Brian T Helenbrook

List of Publications by Year
in descending order

93	1,415	394421	377865
papers	citations	19	34
		h-index	g-index

94	94	94	1019
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Exhaust energy conversion by thermoelectric generator: Two case studies. Energy Conversion and Management, 2011, 52, 1596-1611.	9.2	195
2	Mesh deformation using the biharmonic operator. International Journal for Numerical Methods in Engineering, 2003, 56, 1007-1021.	2.8	154
3	Estimating pressure fields from planar velocity data around immersed bodies; a finiteÂelement approach. Experiments in Fluids, 2020, 61, 1.	2.4	93
4	Quasi-steady deformation and drag of uncontaminated liquid drops. International Journal of Multiphase Flow, 2002, 28, 1631-1657.	3.4	87
5	Analysis of ``p''-Multigrid for Continuous and Discontinuous Finite Element Discretizations. , 2003, , .		64
6	A Numerical Method for Solving Incompressible Flow Problems with a Surface of Discontinuity. Journal of Computational Physics, 1999, 148, 366-396.	3.8	44
7	A two-fluid spectral-element method. Computer Methods in Applied Mechanics and Engineering, 2001, 191, 273-294.	6.6	43
8	Application of p-Multigrid to Discontinuous Galerkin Formulations of the Poisson Equation. AIAA Journal, 2006, 44, 566-575.	2.6	38
9	Ducted Wind Turbine Optimization. Journal of Solar Energy Engineering, Transactions of the ASME, 2018, 140, .	1.8	32
10	Ducted wind turbine optimization and sensitivity to rotor position. Wind Energy Science, 2018, 3, 221-229.	3.3	32
11	The role of Landau-Darrieus instability in large scale flows. Combustion and Flame, 1999, 117, 155-169.	5.2	30
12	Transience to instability in a liquid sheet. Journal of Fluid Mechanics, 2011, 666, 358-390.	3.4	29
13	Steady motion of Bingham liquid plugs in two-dimensional channels. Journal of Fluid Mechanics, 2012, 705, 258-279.	3.4	29
14	Study of mass transport in autogenous GTA welding of dissimilar metals. International Journal of Heat and Mass Transfer, 2015, 85, 41-53.	4.8	28
15	Scale dependence of direct shear tests. Science Bulletin, 2009, 54, 4337-4348.	9.0	26
16	Fluid flow and mixing in linear GTA welding of dissimilar ferrous alloys. International Journal of Heat and Mass Transfer, 2016, 93, 729-741.	4.8	24
17	Proper orthogonal decomposition and incompressible flow: An application to particle modeling. Computers and Fluids, 2007, 36, 1174-1186.	2.5	22
18	Ignition in the supersonic hydrogen/air mixing layer with reduced reaction mechanisms. Journal of Fluid Mechanics, 1996, 322, 275-296.	3.4	20

#	Article	IF	Citations
19	Proper-Orthogonal-Decomposition Based Thermal Modeling of Semiconductor Structures. IEEE Transactions on Electron Devices, 2012, 59, 2924-2931.	3.0	20
20	Thermal Modeling of Multi-Fin Field Effect Transistor Structure Using Proper Orthogonal Decomposition. IEEE Transactions on Electron Devices, 2014, 61, 2752-2759.	3.0	20
21	Fast Thermal Simulation of FinFET Circuits Based on a Multiblock Reduced-Order Model. IEEE Transactions on Computer-Aided Design of Integrated Circuits and Systems, 2016, 35, 1114-1124.	2.7	19
22	High-order adaptive arbitrary-Lagrangianâ€"Eulerian (ALE) simulations of solidification. Computers and Fluids, 2018, 167, 40-50.	2.5	18
23	On the Existence of Explicit hp-Finite Element Methods Using Gaussâ€"Lobatto Integration on the Triangle. SIAM Journal on Numerical Analysis, 2009, 47, 1304-1318.	2.3	16
24	Experimental and numerical investigation of the horizontal ribbon growth process. Journal of Crystal Growth, 2016, 453, 163-172.	1.5	16
25	On stretch-affected flame propagation in vortical flows. Combustion and Flame, 1996, 104, 460-468.	5.2	14
26	Application of p-Multigrid to Discontinuous Galerkin Formulations of the Euler Equations. AIAA Journal, 2009, 47, 1200-1208.	2.6	14
27	Floating Silicon Method single crystal ribbon â€" observations and proposed limit cycle theory. Journal of Crystal Growth, 2016, 451, 174-180.	1.5	14
28	Mass transport and solidification phenomenon in dissimilar metals arc welding. International Journal of Heat and Mass Transfer, 2019, 144, 118703.	4.8	14
29	Coupling p-multigrid to geometric multigrid for discontinuous Galerkin formulations of the convectionâ€"diffusion equation. Journal of Computational Physics, 2010, 229, 3664-3674.	3.8	13
30	High order finite element model for core loss assessment in a hysteresis magnetic lamination. Journal of Applied Physics, 2009, 106, 043911.	2.5	12
31	Solving Discontinuous Galerkin Formulations of Poisson's Equation using Geometric and p Multigrid. AIAA Journal, 2008, 46, 894-902.	2.6	11
32	Preconditioning for dual-time-stepping simulations of the shallow water equations including Coriolis and bed friction effects. Journal of Computational Physics, 2008, 227, 4425-4440.	3.8	10
33	DRAG ON ELLIPSOIDS AT FINITE REYNOLDS NUMBERS. , 2005, 15, 363-376.		10
34	Theory of radical-induced ignition of counterflowing hydrogen versus oxygen at high temperatures. Combustion and Flame, 1998, 112, 242-252.	5.2	9
35	An interpretation of absolutely and convectively unstable waves using series solutions. Wave Motion, 2010, 47, 564-582.	2.0	9
36	Reduced order modeling for accelerated Monte Carlo simulations in radiation transport. Applied Mathematics and Computation, 2015, 267, 237-251.	2.2	9

