Kenneth T Christensen

List of Publications by Year
in descending order

107	4,522	117453	102304
papers	citations	34 h-index	66 g-index

111	111	111	3227
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Analysis and interpretation of instantaneous turbulent velocity fields. Experiments in Fluids, 2000, 29, 275-290.	1.1	680
2	Statistical evidence of hairpin vortex packets in wall turbulence. Journal of Fluid Mechanics, 2001, 431, 433-443.	1.4	344
3	Population trends of spanwise vortices in wall turbulence. Journal of Fluid Mechanics, 2006, 568, 55.	1.4	211
4	Spatial structure of a turbulent boundary layer with irregular surface roughness. Journal of Fluid Mechanics, 2010, 655, 380-418.	1.4	174
5	The influence of peak-locking errors on turbulence statistics computed from PIV ensembles. Experiments in Fluids, 2004, 36, 484-497.	1.1	161
6	Characterization of immiscible fluid displacement processes with various capillary numbers and viscosity ratios in 3D natural sandstone. Advances in Water Resources, 2016, 95, 3-15.	1.7	145
7	Numerical and experimental study of mechanisms responsible for turbulent secondary flows in boundary layer flows over spanwise heterogeneous roughness. Journal of Fluid Mechanics, 2015, 768, 316-347.	1.4	135
8	Highâ€Throughput Printing via Microvascular Multinozzle Arrays. Advanced Materials, 2013, 25, 96-102.	11.1	132
9	Anderson localization in one-dimensional randomly disordered optical systems that are periodic on average. Physical Review B, 1993, 47, 13120-13125.	1.1	130
10	Outer-layer similarity in the presence of a practical rough-wall topography. Physics of Fluids, 2007, 19, 085108.	1.6	129
11	Observations of turbulent secondary flows in a rough-wall boundary layer. Journal of Fluid Mechanics, 2014, 748, .	1.4	114
12	Microstreaming effects on particle concentration in an ultrasonic standing wave. AICHE Journal, 2003, 49, 2773-2782.	1.8	106
13	Two-color laser-induced fluorescent thermometry for microfluidic systems. Measurement Science and Technology, 2009, 20, 015401.	1.4	98
14	Turbulent boundary layer flow over transverse aerodynamic roughness transitions: Induced mixing and flow characterization. Physics of Fluids, 2014, 26, .	1.6	86
15	Cross-stream stereoscopic particle image velocimetry of a modified turbulent boundary layer over directional surfaceÂpattern. Journal of Fluid Mechanics, 2017, 813, 412-435.	1.4	79
16	Measurement of instantaneous Eulerian acceleration fields by particle image accelerometry: method and accuracy. Experiments in Fluids, 2002, 33, 759-769.	1.1	77
17	Low-order representations of irregular surface roughness and their impact on a turbulent boundary layer. Physics of Fluids, 2010, 22, 015106.	1.6	76
18	A phase-field lattice Boltzmann model for simulating multiphase flows in porous media: Application and comparison to experiments of CO2 sequestration at pore scale. Advances in Water Resources, 2018, 114, 119-134.	1.7	68

