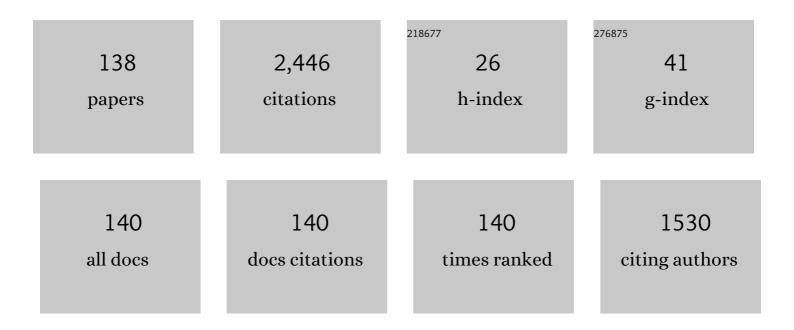


List of Publications by Year in descending order

Source: https://exaly.com/author-pdf/4421966/publications.pdf Version: 2024-02-01



#	Article	IF	CITATIONS
1	Investigation and improvement of intelligent evolutionary algorithms for the energy cost optimization of an industry crude oil pipeline system. Engineering Optimization, 2023, 55, 856-875.	2.6	2
2	Stratum temperature recovery considering groundwater advection in periodic operations of deep borehole heat exchangers. Applied Thermal Engineering, 2022, 206, 118113.	6.0	10
3	Complex Fracture Closure Pressure Analysis During Shut-in: A Numerical Study. Energy Exploration and Exploitation, 2022, 40, 1252-1267.	2.3	7
4	Surrogate modeling and optimization for the unequal diameter radial diffuser of stratified thermal energy storage tanks. Energy Science and Engineering, 2022, 10, 2497-2508.	4.0	1
5	Repicturing viscoelastic drag-reducing turbulence by introducing dynamics of elasto-inertial turbulence. Journal of Fluid Mechanics, 2022, 940, .	3.4	7
6	Development of an efficient large time step unsteady solver for incompressible flows using the IDEAL algorithm in OpenFOAM. Journal of Computational Science, 2022, 61, 101692.	2.9	2
7	Investigation of thermal-hydro-mechanical coupled fracture propagation considering rock damage. Computational Geosciences, 2022, 26, 1167-1187.	2.4	9
8	A Novel Layered Slice Algorithm for Soil Heat Storage and Its Solving Performance Analysis. Energies, 2022, 15, 3743.	3.1	1
9	Numerical simulations of polygonal particles settling within non-Newtonian fluids. Physics of Fluids, 2022, 34, .	4.0	6
10	An efficient multigrid-DEIM semi-reduced-order model for simulation of single-phase compressible flow in porous media. Petroleum Science, 2021, 18, 923.	4.9	0
11	Numerical investigation of airflow and heat transfer characteristics and optimal design of the American ginseng drying room. Applied Thermal Engineering, 2021, 183, 115885.	6.0	6
12	Experimental Investigation of Mechanical Properties and Failure Behavior of Fluid-Saturated Hot Dry Rocks. Natural Resources Research, 2021, 30, 289-305.	4.7	31
13	Experimental Investigation of Thermal Effect on Fracability Index of Geothermal Reservoirs. Natural Resources Research, 2021, 30, 273-288.	4.7	28
14	Comparative study on numerical performances of log-conformation representation and standard conformation representation in the simulation of viscoelastic fluid turbulent drag-reducing channel flow. Physics of Fluids, 2021, 33, 023101.	4.0	9
15	Study on solving performance of VOSETÂ+ÂIDEAL with different algebraic equation solution methods. Applied Thermal Engineering, 2021, 184, 116368.	6.0	2
16	Assessment method for gas supply reliability of natural gas pipeline networks considering failure and repair. Journal of Natural Gas Science and Engineering, 2021, 88, 103817.	4.4	13
17	A Frequency Analysis Method to Estimate the Relative Importance of Basset Force on Small Particles in Turbulence. International Journal of Multiphase Flow, 2021, 139, 103640.	3.4	4
18	Influences of Hydrogen Blending on the Joule–Thomson Coefficient of Natural Gas. ACS Omega, 2021, 6, 16722-16735.	3.5	15

