

Kenneth T Christensen

List of Publications by Year in descending order

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107
papers

4,522
citations

117625

34
h-index

102487

66
g-index

111
all docs

111
docs citations

111
times ranked

3227
citing authors

#	ARTICLE	IF	CITATIONS
1	Analysis and interpretation of instantaneous turbulent velocity fields. <i>Experiments in Fluids</i> , 2000, 29, 275-290.	2.4	680
2	Statistical evidence of hairpin vortex packets in wall turbulence. <i>Journal of Fluid Mechanics</i> , 2001, 431, 433-443.	3.4	344
3	Population trends of spanwise vortices in wall turbulence. <i>Journal of Fluid Mechanics</i> , 2006, 568, 55.	3.4	211
4	Spatial structure of a turbulent boundary layer with irregular surface roughness. <i>Journal of Fluid Mechanics</i> , 2010, 655, 380-418.	3.4	174
5	The influence of peak-locking errors on turbulence statistics computed from PIV ensembles. <i>Experiments in Fluids</i> , 2004, 36, 484-497.	2.4	161
6	Characterization of immiscible fluid displacement processes with various capillary numbers and viscosity ratios in 3D natural sandstone. <i>Advances in Water Resources</i> , 2016, 95, 3-15.	3.8	145
7	Numerical and experimental study of mechanisms responsible for turbulent secondary flows in boundary layer flows over spanwise heterogeneous roughness. <i>Journal of Fluid Mechanics</i> , 2015, 768, 316-347.	3.4	135
8	High-throughput Printing via Microvascular Multinozzle Arrays. <i>Advanced Materials</i> , 2013, 25, 96-102.	21.0	132
9	Anderson localization in one-dimensional randomly disordered optical systems that are periodic on average. <i>Physical Review B</i> , 1993, 47, 13120-13125.	3.2	130
10	Outer-layer similarity in the presence of a practical rough-wall topography. <i>Physics of Fluids</i> , 2007, 19, 085108.	4.0	129
11	Observations of turbulent secondary flows in a rough-wall boundary layer. <i>Journal of Fluid Mechanics</i> , 2014, 748, .	3.4	114
12	Microstreaming effects on particle concentration in an ultrasonic standing wave. <i>AIChE Journal</i> , 2003, 49, 2773-2782.	3.6	106
13	Two-color laser-induced fluorescent thermometry for microfluidic systems. <i>Measurement Science and Technology</i> , 2009, 20, 015401.	2.6	98
14	Turbulent boundary layer flow over transverse aerodynamic roughness transitions: Induced mixing and flow characterization. <i>Physics of Fluids</i> , 2014, 26, .	4.0	86
15	Cross-stream stereoscopic particle image velocimetry of a modified turbulent boundary layer over directional surface pattern. <i>Journal of Fluid Mechanics</i> , 2017, 813, 412-435.	3.4	79
16	Measurement of instantaneous Eulerian acceleration fields by particle image accelerometry: method and accuracy. <i>Experiments in Fluids</i> , 2002, 33, 759-769.	2.4	77
17	Low-order representations of irregular surface roughness and their impact on a turbulent boundary layer. <i>Physics of Fluids</i> , 2010, 22, 015106.	4.0	76
18	A phase-field lattice Boltzmann model for simulating multiphase flows in porous media: Application and comparison to experiments of CO ₂ sequestration at pore scale. <i>Advances in Water Resources</i> , 2018, 114, 119-134.	3.8	68