#	Article	IF	Citations
19	Observation of yeast cell movement and aggregation in a small-scale MHz-ultrasonic standing wave field. Bioseparation, 2000, 9, 329-341.	0.7	66
20	Quantifying the flow dynamics of supercritical CO2â€“water displacement in a 2D porous micromodel using fluorescent microscopy and microscopic PIV. Advances in Water Resources, 2016, 95, 352-368.	1.7	62
21	Wall-parallel stereo particle-image velocimetry measurements in the roughness sublayer of turbulent flow overlying highly irregular roughness. Physics of Fluids, 2013, 25, .	1.6	61
22	Lattice Boltzmann simulations of liquid CO2 displacing water in a 2D heterogeneous micromodel at reservoir pressure conditions. Journal of Contaminant Hydrology, 2018, 212, 14-27.	1.6	61
23	A Kalman tracker for super-resolution PIV. Experiments in Fluids, 2000, 29, S034-S041.	1.1	56
24	Spatial signatures of retrograde spanwise vortices in wall turbulence. Journal of Fluid Mechanics, 2007, 574, 155-167.	1.4	56
25	Particle-image velocimetry measurements of flow over interacting barchan dunes. Experiments in Fluids, 2012, 52, 809-829.	1.1	50
26	Innerâ€“outer interactions in a turbulent boundary layer overlying complex roughness. Physical Review Fluids, 2017, 2, .	1.0	49
27	The role of coherent structures in subgrid-scale energy transfer within the log layer of wall turbulence. Physics of Fluids, 2006, 18, 065104.	1.6	42
28	Microâ€<scp>PIV</scp> measurements of multiphase flow of water and liquid <scp>CO</scp>₂ in 2â€<scp>D</scp> heterogeneous porous micromodels. Water Resources Research, 2017, 53, 6178-6196.	1.7	39
29	A microscopic particle image velocimetry method for studying the dynamics of immiscible liquidâ€“liquid interactions in a porous micromodel. Microfluidics and Nanofluidics, 2015, 18, 1391-1406.	1.0	38
30	Reynolds-Stress Enhancement Associated with a Short Fetch of Roughness in Wall Turbulence. AIAA Journal, 2006, 44, 3098-3106.	1.5	37
31	A methodology for velocity field measurement in multiphase highâ€pressure flow of CO₂ and water in micromodels. Water Resources Research, 2015, 51, 3017-3029.	1.7	37
32	Turbulence Links Momentum and Solute Exchange in Coarseâ€Grained Streambeds. Water Resources Research, 2018, 54, 3225-3242.	1.7	36
33	The impact of surface roughness on flow through a rectangular microchannel from the laminar to turbulent regimes. Microfluidics and Nanofluidics, 2010, 9, 95-121.	1.0	35
34	Characterization of Active Cooling and Flow Distribution in Microvascular Polymers. Journal of Intelligent Material Systems and Structures, 2010, 21, 1147-1156.	1.4	34
35	Experimental evidence of amplitude modulation in permeable-wall turbulence. Journal of Fluid Mechanics, 2020, 887, .	1.4	34
36	Direct Flow Visualization of Colloidal Gels in Microfluidic Channels. Langmuir, 2007, 23, 8726-8731.	1.6	33