#	Article	IF	CITATIONS
19	Investigation of water bubble nucleation by using molecular dynamics simulation. Journal of Molecular Liquids, 2021, 334, 116037.	4.9	14
20	Role of elasto-inertial turbulence in viscoelastic drag-reducing turbulence. Physics of Fluids, 2021, 33, .	4.0	10
21	Long-term heat transfer analysis of deep coaxial borehole heat exchangers via an improved analytical model. Applied Thermal Engineering, 2021, 197, 117370.	6.0	27
22	Study on the multi-objective optimization of reliability and operating cost for natural gas pipeline network. Oil and Gas Science and Technology, 2021, 76, 42.	1.4	9
23	An adaptive coupled volume-of-fluid and level set method based on unstructured grids. Physics of Fluids, 2021, 33, .	4.0	18
24	Effects of hydrogen blending on hydraulic and thermal characteristics of natural gas pipeline and pipe network. Oil and Gas Science and Technology, 2021, 76, 70.	1.4	14
25	A novel POD reduced-order model based on EDFM for steady-state and transient heat transfer in fractured geothermal reservoir. International Journal of Heat and Mass Transfer, 2020, 146, 118783.	4.8	23
26	Direct numerical simulation of bubble dynamics and heat transfer during nucleate boiling on the micro-pin-finned surfaces. International Journal of Heat and Mass Transfer, 2020, 163, 120504.	4.8	21
27	A comparative study on simulating flow-induced fracture deformation in subsurface media by means of extended FEM and FVM. Oil and Gas Science and Technology, 2020, 75, 41.	1.4	6
28	The effect of foreign particles on liquid film evaporation at the nanoscale: A molecular dynamics simulation. Journal of Molecular Liquids, 2020, 319, 114218.	4.9	15
29	Molecular Dynamics Study of Bubble Nucleation on an Ideally Smooth Substrate. Langmuir, 2020, 36, 13725-13734.	3.5	13
30	Comparison of turbulent drag reduction mechanisms of viscoelastic fluids based on the Fukagata-Iwamoto-Kasagi identity and the Renard-Deck identity. Physics of Fluids, 2020, 32, 013104.	4.0	16
31	Effects of simulation system on the phase transition behavior of liquid film: A molecular dynamics study. Journal of Molecular Liquids, 2020, 311, 113306.	4.9	15
32	A POD-DEIM reduced model for compressible gas reservoir flow based on the Peng-Robinson equation of state. Journal of Natural Gas Science and Engineering, 2020, 79, 103367.	4.4	7
33	Study on the effect of foreign particle on bubble nucleation by using molecular dynamics simulation. Journal of Molecular Liquids, 2020, 305, 112876.	4.9	17
34	Molecular dynamics studies of bubble nucleation on a grooved substrate. International Journal of Heat and Mass Transfer, 2020, 158, 119850.	4.8	49
35	Multi-objective optimization of guide vanes for axial flow cyclone using CFD, SVM, and NSGA II algorithm. Powder Technology, 2020, 373, 637-646.	4.2	28
36	Dynamics of a circular cylinder with an attached splitter plate in laminar flow: A transition from vortex-induced vibration to galloping. Physics of Fluids, 2020, 32, .	4.0	60

