Harry E A Van Den Akker

List of Publications by Year
in descending order

127 papers	5,002 citations	87888 38 h-index	98798 67 g-index
129 all docs	129 docs citations	129 times ranked	2941 citing authors

#	Article	IF	Citations
1	An experimental and numerical study of turbulent swirling flow in gas cyclones. Chemical Engineering Science, 1999, 54, 2055-2065.	3.8	406
2	Particle imaging velocimetry experiments and lattice-Boltzmann simulations on a single sphere settling under gravity. Physics of Fluids, 2002, 14, 4012-4025.	4.0	323
3	Large eddy simulations on the flow driven by a Rushton turbine. AICHE Journal, 1999, 45, 209-221.	3.6	312
4	Fully resolved simulations of colliding monodisperse spheres in forced isotropic turbulence. Journal of Fluid Mechanics, 2004, 519, 233-271.	3.4	197
5	Simulation of vortex core precession in a reverse-flow cyclone. AICHE Journal, 2000, 46, 1317-1331.	3.6	193
6	Liquid velocity field in a bubble column: LDA experiments. Chemical Engineering Science, 1997, 52, 4217-4224.	3.8	164
7	Assessment of large eddy and RANS stirred tank simulations by means of LDA. Chemical Engineering Science, 2004, 59, 2419-2432.	3.8	158
8	Population balance modeling of aerated stirred vessels based on CFD. AICHE Journal, 2002, 48, 673-685.	3.6	136
9	Simulation of mass-loading effects in gasâ€“solid cyclone separators. Powder Technology, 2006, 163, 59-68.	4.2	115
10	Twoâ€way coupled largeâ€eddy simulations of the gasâ€solid flow in cyclone separators. AICHE Journal, 2008, 54, 872-885.	3.6	96
11	A generic, mass conservative local grid refinement technique for lattice-Boltzmann schemes. International Journal for Numerical Methods in Fluids, 2006, 51, 439-468.	1.6	90
12	Three-dimensional LDA measurements in the impeller region of a turbulently stirred tank. Experiments in Fluids, 1999, 27, 522-532.	2.4	88
13	Mixing in Shallow Cumulus Clouds Studied by Lagrangian Particle Tracking. Journals of the Atmospheric Sciences, 2008, 65, 2581-2597.	1.7	84
14	Mixing times in a turbulent stirred tank by means of LES. AICHE Journal, 2006, 52, 3696-3706.	3.6	82
15	Sensitivity study on interfacial closure laws in two-fluid bubbly flow simulations. AICHE Journal, 2003, 49, 1621-1636.	3.6	79
16	Uniform Flow in Bubble Columns. Industrial & Engineering Chemistry Research, 2009, 48, 148-158.	3.7	75
17	A computational snapshot of gasâ€”liquid flow in baffled stirred reactors. Chemical Engineering Science, 1994, 49, 5175-5192.	3.8	73
18	On the accuracy of the void fraction measurements using optical probes in bubbly flows. Review of Scientific Instruments, 2005, 76, 035103.	1.3	73