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37	The velocity and acceleration signatures of small-scale vortices in turbulent channel flow. Journal of Turbulence, 2002, 3, N23.	0.5	29
38	Microscopic particle image velocimetry measurements of transition to turbulence in microscale capillaries. Experiments in Fluids, 2007, 43, 1-16.	1.1	29
39	Multi-physics optimization of three-dimensional microvascular polymeric components. Journal of Computational Physics, 2013, 233, 132-147.	1.9	29
40	Turbulent Flow Structure Associated With Collision Between Laterally Offset, Fixedâ€Bed Barchan Dunes. Journal of Geophysical Research F: Earth Surface, 2018, 123, 2157-2188.	1.0	29
41	Vortex organization in a turbulent boundary layer overlying sparse roughness elements. Journal of Hydraulic Research/De Recherches Hydrauliques, 2012, 50, 465-481.	0.7	27
42	Laminar boundary layer on an impulsively started rotating sphere. Physics of Fluids, 1979, 22, 1.	1.4	26
43	Large eddy simulation of interacting barchan dunes in a steady, unidirectional flow. Journal of Geophysical Research F: Earth Surface, 2013, 118, 2089-2104.	1.0	26
44	Experimental study of turbulent flow over and within cubically packed walls of spheres: Effects of topography, permeability and wall thickness. International Journal of Heat and Fluid Flow, 2018, 73, 16-29.	1.1	26
45	Intermediate Reynolds number flat plate boundary layer flows over catalytic surfaces for â€œmicroâ€•combustion applications. Proceedings of the Combustion Institute, 2009, 32, 3035-3042.	2.4	23
46	Statistical and structural similarities between micro- and macroscale wall turbulence. Microfluidics and Nanofluidics, 2006, 3, 89-100.	1.0	22
47	Observations of meandering superstructures in the roughness sublayer of a turbulent boundary layer. International Journal of Heat and Fluid Flow, 2014, 48, 43-51.	1.1	22
48	Modelling smooth- and transitionally rough-wall turbulent channel flow by leveraging innerâ€“outer interactions and principal component analysis. Journal of Fluid Mechanics, 2019, 863, 407-453.	1.4	22
49	Spatial Scales of Turbulent Flow Structures Associated With Interacting Barchan Dunes. Journal of Geophysical Research F: Earth Surface, 2019, 124, 1175-1200.	1.0	22
50	Volumetric Velocity Measurements in the Wake of a Hemispherical Roughness Element. AIAA Journal, 2017, 55, 2158-2173.	1.5	20
51	Highâ€Speed Quantification of Poreâ€Scale Multiphase Flow of Water and Supercritical CO 2 in 2â€D Heterogeneous Porous Micromodels: Flow Regimes and Interface Dynamics. Water Resources Research, 2019, 55, 3758-3779.	1.7	20
52	Non-intrusive measurements of convective heat transfer in smooth- and rough-wall microchannels: laminar flow. Experiments in Fluids, 2010, 49, 1021-1037.	1.1	19
53	Robust suppression of background reflections in PIV images. Measurement Science and Technology, 2013, 24, 027003.	1.4	19
54	Secondary Flows and Vortex Structure Associated With Isolated and Interacting Barchan Dunes. Journal of Geophysical Research F: Earth Surface, 2020, 125, e2019JF005257.	1.0	18

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55	Visualization and characterization of small-scale spanwise vortices in turbulent channel flow. Journal of Visualization, 2005, 8, 177-185.	1.1	17
56	Uncertainty quantification in particle image velocimetry. Measurement Science and Technology, 2015, 26, 070201.	1.4	17
57	Numerical and experimental study of flow over stages of an offset merger dune interaction. Computers and Fluids, 2017, 158, 72-83.	1.3	16
58	A study of wall shear stress in turbulent channel flow with hemispherical roughness. Journal of Fluid Mechanics, 2020, 885, .	1.4	15
59	Flow Interactions Between Streamwise-Aligned Tandem Cylinders in Turbulent Channel Flow. AIAA Journal, 2018, 56, 1421-1433.	1.5	14
60	Modeling Cumulative Surface Damage and Assessing its Impact on Wall Turbulence. AIAA Journal, 2011, 49, 2305-2320.	1.5	13
61	Surrogate immiscible liquid pairs with refractive indexes matchable over a wide range of density and viscosity ratios. Physics of Fluids, 2015, 27, .	1.6	13
62	PIV measurements of turbulent flow overlying large, cubic- and hexagonally-packed hemisphere arrays. Journal of Hydraulic Research/De Recherches Hydrauliques, 2020, 58, 363-383.	0.7	13
63	Investigation of inner-outer interactions in a turbulent boundary layer using high-speed particle image velocimetry. Physical Review Fluids, 2019, 4, .	1.0	13
64	Turbulent Flow over Low-Order Models of Highly Irregular Surface Roughness. AIAA Journal, 2009, 47, 1288-1299.	1.5	12
65	The study of heterogeneous twoâ€phase flow around smallâ€scale heterogeneity in porous sandstone by measured elastic wave velocities and lattice Boltzmann method simulation. Journal of Geophysical Research: Solid Earth, 2014, 119, 7564-7577.	1.4	12
66	Structure of Turbulent Channel Flow Perturbed by a Wall-Mounted Cylindrical Element. AIAA Journal, 2015, 53, 1277-1286.	1.5	12
67	Structural characteristics of transition to turbulence in microscale capillaries. Physics of Fluids, 2009, 21, 034104.	1.6	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. Journal of Turbulence, 2019, 20, 147-173.	0.5	10
70	A particle-based image segmentation method for phase separation and interface detection in PIV images of immiscible multiphase flow. Measurement Science and Technology, 2021, 32, 095208.	1.4	10
71	Novel Environment Enables PIV Measurements of Turbulent Flow around and within Complex Topographies. Journal of Hydraulic Engineering, 2020, 146, 04020033.	0.7	9
72	Review of Particle Image Velocimetry: A Practical Guide, Second Edition. AIAA Journal, 2008, 46, 2974-2975.	1.5	8

