92	Numerical and experimental studies on hydrodynamic characteristics of sleeve regulating valves. Flow Measurement and Instrumentation, 2017, 53, 279-285.	2.0	24
93	Flow Unsteadiness and Stability Characteristics of Low-Re Flow Past an Inclined Triangular Cylinder. Journal of Fluids Engineering, Transactions of the ASME, 2017, 139, .	1.5	15
94	Temporal Evolution and Scaling of Mixing in Turbulent Thermal Convection for Inhomogeneous Boundary Conditions. Advances in Applied Mathematics and Mechanics, 2017, 9, 1035-1051.	1.2	0
95	Forced convection of flow past two tandem rectangular cylinders in a channel. Numerical Heat Transfer; Part A: Applications, 2017, 72, 89-106.	2.1	25
96	Numerical simulation and analysis of flow characteristics in the front chamber of a centrifugal pump. Journal of Mechanical Science and Technology, 2017, 31, 5131-5140.	1.5	4
97	Prediction of particle distribution and particle impact erosion in inclined cavities. Powder Technology, 2017, 305, 562-571.	4.2	10
98	Influence of opening and closing process of ball valve on external performance and internal flow characteristics. Experimental Thermal and Fluid Science, 2017, 80, 193-202.	2.7	63
99	An improved turbulence model for separation flow in a centrifugal pump. Advances in Mechanical Engineering, 2016, 8, 168781401665331.	1.6	5
100	Influence of flashboard location on flow resistance properties and internal features of gate valve under the variable condition. Journal of Natural Gas Science and Engineering, 2016, 33, 108-117.	4.4	25
101	Experimental and numerical investigations of head-flow curve instability of a single-stage centrifugal pump with volute casing. Proceedings of the Institution of Mechanical Engineers, Part A: Journal of Power and Energy, 2016, 230, 633-647.	1.4	55
102	Numerical study on flow characteristics of rotor pumps including cavitation. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 2015, 229, 2626-2638.	2.1	6
103	Numerical and experimental investigations on the cavitation characteristics of a high-speed centrifugal pump with a splitter-blade inducer. Journal of Mechanical Science and Technology, 2015, 29, 259-267.	1.5	45
104	Effects of the short blade locations on the anti-cavitation performance of the splitter-bladed inducer and the pump. Chinese Journal of Chemical Engineering, 2015, 23, 1095-1101.	3.5	16
105	A Method to Determine the Slip Factor of Centrifugal Pumps through Experiment. International Journal of Turbo and Jet Engines, 2015, 32, .	0.7	5
106	Three-dimensional numerical investigation of solid particle erosion in gate valves. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 2014, 228, 1670-1679.	2.1	13
107	Numerical study of solid particle erosion in a cavity with different wall heights. Powder Technology, 2014, 254, 150-159.	4.2	26
108	Influence of blade outlet angle on performance of low-specific-speed centrifugal pump. Journal of Thermal Science, 2013, 22, 117-122.	1.9	18

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109	Numerical simulation and analysis of solid-liquid two-phase flow in centrifugal pump. Chinese Journal of Mechanical Engineering (English Edition), 2013, 26, 53-60.	3.7	38
110	Numerical simulation and experimental research on the influence of solid-phase characteristics on centrifugal pump performance. Chinese Journal of Mechanical Engineering (English Edition), 2012, 25, 1184-1189.	3.7	20
111	The Flow Simulation and Experimental Study of Low-Specific-Speed High-Speed Complex Centrifugal Impellers. Chinese Journal of Chemical Engineering, 2006, 14, 435-441.	3.5	35
112	Numerical investigation on separated turbulent flow in a three-dimensional U-turn duct with spanwise diverging. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 0, , 095440622110293.	2.1	0
113	Transient separation and fluctuation of turbulent flow in an axisymmetric U-turn channel perturbed by periodically passing gust inflow. Proceedings of the Institution of Mechanical Engineers, Part C: Journal of Mechanical Engineering Science, 0, , 095440622210819.	2.1	0