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19	Coherent structures and axial dispersion in bubble column reactors. Chemical Engineering Science, 1996, 51, 2511-2520.	3.8	64
20	2D and 3D simulations of an internal airlift loop reactor on the basis of a two-fluid model. Chemical Engineering Science, 2001, 56, 6351-6358.	3.8	62
21	Macroinstability uncovered in a Rushton turbine stirred tank by means of LES. AICHE Journal, 2004, 50, 2383-2393.	3.6	59
22	Dynamic flow in a Kenics static mixer: An assessment of various CFD methods. AICHE Journal, 2004, 50, 1684-1696.	3.6	55
23	Numerical simulation of a dissolution process in a stirred tank reactor. Chemical Engineering Science, 2006, 61, 3025-3032.	3.8	52
24	Direct numerical simulation of the turbulent flow in a baffled tank driven by a Rushton turbine. AICHE Journal, 2012, 58, 3878-3890.	3.6	49
25	The effect of pulsating pressure on the performance of a PEM fuel cell with a wavy cathodeÂsurface. International Journal of Hydrogen Energy, 2016, 41, 14239-14251.	7.1	49
26	A multi-component two-phase lattice Boltzmann method applied to a 1-D Fischerâ€“Tropsch reactor. Chemical Engineering Journal, 2012, 207-208, 587-595.	12.7	48
27	A statistical approach to the life cycle analysis of cumulus clouds selected in a virtual reality environment. Journal of Geophysical Research, 2009, 114, .	3.3	47
28	Simulation of a slurry airlift using a two-fluid model. Chemical Engineering Science, 2001, 56, 673-681.	3.8	46
29	Turbulent flow of shear-thinning liquids in stirred tanksâ€”The effects of Reynolds number and flow index. Chemical Engineering Research and Design, 2010, 88, 827-843.	5.6	46
30	Interphase drag coefficients in gasâ€“solid flows. AICHE Journal, 2003, 49, 1060-1065.	3.6	45
31	Convective heat and mass transfer to a cylinder sheathed by a porous layer. AICHE Journal, 2003, 49, 3018-3028.	3.6	44
32	Dropletâ€“turbulence interactions and quasi-equilibrium dynamics in turbulent emulsions. Journal of Fluid Mechanics, 2019, 878, 221-276.	3.4	44
33	Turbulent mixing in a tubular reactor: Assessment of an FDF/LES approach. AICHE Journal, 2005, 51, 725-739.	3.6	43
34	Observational validation of the compensating mass flux through the shell around cumulus clouds. Quarterly Journal of the Royal Meteorological Society, 2009, 135, 101-112.	2.7	43
35	Measurements on wave propagation and bubble and slug velocities in cocurrent upward two-phase flow. Experimental Thermal and Fluid Science, 1997, 15, 267-278.	2.7	42
36	On the application of LDA to bubbly flow in the wobbling regime. Experiments in Fluids, 1999, 27, 435-449.	2.4	42

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37	Analysis of a bubbling 2-D gas-fluidized bed using image processing. Powder Technology, 1994, 81, 149-159.	4.2	38
38	Improved bounce-back methods for no-slip walls in lattice-Boltzmann schemes: Theory and simulations. Physical Review E, 2003, 67, 066703.	2.1	38
39	Application of LDA to bubbly flows. Nuclear Engineering and Design, 1998, 184, 329-338.	1.7	37
40	Application of spectral forcing in lattice-Boltzmann simulations of homogeneous turbulence. Computers and Fluids, 2006, 35, 1239-1251.	2.5	36
41	A numerical study on the coupling of hydrodynamics and orthokinetic agglomeration. Chemical Engineering Science, 2001, 56, 2531-2541.	3.8	35
42	Toward A Truly Multiscale Computational Strategy For Simulating Turbulent Two-Phase Flow Processes. Industrial & Engineering Chemistry Research, 2010, 49, 10780-10797.	3.7	35
43	Dynamic behavior of the flow field of a bubble column at low to moderate gas fractions. Chemical Engineering Science, 1999, 54, 4921-4927.	3.8	34
44	Lattice Boltzmann simulations for multi-scale chemical engineering. Current Opinion in Chemical Engineering, 2018, 21, 67-75.	7.8	34
45	Coherent structures in multiphase flows. Powder Technology, 1998, 100, 123-136.	4.2	31
46	On multiple stability of mixed-convection flows in a chemical vapor deposition reactor. International Journal of Heat and Mass Transfer, 2001, 44, 659-672.	4.8	31
47	Multi-Scale Simulations of Stirred Liquidâ€“Liquid Dispersions. Chemical Engineering Research and Design, 2007, 85, 697-702.	5.6	31
48	Estimation of turbulence power spectra for bubbly flows from Laser Doppler Anemometry signals. Chemical Engineering Science, 2005, 60, 6160-6168.	3.8	30
49	The Details of Turbulent Mixing Process and their Simulation. Advances in Chemical Engineering, 2006, 31, 151-229.	0.9	30
50	Symmetry breaking in a stagnation-flow CVD reactor. Journal of Crystal Growth, 2000, 212, 311-323.	1.5	29
51	Volumetric method for calculating the flow around moving objects in lattice-Boltzmann schemes. Physical Review E, 2002, 65, 056701.	2.1	29
52	Large-Eddy Simulation of Single-Phase Flow Dynamics and Mixing in an Industrial Crystallizer. Chemical Engineering Research and Design, 2007, 85, 169-179.	5.6	29
53	On the momentum equations in dispersed two-phase systems. International Journal of Multiphase Flow, 1983, 9, 21-36.	3.4	28
54	The microscopic modelling of hydrodynamics in industrial crystallisers. Chemical Engineering Science, 2001, 56, 2495-2509.	3.8	28