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19	Observation of yeast cell movement and aggregation in a small-scale MHz-ultrasonic standing wave field. <i>Bioseparation</i> , 2000, 9, 329-341.	0.7	66
20	Quantifying the flow dynamics of supercritical CO ₂ water displacement in a 2D porous micromodel using fluorescent microscopy and microscopic PIV. <i>Advances in Water Resources</i> , 2016, 95, 352-368.	3.8	62
21	Wall-parallel stereo particle-image velocimetry measurements in the roughness sublayer of turbulent flow overlying highly irregular roughness. <i>Physics of Fluids</i> , 2013, 25, .	4.0	61
22	Lattice Boltzmann simulations of liquid CO ₂ displacing water in a 2D heterogeneous micromodel at reservoir pressure conditions. <i>Journal of Contaminant Hydrology</i> , 2018, 212, 14-27.	3.3	61
23	A Kalman tracker for super-resolution PIV. <i>Experiments in Fluids</i> , 2000, 29, S034-S041.	2.4	56
24	Spatial signatures of retrograde spanwise vortices in wall turbulence. <i>Journal of Fluid Mechanics</i> , 2007, 574, 155-167.	3.4	56
25	Particle-image velocimetry measurements of flow over interacting barchan dunes. <i>Experiments in Fluids</i> , 2012, 52, 809-829.	2.4	50
26	Inner outer interactions in a turbulent boundary layer overlying complex roughness. <i>Physical Review Fluids</i> , 2017, 2, .	2.5	49
27	The role of coherent structures in subgrid-scale energy transfer within the log layer of wall turbulence. <i>Physics of Fluids</i> , 2006, 18, 065104.	4.0	42
28	Micro PIV measurements of multiphase flow of water and liquid CO ₂ in 2D heterogeneous porous micromodels. <i>Water Resources Research</i> , 2017, 53, 6178-6196.	4.2	39
29	A microscopic particle image velocimetry method for studying the dynamics of immiscible liquid liquid interactions in a porous micromodel. <i>Microfluidics and Nanofluidics</i> , 2015, 18, 1391-1406.	2.2	38
30	Reynolds-Stress Enhancement Associated with a Short Fetch of Roughness in Wall Turbulence. <i>AIAA Journal</i> , 2006, 44, 3098-3106.	2.6	37
31	A methodology for velocity field measurement in multiphase high pressure flow of CO ₂ and water in micromodels. <i>Water Resources Research</i> , 2015, 51, 3017-3029.	4.2	37
32	Turbulence Links Momentum and Solute Exchange in Coarse Grained Streambeds. <i>Water Resources Research</i> , 2018, 54, 3225-3242.	4.2	36
33	The impact of surface roughness on flow through a rectangular microchannel from the laminar to turbulent regimes. <i>Microfluidics and Nanofluidics</i> , 2010, 9, 95-121.	2.2	35
34	Characterization of Active Cooling and Flow Distribution in Microvascular Polymers. <i>Journal of Intelligent Material Systems and Structures</i> , 2010, 21, 1147-1156.	2.5	34
35	Experimental evidence of amplitude modulation in permeable-wall turbulence. <i>Journal of Fluid Mechanics</i> , 2020, 887, .	3.4	34
36	Direct Flow Visualization of Colloidal Gels in Microfluidic Channels. <i>Langmuir</i> , 2007, 23, 8726-8731.	3.5	33

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37	The velocity and acceleration signatures of small-scale vortices in turbulent channel flow. <i>Journal of Turbulence</i> , 2002, 3, N23.	1.4	29
38	Microscopic particle image velocimetry measurements of transition to turbulence in microscale capillaries. <i>Experiments in Fluids</i> , 2007, 43, 1-16.	2.4	29
39	Multi-physics optimization of three-dimensional microvascular polymeric components. <i>Journal of Computational Physics</i> , 2013, 233, 132-147.	3.8	29
40	Turbulent Flow Structure Associated With Collision Between Laterally Offset, Fixed Bed Barchan Dunes. <i>Journal of Geophysical Research F: Earth Surface</i> , 2018, 123, 2157-2188.	2.8	29
41	Vortex organization in a turbulent boundary layer overlying sparse roughness elements. <i>Journal of Hydraulic Research/De Recherches Hydrauliques</i> , 2012, 50, 465-481.	1.7	27
42	Laminar boundary layer on an impulsively started rotating sphere. <i>Physics of Fluids</i> , 1979, 22, 1.	1.4	26
43	Large eddy simulation of interacting barchan dunes in a steady, unidirectional flow. <i>Journal of Geophysical Research F: Earth Surface</i> , 2013, 118, 2089-2104.	2.8	26
44	Experimental study of turbulent flow over and within cubically packed walls of spheres: Effects of topography, permeability and wall thickness. <i>International Journal of Heat and Fluid Flow</i> , 2018, 73, 16-29.	2.4	26
45	Intermediate Reynolds number flat plate boundary layer flows over catalytic surfaces for micro-combustion applications. <i>Proceedings of the Combustion Institute</i> , 2009, 32, 3035-3042.	3.9	23
46	Statistical and structural similarities between micro- and macroscale wall turbulence. <i>Microfluidics and Nanofluidics</i> , 2006, 3, 89-100.	2.2	22
47	Observations of meandering superstructures in the roughness sublayer of a turbulent boundary layer. <i>International Journal of Heat and Fluid Flow</i> , 2014, 48, 43-51.	2.4	22
48	Modelling smooth- and transitionally rough-wall turbulent channel flow by leveraging inner-outer interactions and principal component analysis. <i>Journal of Fluid Mechanics</i> , 2019, 863, 407-453.	3.4	22
49	Spatial Scales of Turbulent Flow Structures Associated With Interacting Barchan Dunes. <i>Journal of Geophysical Research F: Earth Surface</i> , 2019, 124, 1175-1200.	2.8	22
50	Volumetric Velocity Measurements in the Wake of a Hemispherical Roughness Element. <i>AIAA Journal</i> , 2017, 55, 2158-2173.	2.6	20
51	High-Speed Quantification of Pore-Scale Multiphase Flow of Water and Supercritical CO ₂ in Heterogeneous Porous Micromodels: Flow Regimes and Interface Dynamics. <i>Water Resources Research</i> , 2019, 55, 3758-3779.	4.2	20
52	Non-intrusive measurements of convective heat transfer in smooth- and rough-wall microchannels: laminar flow. <i>Experiments in Fluids</i> , 2010, 49, 1021-1037.	2.4	19
53	Robust suppression of background reflections in PIV images. <i>Measurement Science and Technology</i> , 2013, 24, 027003.	2.6	19
54	Secondary Flows and Vortex Structure Associated With Isolated and Interacting Barchan Dunes. <i>Journal of Geophysical Research F: Earth Surface</i> , 2020, 125, e2019JF005257.	2.8	18