#	Article	IF	CITATIONS
37	A Galerkinâ€free/equationâ€free model reduction method for singleâ€phase flow in fractured porous media. Energy Science and Engineering, 2020, 8, 1997-2010.	4.0	2
38	Modeling of multi-scale transport phenomena in shale gas production — A critical review. Applied Energy, 2020, 262, 114575.	10.1	161
39	Study on a POD reduced-order model for steady-state flows in fractured porous media. International Communications in Heat and Mass Transfer, 2020, 112, 104489.	5.6	3
40	Experimental Study on the Failure Mechanisms in Brittle Shales. ACS Omega, 2020, 5, 10382-10394.	3.5	6
41	Molecular Dynamics Study of Bubble Nucleation on a Substrate with Nonuniform Wettability. Langmuir, 2020, 36, 5336-5348.	3.5	14
42	A three dimensional coupled VOF and Level set (VOSET) method with and without phase change on general curvilinear grids. Chemical Engineering Science, 2020, 223, 115705.	3.8	17
43	Insights into the Effect of Spontaneous Fluid Imbibition on the Formation Mechanism of Fracture Networks in Brittle Shale: An Experimental Investigation. ACS Omega, 2020, 5, 8847-8857.	3.5	14
44	A Numerical Study on Hydraulic Fracturing Problems via the Proper Generalized Decomposition Method. CMES - Computer Modeling in Engineering and Sciences, 2020, 122, 703-720.	1.1	22
45	GPU-accelerated hydraulic simulations of large-scale natural gas pipeline networks based on a two-level parallel process. Oil and Gas Science and Technology, 2020, 75, 86.	1.4	6
46	Advances in Gaussian random field generation: a review. Computational Geosciences, 2019, 23, 1011-1047.	2.4	55
47	A coupled volume-of-fluid and level set method based on general curvilinear grids with accurate surface tension calculation. Journal of Computational Physics, 2019, 396, 799-818.	3.8	28
48	Migration behaviors of leaky dielectric droplets with electric and hydrodynamic forces. Physical Review E, 2019, 100, 033113.	2.1	6
49	Fast prediction of the replacement process of oil vapor in horizontal tank and its improved safety evaluation method. Chemical Engineering Research and Design, 2019, 122, 298-306.	5.6	4
50	An Efficiently Decoupled Implicit Method for Complex Natural Gas Pipeline Network Simulation. Energies, 2019, 12, 1516.	3.1	8
51	Experimental and numerical study on bubble dynamics and heat transfer during nucleate boiling of FC-72. International Journal of Heat and Mass Transfer, 2019, 139, 822-831.	4.8	18
52	Modeling and simulation of the gas-liquid separation process in an axial flow cyclone based on the Eulerian-Lagrangian approach and surface film model. Powder Technology, 2019, 353, 473-488.	4.2	31
53	Temperature drop and gelatinization characteristics of waxy crude oil in 1000â€ ⁻ m3 single and double-plate floating roof oil tanks during storage. International Journal of Heat and Mass Transfer, 2019, 136, 457-469.	4.8	13
54	Numerical investigation of the POD reduced-order model for fast predictions of two-phase flows in porous media. International Journal of Numerical Methods for Heat and Fluid Flow, 2019, 29, 4167-4204.	2.8	12

#	Article	IF	CITATIONS
55	Modern numerical methods and their applications in mechanical engineering. Advances in Mechanical Engineering, 2019, 11, 168781401988725.	1.6	1
56	Review of Molecular Simulation Method for Gas Adsorption/desorption and Diffusion in Shale Matrix. Journal of Thermal Science, 2019, 28, 1-16.	1.9	92
57	Parametric regression of a multiparameter thixotropic model for waxy crude oil based on multiobjective strategy. Journal of Petroleum Science and Engineering, 2019, 173, 287-297.	4.2	4
58	Direct numerical simulation of surfactant solution flow in the wideâ€rib rectangular grooved channel. AICHE Journal, 2018, 64, 2898-2912.	3.6	3
59	A pseudo point source model based on velocity coupled method for dilute particle-laden flow with dissipation scale particles. International Journal of Multiphase Flow, 2018, 103, 106-123.	3.4	1
60	Effects of Additives on the Morphology of Thiamine Nitrate: The Great Difference of Two Kinds of Similar Additives. Crystal Growth and Design, 2018, 18, 775-785.	3.0	31
61	Study on the Parametric Regression of a Multiparameter Thixotropic Model for Waxy Crude Oil. Energy & Fuels, 2018, 32, 5020-5032.	5.1	7
62	Experimental and numerical study on the heat transfer characteristics of waxy crude oil in a 100,000†m3 double-plate floating roof oil tank. Applied Thermal Engineering, 2018, 136, 335-348.	6.0	15
63	Numerical Simulation on the Dispersion of Natural Gas Releases from a Buried Pipeline. Heat Transfer Engineering, 2018, 39, 687-699.	1.9	4
64	A method for simulating the release of natural gas from the rupture of high-pressure pipelines in any terrain. Journal of Hazardous Materials, 2018, 342, 418-428.	12.4	40
65	Direct numerical simulation of turbulent flow over wideâ€rib rectangular grooves. Canadian Journal of Chemical Engineering, 2018, 96, 1207-1220.	1.7	3
66	Molecular dynamics simulation of bubble nucleation on nanostructure surface. International Journal of Heat and Mass Transfer, 2018, 118, 1143-1151.	4.8	61
67	Fast method for the hydraulic simulation of natural gas pipeline networks based on the divide-and-conquer approach. Journal of Natural Gas Science and Engineering, 2018, 50, 55-63.	4.4	31
68	A coupled volume-of-fluid and level set method based on multi-dimensional advection for unstructured triangular meshes. Chemical Engineering Science, 2018, 176, 560-579.	3.8	30
69	Numerical Analysis of Frozen Soil Around the Mohe–Daqing Crude Oil Pipeline with Thermosyphons. Heat Transfer Engineering, 2018, 39, 630-641.	1.9	8
70	BFC-POD-ROM Aided Fast Thermal Scheme Determination for China's Secondary Dong-Lin Crude Pipeline with Oils Batching Transportation. Energies, 2018, 11, 2666.	3.1	0
71	A Numerical Study on the Diversion Mechanisms of Fracture Networks in Tight Reservoirs with Frictional Natural Fractures. Energies, 2018, 11, 3035.	3.1	8
72	Nanoscale Study of Bubble Nucleation on a Cavity Substrate Using Molecular Dynamics Simulation. Langmuir, 2018, 34, 14234-14248.	3.5	51