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55	Blending Liquids of Differing Viscosities and Densities in Stirred Vessels. Chemical Engineering Research and Design, 1997, 75, 777-783.	5.6	27
56	Numerical scale-up study for orthokinetic agglomeration in stirred vessels. AICHE Journal, 2001, 47, 2425-2440.	3.6	27
57	Lattice-Boltzmann-based two-phase thermal model for simulating phase change. Physical Review E, 2013, 88, 033302.	2.1	27
58	A surface and a gas-phase mechanism for the description of growth on the diamond(100) surface in an oxy-acetylene torch reactor. Journal of Applied Physics, 1998, 84, 6387-6398.	2.5	26
59	Pneumatic conveying of cohesive dairy powder: Experiments and CFD-DEM simulations. Powder Technology, 2019, 357, 193-213.	4.2	26
60	On turbulent flows in cold-wall CVD reactors. Journal of Crystal Growth, 2000, 212, 299-310.	1.5	25
61	Intensification of co-current gasâ€“liquid reactors using structured catalytic packings: A multiscale approach. Catalysis Today, 2009, 147, S138-S143.	4.4	24
62	Gamma radiation densitometry for studying the dynamics of fluidized beds. Chemical Engineering Science, 1999, 54, 2047-2054.	3.8	23
63	Mixed convection in radial flow between horizontal plates â€” I. Numerical simulations. International Journal of Heat and Mass Transfer, 2000, 43, 1523-1535.	4.8	23
64	Assessment of interaction potential in simulating nonisothermal multiphase systems by means of lattice Boltzmann modeling. Physical Review E, 2015, 92, 023307.	2.1	23
65	Experimental investigation on the bubble formation from needles with and without liquid co-flow. Chemical Engineering Science, 2019, 202, 318-335.	3.8	23
66	Simulating liquid droplets: A quantitative assessment of lattice Boltzmann and Volume of Fluid methods. International Journal of Heat and Fluid Flow, 2018, 70, 59-78.	2.4	22
67	Simulating Gasâ€“Liquid Flows by Means of a Pseudopotential Lattice Boltzmann Method. Industrial & Engineering Chemistry Research, 2013, 52, 11365-11377.	3.7	21
68	Thermohydrodynamics of an evaporating droplet studied using a multiphase lattice Boltzmann method. Physical Review E, 2017, 95, 043310.	2.1	21
69	A Lagrangian description of micromixing in a stirred tank reactor using 1D-micromixing model in a CFD flow field. Chemical Engineering Science, 1996, 51, 2643-2648.	3.8	20
70	A computational and experimental study on mold filling. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2001, 32, 69-78.	2.1	20
71	Time-resolved, 3D, laser-induced fluorescence measurements of fine-structure passive scalar mixing in a tubular reactor. Experiments in Fluids, 2004, 37, 1-21.	2.4	20
72	Direct numerical simulation of an exothermic gas-phase reaction in a packed bed with random particle distribution. Chemical Engineering Science, 2013, 100, 259-265.	3.8	19