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55	Visualization and characterization of small-scale spanwise vortices in turbulent channel flow. <i>Journal of Visualization</i> , 2005, 8, 177-185.	1.8	17
56	Uncertainty quantification in particle image velocimetry. <i>Measurement Science and Technology</i> , 2015, 26, 070201.	2.6	17
57	Numerical and experimental study of flow over stages of an offset merger dune interaction. <i>Computers and Fluids</i> , 2017, 158, 72-83.	2.5	16
58	A study of wall shear stress in turbulent channel flow with hemispherical roughness. <i>Journal of Fluid Mechanics</i> , 2020, 885, .	3.4	15
59	Flow Interactions Between Streamwise-Aligned Tandem Cylinders in Turbulent Channel Flow. <i>AIAA Journal</i> , 2018, 56, 1421-1433.	2.6	14
60	Modeling Cumulative Surface Damage and Assessing its Impact on Wall Turbulence. <i>AIAA Journal</i> , 2011, 49, 2305-2320.	2.6	13
61	Surrogate immiscible liquid pairs with refractive indexes matchable over a wide range of density and viscosity ratios. <i>Physics of Fluids</i> , 2015, 27, .	4.0	13
62	PIV measurements of turbulent flow overlying large, cubic- and hexagonally-packed hemisphere arrays. <i>Journal of Hydraulic Research/De Recherches Hydrauliques</i> , 2020, 58, 363-383.	1.7	13
63	Investigation of inner-outer interactions in a turbulent boundary layer using high-speed particle image velocimetry. <i>Physical Review Fluids</i> , 2019, 4, .	2.5	13
64	Turbulent Flow over Low-Order Models of Highly Irregular Surface Roughness. <i>AIAA Journal</i> , 2009, 47, 1288-1299.	2.6	12
65	The study of heterogeneous two-phase flow around small-scale heterogeneity in porous sandstone by measured elastic wave velocities and lattice Boltzmann method simulation. <i>Journal of Geophysical Research: Solid Earth</i> , 2014, 119, 7564-7577.	3.4	12
66	Structure of Turbulent Channel Flow Perturbed by a Wall-Mounted Cylindrical Element. <i>AIAA Journal</i> , 2015, 53, 1277-1286.	2.6	12
67	Structural characteristics of transition to turbulence in microscale capillaries. <i>Physics of Fluids</i> , 2009, 21, 034104.	4.0	11
68	A versatile refractive-index-matched flow facility for studies of complex flow systems across scientific disciplines. , 2012, , .		11
69	Characteristics of large-scale and superstructure motions in a turbulent boundary layer overlying complex roughness. <i>Journal of Turbulence</i> , 2019, 20, 147-173.	1.4	10
70	A particle-based image segmentation method for phase separation and interface detection in PIV images of immiscible multiphase flow. <i>Measurement Science and Technology</i> , 2021, 32, 095208.	2.6	10
71	Novel Environment Enables PIV Measurements of Turbulent Flow around and within Complex Topographies. <i>Journal of Hydraulic Engineering</i> , 2020, 146, 04020033.	1.5	9
72	Review of Particle Image Velocimetry: A Practical Guide, Second Edition. <i>AIAA Journal</i> , 2008, 46, 2974-2975.	2.6	8