#	ARTICLE	IF	CITATIONS
37	Turbulent Flow Through a Ducted Elbow and Plugged Tee Geometry: An Experimental and Numerical Study. Journal of Fluids Engineering, Transactions of the ASME, 2019, 141, .	1.5	9
38	A novel stabilization method for high-order shock fitting with finite element methods. Journal of Computational Physics, 2021, 430, 110096.	3.8	9
39	On the response of convectively unstable flows to oscillatory forcing with application to liquid sheets. Journal of Fluid Mechanics, 2012, 699, 115-152.	3.4	8
40	On the sensitivity and accuracy of proper-orthogonal-decomposition-based reduced order models for Burgers equation. Computers and Fluids, 2015, 106, 19-32.	2.5	8
41	Variability in expiratory trajectory angles during consonant production by one human subject and from a physical mouth model: Application to respiratory droplet emission. Indoor Air, 2021, 31, 1896-1912.	4.3	8
42	Solidification along a wall or free surface with heat removal. Journal of Crystal Growth, 2015, 418, 79-85.	1.5	7
43	Ignition of hydrogen and oxygen in counterflow at high pressures. Proceedings of the Combustion Institute, 1996, 26, 815-822.	0.3	6
44	Super-Convergence of Discontinuous Galerkin Method Applied to the Navier-Stokes Equations. , 2009, , .		6
45	Spatial–temporal stability analysis of faceted growth with application to horizontal ribbon growth. Journal of Crystal Growth, 2016, 454, 35-44.	1.5	6
46	Analysis of faceted solidification in the horizontal ribbon growth crystallization process. Journal of Crystal Growth, 2021, 555, 125958.	1.5	6
47	Characterizing respiratory aerosol emissions during sustained phonation. Journal of Exposure Science and Environmental Epidemiology, 2022, 32, 689-696.	3.9	6
48	Preconditioning for incompressible flows with free-surfaces and two-fluid interfaces. Journal of Computational Physics, 2005, 207, 282-308.	3.8	5
49	Numerical Evaluation of P-Multigrid Method for the Solution of Discontinuous Galerkin Discretizations of Diffusive Equations. , 2005, , .		5
50	Thermal modeling of multi-gate field effect transistors based on a reduced order model. , 2014, , .		5
51	Algorithm for spatio-temporal analysis of the signalling problem. IMA Journal of Applied Mathematics, 2017, 82, 1-32.	1.6	5
52	Application of P-Multigrid to Discontinuous Galerkin Formulations of the Poisson Equation. , 2005, , .		4
53	Application of the p-Multigrid Algorithm to Discontinuous Galerkin Formulations of the Compressible Euler Equation. , 2007, , .		4
54	A Comparison of Discrete Element Modeling, Finite Element Analysis, and Physical Experiment of Granular Material Systems in a Direct Shear Cell. AIP Conference Proceedings, 2008, , .	0.4	4