#	Article	IF	CITATIONS
73	Bubble nucleation on various surfaces with inhomogeneous interface wettability based on molecular dynamics simulation. International Communications in Heat and Mass Transfer, 2018, 98, 135-142.	5.6	50
74	An N-parallel FENE-P constitutive model and its application in large-eddy simulation of viscoelastic turbulent drag-reducing flow. Journal of Computational Science, 2018, 29, 70-80.	2.9	2
75	A coupled volume of fluid and level set method based on analytic PLIC for unstructured quadrilateral grids. Numerical Heat Transfer, Part B: Fundamentals, 2018, 73, 189-205.	0.9	22
76	Study on the restart algorithm for a buried hot oil pipeline based on wavelet collocation method. International Journal of Heat and Mass Transfer, 2018, 125, 891-907.	4.8	23
77	Acceleration of Gas Reservoir Simulation Using Proper Orthogonal Decomposition. Geofluids, 2018, 2018, 2018, 1-15.	0.7	2
78	Effects of Surface Wettability on Rapid Boiling and Bubble Nucleation: A Molecular Dynamics Study. Nanoscale and Microscale Thermophysical Engineering, 2018, 22, 198-212.	2.6	27
79	Adaptive implicit finite difference method for natural gas pipeline transient flow. Oil and Gas Science and Technology, 2018, 73, 21.	1.4	9
80	LES Study on High Reynolds Turbulent Drag-Reducing Flow of Viscoelastic Fluids Based on Multiple Relaxation Times Constitutive Model and Mixed Subgrid-Scale Model. Lecture Notes in Computer Science, 2018, , 174-188.	1.3	1
81	Study on an N-Parallel FENE-P Constitutive Model Based on Multiple Relaxation Times for Viscoelastic Fluid. Lecture Notes in Computer Science, 2018, , 610-623.	1.3	1
82	Analysis of interphase forces and investigation of their effect on particle transverse motion in particle-laden channel turbulence. International Journal of Multiphase Flow, 2017, 88, 11-29.	3.4	9
83	Development of a VOF+LS+SPP method based on FLUENT for simulating bubble behaviors in the electric field. Numerical Heat Transfer, Part B: Fundamentals, 2017, 71, 186-201.	0.9	13
84	Further study on the thermal characteristic of a buried waxy crude oil pipeline during its cooling process after a shutdown. Numerical Heat Transfer; Part A: Applications, 2017, 71, 137-152.	2.1	13
85	A coupled volume-of-fluid and level set (VOSET) method based on remapping algorithm for unstructured triangular grids. International Journal of Heat and Mass Transfer, 2017, 111, 232-245.	4.8	29
86	A POD-Galerkin reduced-order model for isotropic viscoelastic turbulent flow. International Communications in Heat and Mass Transfer, 2017, 84, 121-133.	5.6	9
87	Numerical simulation of bubble dynamics in the gravitational and uniform electric fields. Numerical Heat Transfer; Part A: Applications, 2017, 71, 1034-1051.	2.1	11
88	A VOSET method combined with IDEAL algorithm for 3D two-phase flows with large density and viscosity ratio. International Journal of Heat and Mass Transfer, 2017, 114, 155-168.	4.8	28
89	POD reduced-order model for steady laminar flow based on the body-fitted coordinate. Numerical Heat Transfer, Part B: Fundamentals, 2017, 71, 560-573.	0.9	2
90	Solution-Mediated Phase Transformation of Argatroban: Ternary Phase Diagram, Rate-Determining Step, and Transformation Kinetics. Industrial & Engineering Chemistry Research, 2017, 56, 4539-4548.	3.7	18