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73	Inkjet Printing: Highâ€Throughput Printing via Microvascular Multinozzle Arrays (Adv. Mater. 1/2013). Advanced Materials, 2013, 25, 2-2.	11.1	8
74	A topological evaluation procedure to assess the integrity of a PIV vector field. Measurement Science and Technology, 2016, 27, 094007.	1.4	8
75	Particle-Image Velocimetry Study of a Pediatric Ventricular Assist Device. Journal of Biomechanical Engineering, 2010, 132, 071004.	0.6	6
76	Non-intrusive measurements of transitional and turbulent convective heat transfer in a rectangular microchannel. Journal of Micromechanics and Microengineering, 2011, 21, 085001.	1.5	6
77	PIV experiments in rough-wall, laminar-to-turbulent, oscillatory boundary-layer flows. Experiments in Fluids, 2014, 55, 1.	1.1	6
78	Experimental investigation of gaseous reactive flows around catalytically coated micro-wires. Proceedings of the Combustion Institute, 2009, 32, 3043-3050.	2.4	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.	0.7	4
80	Seismic and strain detection of heterogeneous spatial distribution of CO2 in high- permeable sandstone. International Journal of Greenhouse Gas Control, 2018, 72, 65-73.	2.3	4
81	Nanoscale detection of metastable states in porous and granular media. Journal of Applied Physics, 2020, 127, 024901.	1.1	4
82	The Effect of Biofilms on Turbulent Flow Over Permeable Beds. Water Resources Research, 2021, 57, e2019WR026032.	1.7	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, .	1.4	4
84	Structural characteristics of a heated jet in cross-flow emanating from a raised, circular stack. Experiments in Fluids, 2013, 54, 1.	1.1	3
85	Flow Past Mound-Bearing Impact Craters: An Experimental Study. Fluids, 2021, 6, 216.	0.8	3
86	Topographic perturbation of turbulent boundary layers by lowâ€angle, earlyâ€stage aeolian dunes. Earth Surface Processes and Landforms, 2022, 47, 1439-1454.	1.2	3
87	Natural advection from a microcantilever heat source. Applied Physics Letters, 2010, 96, 063113.	1.5	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.	1.4	2
90	Pore-Scale Dynamics of Liquid CO2â€“Water Displacement in 2D Axisymmetric Porous Micromodels Under Strong Drainage and Weak Imbibition Conditions: High-Speed Ï¼PIV Measurements. Frontiers in Water, 2021, 3, .	1.0	2

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91	A Methodology for Studying the Hydroelastic Response of Submerged Flexible Vegetation. Water Resources Research, 2022, 58, .	1.7	2
92	Muelleret al. reply. Physical Review Letters, 1992, 69, 2454-2454.	2.9	1
93	Polymer-induced turbulence modifications in an impinging jet. Experiments in Fluids, 2012, 52, 1237-1260.	1.1	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.	1.4	1
96	Review of Optical Metrology for Fluids, Combustion and Solids. AIAA Journal, 2004, 42, 1054-1055.	1.5	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.	1.4	0
100	12th International Symposium on Particle Image Velocimetry (PIV 2017). Measurement Science and Technology, 2019, 30, 020102.	1.4	0
101	An Investigation into a Pressure Anomaly during Synthetic Jet Operation. , 2019, , .		0
102	MST Outgoing EiC Editorial. Measurement Science and Technology, 0, , .	1.4	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