#	Article	IF	Citations
55	Proper orthogonal decompositionâ€based reduced basis element thermal modeling of integrated circuits. International Journal for Numerical Methods in Engineering, 2017, 112, 479-500.	2.8	4
56	Physics of double faceted crystal growth in solidification processes. Journal of Crystal Growth, 2022, 582, 126517.	1.5	4
57	Artificial Compressibility Preconditioning for Incompressible Flows Under All Conditions. , 2006, , .		3
58	Thermal simulation of integrated circuits based on a reduced-order model. , 2013, , .		3
59	`<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si47.gif" overflow="scroll"><mml:mrow><mml:mi>p</mml:mi><mml:mo>=</mml:mo><mml:mn>2</mml:mn></mml:mrow></mml:math>` Continuous finite elements on tetrahedra with local mass matrix inversion to solve the preconditioned compressible Navierâ€"Stokes equations. Computers and Fluids, 2013, 88, 643-652.	2.5	3
60	POD-based thermal model for FinFET IC structure. , 2014, , .		3
61	Multilevel Algorithm for Obtaining the Proper Orthogonal Decomposition. AIAA Journal, 2018, 56, 4423-4436.	2.6	3
62	Maximal power per device area of a ducted turbine. Wind Energy Science, 2021, 6, 1031-1041.	3.3	3
63	Flow through an elbow: A direct numerical simulation investigating turbulent flow quantities. International Journal of Heat and Fluid Flow, 2021, 90, 108835.	2.4	3
64	An Adaptive Spectral Element Method for Two-Fluid Flows. , 2002, , .		3
65	Molecular dynamics determination of Two-dimensional nucleation kinetic coefficient for modeling the faceted growth of Si (1 1 1) from an undercooled melt. Journal of Crystal Growth, 2022, 592, 126736.	1.5	3
66	A Computational Study of the Micromechanics under Pre- and Post- Failure in a 2-D Direct Shear Test. , 2009, , .		2
67	p=2 Continuous finite elements on tetrahedra with local mass matrix inversion. Computer Methods in Applied Mechanics and Engineering, 2012, 213-216, 289-298.	6.6	2
68	A Numerical Investigation of High Lift Coefficient Airfoils Near Regions of Stall. , 2013, , .		2
69	Thermal modeling for FinFET NAND gate circuits using a multi-block reduced-order model. , 2015, , .		2
70	Ducted Wind Turbine Optimization. , 2016, , .		2
71	Predicting motor and generator maximum torque as a function of mass. , 2017, , .		2
72	Ordering statistics of four random walkers on a line. Physical Review E, 2018, 97, 052105.	2.1	2

#	ARTICLE	IF	CITATIONS
73	High-Order Shock Fitting with Finite Element Methods. , 2020, , .		2
74	On the variation of fricative airflow dynamics with vocal tract geometry and speech loudness. Aerosol Science and Technology, 2022, 56, 446-460.	3.1	2
75	Continuum Modeling and Discrete Element Simulations of Elastic-Quasi-Static Granular Flow in a Compressing Slot. Journal of Aerospace Engineering, 2009, 22, 415-422.	1.4	1
76	A numerical investigation of the stability of expanding liquid sheets and the influence of boundary conditions. Computers and Fluids, 2009, 38, 552-563.	2.5	1
77	POD based reduced basis element method for use in thermal modeling of integrated circuits. , 2014, , .		1
78	A reduced order thermal model with application to multi-fin field effect transistor structure. , 2014, , .		1
79	A hybrid level-set/moving-mesh interface tracking method. Applied Numerical Mathematics, 2015, 92, 21-39.	2.1	1
80	Analysis of Implicit Time-Advancing p-Multigrid Schemes for Discontinuous Galerkin Discretizations of the Euler Equations. , 2016, , .		1
81	Optimum design of a lightweight 10MW propulsion motor. , 2017, , .		1
82	Scaling of Permanent Magnet Machines with Thermal Effects. , 2019, , .		1
83	A Finite Element Approach for Pressure Field Estimation Around Moving Boundaries. , 2019, , .		1
84	Significance of Vocal Tract Geometrical Variations and Loudness on Airflow and Droplet Dispersion in a Two-Dimensional Representation of [F]. , 2021, , .		1
85	Turbulent Channel Flow With a Modified k-ω Turbulence Model for High-Order Finite Element Methods. , 2019, , .		1
86	Development of a Spatially-Filtered Method for Calculation of Multiphase Flow. , 2002, , .		1
87	Wake Comparison of Open and Ducted Wind Turbines Using Actuator Disc Simulations. , 2020, , .		1
88	Analysis and Design of a Wind Turbine with a Wind Accelerator. , 2011, , .		0
89	Transient Motion of Liquid Plugs With Yield Stress in Human Airways. , 2011, , .		0
90	On Reduced Order Modeling of Transient Flows Using the Proper Orthogonal Decomposition. , 2012, , .		0

#	Article	IF	Citations
91	A High-Order Lower-Triangular Pseudo-Mass Matrix for Explicit Time Advancement of hp Triangular Finite Element Methods. SIAM Journal on Numerical Analysis, 2021, 59, 1618-1638.	2.3	0
92	High-Order Adaptive Arbitrary-Lagrangian-Eulerian (ALE) Calculations of Solidification. , 2013, , .		0
93	Numerical Simulations of Turbulent Flow Through a 90° Elbow. , 2019, , .		0