#	Article	IF	CITATIONS
91	A new general model for phase-change heat transfer of waxy crude oil during the ambient-induced cooling process. Numerical Heat Transfer; Part A: Applications, 2017, 71, 511-527.	2.1	28
92	Numerical investigation of melting of waxy crude oil in an oil tank. Applied Thermal Engineering, 2017, 115, 81-90.	6.0	19
93	A novel high drug loading mussel-inspired polydopamine hybrid nanoparticle as a pH-sensitive vehicle for drug delivery. International Journal of Pharmaceutics, 2017, 533, 73-83.	5.2	18
94	Implementation of the IDEAL algorithm for complex steady-state incompressible fluid flow problems in OpenFOAM. International Communications in Heat and Mass Transfer, 2017, 88, 63-73.	5.6	11
95	POD-Galerkin reduced-order model for viscoelastic turbulent channel flow. Numerical Heat Transfer, Part B: Fundamentals, 2017, 72, 268-283.	0.9	2
96	A Fast Algorithm to Simulate Droplet Motions in Oil/Water Two Phase Flow. Procedia Computer Science, 2017, 108, 1953-1962.	2.0	3
97	Similarity Conversion of Centrifugal Natural Gas Compressors Based on Predictor-Corrector. Procedia Computer Science, 2017, 108, 1973-1981.	2.0	4
98	Numerical study on the temperature drop characteristics of waxy crude oil in a double-plate floating roof oil tank. Applied Thermal Engineering, 2017, 124, 560-570.	6.0	11
99	GPU Acceleration of CFD Algorithm: HSMAC and SIMPLE. Procedia Computer Science, 2017, 108, 1982-1989.	2.0	11
100	A mixed subgrid-scale model based on ICSM and TADM for LES of surfactant-induced drag-reduction in turbulent channel flow. Applied Thermal Engineering, 2017, 115, 1322-1329.	6.0	4
101	Acceleration of Gas Flow Simulations in Dual-Continuum Porous Media Based on the Mass-Conservation POD Method. Energies, 2017, 10, 1380.	3.1	12
102	Performance analyses of the IDEAL algorithm combined with the fuzzy control method for 3D incompressible fluid flow and heat transfer problems. Numerical Heat Transfer, Part B: Fundamentals, 2016, 69, 432-446.	0.9	3
103	Direct Numerical Study on Effect of Interparticle Collision in Particle-Laden Turbulence. AIAA Journal, 2016, 54, 3212-3222.	2.6	3
104	Oiling out and Polymorphism Control of Pyraclostrobin in Cooling Crystallization. Industrial & Engineering Chemistry Research, 2016, 55, 11631-11637.	3.7	27
105	Numerical simulation of fluid flow and heat transfer processes 2015. Advances in Mechanical Engineering, 2016, 8, 168781401666461.	1.6	0
106	POD-Galerkin Model for Incompressible Single-Phase Flow in Porous Media. Open Physics, 2016, 14, 588-601.	1.7	6
107	Analytical solutions to dissolved contaminant plume evolution with source depletion during carbon dioxide storage. Journal of Contaminant Hydrology, 2016, 189, 1-11.	3.3	3

Measurement and Correlation of Solubility of Cefathiamidine in Water + (Acetone, Ethanol, or) Tj ETQq000 rgBT /Overlock 10 Tf 50 62