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73	A detailed model for low-pressure CVD of tungsten. Thin Solid Films, 1995, 270, 456-461.	1.8	18
74	Mixed convection in radial flow between horizontal platesâ€”II. Experiments. International Journal of Heat and Mass Transfer, 2000, 43, 1537-1546.	4.8	18
75	Subcritical flow past a circular cylinder surrounded by a porous layer. Physics of Fluids, 2006, 18, 038106.	4.0	18
76	Eulerian simulation of heat transfer in a trickle bed reactor with constant wall temperature. Chemical Engineering Journal, 2012, 207-208, 675-682.	12.7	18
77	A lattice boltzmann approach to surfactantâ€laden emulsions. AICHE Journal, 2019, 65, 811-828.	3.6	18
78	A lattice Boltzmann study on the drag force in bubble swarms. Journal of Fluid Mechanics, 2011, 679, 101-121.	3.4	16
79	Two-phase flow redistribution phenomena in a large T-junction. International Journal of Multiphase Flow, 1993, 19, 563-573.	3.4	15
80	Two-dimensional simulation of an oxy-acetylene torch diamond reactor with a detailed gas-phase and surface mechanism. Journal of Applied Physics, 2000, 88, 4417.	2.5	15
81	Vortex Core Precession in a Gas Cyclone. Fluid Mechanics and Its Applications, 1998, , 289-292.	0.2	14
82	Noise analysis of transmitted light beams for determining bubble velocity and gas holdup profiles in a bubble column. Chemical Engineering Science, 1992, 47, 3631-3638.	3.8	13
83	Design and scale-up of chemical vapour deposition reactors for semiconductor processing. Chemical Engineering Science, 1996, 51, 2119-2128.	3.8	12
84	A numerical study on orthokinetic agglomeration in stirred tanks. Powder Technology, 2003, 130, 169-173.	4.2	12
85	Contact line motion without slip in lattice Boltzmann simulations. Chemical Engineering Science, 2011, 66, 3452-3458.	3.8	11
86	Multi-component diffusion phenomena in multiple-wafer chemical vapour deposition reactors. The Chemical Engineering Journal and the Biochemical Engineering Journal, 1995, 57, 127-136.	0.1	10
87	Fluidized bed nuclear fission reactor. Chemical Engineering Science, 1996, 51, 2763-2768.	3.8	10
88	An applicability study of advanced lattice-Boltzmann techniques for moving, no-slip boundaries and local grid refinement. Computers and Fluids, 2008, 37, 1238-1252.	2.5	10
89	Avoiding crystallization of lorazepam during infusion. European Journal of Pharmaceutical Sciences, 2011, 44, 621-6.	4.0	10
90	Shear thickening and history-dependent rheology of monodisperse suspensions with finite inertia via an immersed boundary lattice Boltzmann method. International Journal of Multiphase Flow, 2020, 125, 103205.	3.4	10

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91	Some recent developments in chemical vapor deposition process and equipment modeling. European Physical Journal Special Topics, 1999, 09, Pr8-117-Pr8-132.	0.2	9
92	Numerical study on the turbulent reacting flow in the vicinity of the injector of an LDPE tubular reactor. Chemical Engineering Science, 2007, 62, 2435-2444.	3.8	9
93	Simulating drop formation at an aperture by means of a Multi-Component Pseudo-Potential Lattice Boltzmann model. International Journal of Heat and Fluid Flow, 2019, 75, 153-164.	2.4	9
94	Modeling of selective tungsten low-pressure chemical vapor deposition. Thin Solid Films, 1996, 290-291, 406-410.	1.8	8
95	Influence of nitrogen on diamond growth in oxyacetylene combustion chemical vapor deposition. Journal of Applied Physics, 2002, 92, 4095-4102.	2.5	7
96	Numerical simulation of growing Cu particles in a Kenics static mixer reactor in which Cu2+ is reduced by carbohydrates. Chemical Engineering Science, 2004, 59, 5193-5200.	3.8	7
97	Mesoscale Flow Structures and Fluidâ€“Particle Interactions. Advances in Chemical Engineering, 2015, , 281-354.	0.9	7
98	Simulation of selective tungsten chemical vapour deposition. Materials Science in Semiconductor Processing, 1998, 1, 43-54.	4.0	6
99	Parallel simulation of turbulent fluid flow in a mixing tank. Lecture Notes in Computer Science, 1998, , 96-104.	1.3	5
100	Introducing a variable speed of sound in single-component lattice Boltzmann simulations of isothermal fluid flows. Computers and Fluids, 2018, 167, 129-145.	2.5	5
101	Time Scales and Turbulent Spectra above the Base of Stirred Vessels from Large Eddy Simulations. Flow, Turbulence and Combustion, 2020, 105, 31-62.	2.6	5
102	The effect of liquid co-flow on gas fractions, bubble velocities and chord lengths in bubbly flows. Part I: Uniform gas sparging and liquid co-flow. International Journal of Multiphase Flow, 2021, 137, 103498.	3.4	5
103	Inclusion of DLVO forces in simulations of non-Brownian solid suspensions: Rheology and structure. International Journal of Multiphase Flow, 2022, 149, 103929.	3.4	5
104	The spontaneous break-up of a liquid jet issuing into another liquid. The Chemical Engineering Journal, 1980, 19, 255-259.	0.3	4
105	Influence of temperature gradients on partial pressures in a lowâ€pressure chemicalâ€vaporâ€deposition reactor. Journal of Applied Physics, 1994, 76, 3130-3139.	2.5	4
106	A Multi-scale Numerical Study of the Flow, Heat, and Mass Transfer in Protective Clothing. Lecture Notes in Computer Science, 2004, , 637-644.	1.3	4
107	Four-dimensional Laser Induced Fluorescence measurements of micro mixing in a tubular reactor. , 2000, , 45-52.		3
108	Turbulent Flow in a Stirred Tank With Permeable Impeller Blades. , 2002, , 1507.		3