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73	Inkjet Printing: High-Throughput Printing via Microvascular Multinozzle Arrays (Adv. Mater. 1/2013). Advanced Materials, 2013, 25, 2-2.	21.0	8
74	A topological evaluation procedure to assess the integrity of a PIV vector field. Measurement Science and Technology, 2016, 27, 094007.	2.6	8
75	Particle-Image Velocimetry Study of a Pediatric Ventricular Assist Device. Journal of Biomechanical Engineering, 2010, 132, 071004.	1.3	6
76	Non-intrusive measurements of transitional and turbulent convective heat transfer in a rectangular microchannel. Journal of Micromechanics and Microengineering, 2011, 21, 085001.	2.6	6
77	PIV experiments in rough-wall, laminar-to-turbulent, oscillatory boundary-layer flows. Experiments in Fluids, 2014, 55, 1.	2.4	6
78	Experimental investigation of gaseous reactive flows around catalytically coated micro-wires. Proceedings of the Combustion Institute, 2009, 32, 3043-3050.	3.9	4
79	Coherent structures in oscillatory flows within the laminar-to-turbulent transition regime for smooth and rough walls. Journal of Hydraulic Research/De Recherches Hydrauliques, 2016, 54, 502-515.	1.7	4
80	Seismic and strain detection of heterogeneous spatial distribution of CO ₂ in high-permeable sandstone. International Journal of Greenhouse Gas Control, 2018, 72, 65-73.	4.6	4
81	Nanoscale detection of metastable states in porous and granular media. Journal of Applied Physics, 2020, 127, 024901.	2.5	4
82	The Effect of Biofilms on Turbulent Flow Over Permeable Beds. Water Resources Research, 2021, 57, e2019WR026032.	4.2	4
83	Unsteady dynamics of turbulent flow in the wakes of barchan dunes modulated by overlying boundary-layer structure. Journal of Fluid Mechanics, 2021, 920, .	3.4	4
84	Structural characteristics of a heated jet in cross-flow emanating from a raised, circular stack. Experiments in Fluids, 2013, 54, 1.	2.4	3
85	Flow Past Mound-Bearing Impact Craters: An Experimental Study. Fluids, 2021, 6, 216.	1.7	3
86	Topographic perturbation of turbulent boundary layers by low-angle, early-stage aeolian dunes. Earth Surface Processes and Landforms, 2022, 47, 1439-1454.	2.5	3
87	Natural advection from a microcantilever heat source. Applied Physics Letters, 2010, 96, 063113.	3.3	2
88	Turbulence Amplitude Modulation in an Externally Forced, Subsonic Turbulent Boundary Layer. , 2016, , .		2
89	11th International Symposium on Particle Image Velocimetry (PIV 2015). Measurement Science and Technology, 2017, 28, 010103.	2.6	2
90	Pore-Scale Dynamics of Liquid CO ₂ -Water Displacement in 2D Axisymmetric Porous Micromodels Under Strong Drainage and Weak Imbibition Conditions: High-Speed PIV Measurements. Frontiers in Water, 2021, 3, .	2.3	2

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91	A Methodology for Studying the Hydroelastic Response of Submerged Flexible Vegetation. Water Resources Research, 2022, 58, .	4.2	2
92	Muelleret al. reply. Physical Review Letters, 1992, 69, 2454-2454.	7.8	1
93	Polymer-induced turbulence modifications in an impinging jet. Experiments in Fluids, 2012, 52, 1237-1260.	2.4	1
94	Fluorescent Thermometry. , 2008, , 750-759.		1
95	Announcing the 2021 Measurement Science and Technology Outstanding Paper Awards. Measurement Science and Technology, 2022, 33, 070201.	2.6	1
96	Review of Optical Metrology for Fluids, Combustion and Solids. AIAA Journal, 2004, 42, 1054-1055.	2.6	0
97	Development of a Two-Dye LIF Technique for Measuring Fluid Temperature Fields in Microfluidic Devices. , 2006, , 535.		0
98	Experimental Study of Two-phase Fluid Flow in the Porous Sandstone by P-wave Velocity and Electrical Impedance Measurement. Energy Procedia, 2017, 114, 4948-4953.	1.8	0
99	Incoming Editor-in-Chief. Measurement Science and Technology, 2017, 28, 010102.	2.6	0
100	12th International Symposium on Particle Image Velocimetry (PIV 2017). Measurement Science and Technology, 2019, 30, 020102.	2.6	0
101	An Investigation into a Pressure Anomaly during Synthetic Jet Operation. , 2019, , .		0
102	MST Outgoing EiC Editorial. Measurement Science and Technology, 0, , .	2.6	0
103	Effect of a Roughness Transition on Turbulent Structures in the Outer Layer. , 2003, , 23-28.		0
104	Direct Assessment of the Accuracy of Stereo PIV in Turbulent Channel Flow. , 2004, , .		0
105	Temperature Measurement, Methods. , 2013, , 1-17.		0
106	Fluorescent Thermometry. , 2014, , 1-15.		0
107	Temperature Measurement, Methods. , 2008, , 1994-2005.		0