#	Article	IF	CITATIONS
109	Study on computational efficiency of composite schemes for convection-diffusion equations using single-grid and multigrid methods. Journal of Thermal Science and Technology, 2015, 10, JTST0009-JTST0009.	1.1	5
110	Numerical Simulation of Fluid Flow and Heat Transfer Processes 2014. Advances in Mechanical Engineering, 2015, 7, 645351.	1.6	3
111	A novel finite volume method for cylindrical heat conduction problems. International Communications in Heat and Mass Transfer, 2015, 63, 8-16.	5.6	4
112	Orthogonal test design to optimize products and to characterize heavy oil via biomass hydrothermal treatment. Energy, 2015, 88, 139-148.	8.8	15
113	POD reduced-order model for steady natural convection based on a body-fitted coordinate. International Communications in Heat and Mass Transfer, 2015, 68, 104-113.	5.6	9
114	Fast thermal simulation of a heated crude oil pipeline with a BFC-Based POD reduced-order model. Applied Thermal Engineering, 2015, 88, 217-229.	6.0	27
115	Comparison study on the accuracy and efficiency of the four forms of hydraulic equation of a natural gas pipeline based on linearized solution. Journal of Natural Gas Science and Engineering, 2015, 22, 235-244.	4.4	24
116	Study on a BFC-Based POD-Galerkin Reduced-Order Model for the Unsteady-State Variable-Property Heat Transfer Problem. Numerical Heat Transfer, Part B: Fundamentals, 2014, 65, 256-281.	0.9	14
117	Flux conservation principle on construction of residual restriction operators for multigrid method. International Communications in Heat and Mass Transfer, 2014, 54, 60-66.	5.6	5
118	A new two-dimensional hybrid grid generation method based on improved hole cutting. International Communications in Heat and Mass Transfer, 2014, 54, 103-114.	5.6	3
119	Study on a BFC-based POD-Galerkin ROM for the steady-state heat transfer problem. International Journal of Heat and Mass Transfer, 2014, 69, 1-5.	4.8	11
120	Fast Calculation of the Soil Temperature Field around a Buried Oil Pipeline using a Body-Fitted Coordinates-Based POD-Galerkin Reduced-Order Model. Numerical Heat Transfer; Part A: Applications, 2013, 63, 776-794.	2.1	16
121	The Discretization Method for Convention-diffusion Equations in Two-dimensional Cylindrical Coordinate Systems based on Unstructured Grids. Procedia Computer Science, 2013, 18, 2117-2126.	2.0	1
122	An unstructured grids-based discretization method for convection–diffusion equations in the two-dimensional cylindrical coordinate systems. International Journal of Heat and Mass Transfer, 2013, 67, 581-592.	4.8	2
123	An Improved Paving Method of Automatic Quadrilateral Mesh Generation. Numerical Heat Transfer, Part B: Fundamentals, 2013, 64, 218-238.	0.9	3
124	Advances in rheology and flow assurance studies of waxy crude. Petroleum Science, 2013, 10, 538-547.	4.9	29
125	Comparison Study on the Performances of Finite Volume Method and Finite Difference Method. Journal of Applied Mathematics, 2013, 2013, 1-10.	0.9	4
126	Numerical Simulation of Fluid Flow and Heat Transfer Processes. Advances in Mechanical Engineering, 2013, 5, 497950.	1.6	3

#	Article	IF	CITATIONS
127	Comparison Study on Linear Interpolation and Cubic B-Spline Interpolation Proper Orthogonal Decomposition Methods. Advances in Mechanical Engineering, 2013, 5, 561875.	1.6	2
128	A finite volume method for cylindrical heat conduction problems based on local analytical solution. International Journal of Heat and Mass Transfer, 2012, 55, 5570-5582.	4.8	33
129	Comparative studies on accuracy and convergence rate between the cell-centered scheme and the cell-vertex scheme for triangular grids. International Journal of Heat and Mass Transfer, 2012, 55, 8051-8060.	4.8	5
130	A comparative study of POD interpolation and POD projection methods for fast and accurate prediction of heat transfer problems. International Journal of Heat and Mass Transfer, 2012, 55, 4827-4836.	4.8	48
131	POD and wavelet analyses on the flow structures of a polymer drag-reducing flow based on DNS data. International Journal of Heat and Mass Transfer, 2012, 55, 4849-4861.	4.8	23
132	Sharp Front Capturing Method for Carbon Dioxide Plume Propagation during Injection into a Deep Confined Aquifer. Energy & Fuels, 2010, 24, 1431-1440.	5.1	20
133	Experimental study of drag-reduction mechanism for a dilute surfactant solution flow. International Journal of Heat and Mass Transfer, 2008, 51, 835-843.	4.8	105
134	Effects of Transport on Reactions in Homogeneous Tubular Flow. Industrial & Engineering Chemistry Research, 2006, 45, 8583-8593.	3.7	12
135	A collocated finite volume method for incompressible flow on unstructured meshes. Progress in Computational Fluid Dynamics, 2005, 5, 181.	0.2	3
136	DNS of fully developed turbulent heat transfer of a viscoelastic drag-reducing flow. International Journal of Heat and Mass Transfer, 2005, 48, 4569-4578.	4.8	26
137	Numerical and experimental investigation of turbulent characteristics in a drag-reducing flow with surfactant additives. International Journal of Heat and Fluid Flow, 2004, 25, 961-974.	2.4	105
138	Direct numerical simulation of viscoelastic drag-reducing flow: a faithful finite difference method. Journal of Non-Newtonian Fluid Mechanics, 2004, 116, 431-466.	2.4	112