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109	Developing a non-intrusive measuring technique for determining orthokinetic agglomeration rate constants. Measurement Science and Technology, 2002, 13, 807-819.	2.6	3
110	A Numerical Investigation into the Influence of Mixing on Orthokinetic Agglomeration. , 2000, , 221-229.		3
111	Numerical simulation of turbulent flow for calibration of crossâ€correlation flow measurements. International Journal of Numerical Methods for Heat and Fluid Flow, 1994, 4, 143-158.	2.8	2
112	HEAT TRANSFER AND TEMPORAL BEHAVIOR OF THE LAMINAR MIXED-CONVECTION FLOW AROUND A DUCTED FLAT-PLATE THERMAL FLOW SENSOR. Experimental Heat Transfer, 2001, 14, 229-250.	3.2	2
113	The Limerick bubbly flow rig: Design, performance, hold-up and mixing pattern. Chemical Engineering Research and Design, 2019, 152, 106-122.	5.6	2
114	A spectral approach of suspending solid particles in a turbulent stirred vessel. AICHE Journal, 2021, 67, e17097.	3.6	2
115	The effect of liquid co-flow on gas fractions, bubble velocities and chord lengths in bubbly flows. Part II: Asymmetric flow configurations. International Journal of Multiphase Flow, 2021, 138, 103562.	3.4	2
116	Numerical simulations of dense granular suspensions in laminar flow under constant and varying shear rates. Computers and Fluids, 2021, 230, 105115.	2.5	2
117	Forced Flow Heat and Mass Transfer to a Cylinder Surrounded by a Porous Material With Applications to NBC Protective Clothing. , 2002, , .		2
118	Double beam and detector Î³-radiation attenuation gauge for studying bubble phenomena in gas-solid fluidized beds. Applied Radiation and Isotopes, 1997, 48, 1307-1312.	1.5	1
119	Multi-Parameter Sensing With a Thermal Silicon Flow Sensor. Journal of Fluids Engineering, Transactions of the ASME, 2002, 124, 643-649.	1.5	1
120	Reply to Comments on â€œTurbulent flow of shear-thinning liquids in stirred tanksâ€”The effects of Reynolds number and flow indexâ€• Chemical Engineering Research and Design, 2011, 89, 2194-2195.	5.6	1
121	On using variable molecular masses in multicomponent lattice Boltzmann simulations. Journal of Computational Science, 2021, 54, 101432.	2.9	1
122	Deviation representations. Chemical Engineering Science, 1982, 37, 803.	3.8	0
123	Simulation of Silicon Dioxide Deposition in a Vertical 300 mm LPCVD Furnace. , 2002, , 101.		0
124	CFD Approach of Growing Cu-Particles in a â€˜Kenicsâ€™ Static Mixer Reactor. , 2002, , 47.		0
125	A spatially resolved model for pressure filtration of edible fat slurries. AICHE Journal, 2021, 67, e17307.	3.6	0
126	Multiscale CFD of the Flow, Heat and Mass Transfer Through a Porous Material With Application to Protective Garments. , 2004, , .		0

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127	The Dutch connection of Bob de Vogel. Physics of Fluids, 2022, 34, 037106.	4.0	0