

# E A J Frank Peters

## List of Publications by Year in descending order

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105  
papers

2,736  
citations

172386

29  
h-index

214721

47  
g-index

106  
all docs

106  
docs citations

106  
times ranked

1947  
citing authors

#	ARTICLE	IF	CITATIONS
1	A new drag correlation from fully resolved simulations of flow past monodisperse static arrays of spheres. <i>AICHE Journal</i> , 2015, 61, 688-698.	1.8	176
2	Review of direct numerical simulation of fluid-particle mass, momentum and heat transfer in dense gas-solid flows. <i>Chemical Engineering Science</i> , 2014, 116, 710-724.	1.9	149
3	Elimination of time step effects in DPD. <i>Europhysics Letters</i> , 2004, 66, 311-317.	0.7	98
4	Comparison of CFD-DEM heat transfer simulations with infrared/visual measurements. <i>Chemical Engineering Journal</i> , 2015, 277, 388-401.	6.6	96
5	Direct numerical simulation of particulate flow with heat transfer. <i>International Journal of Multiphase Flow</i> , 2013, 57, 29-37.	1.6	93
6	Direct numerical simulations of dynamic gas-solid suspensions. <i>AICHE Journal</i> , 2016, 62, 1958-1969.	1.8	84
7	A study of heat transfer in fluidized beds using an integrated DIA/PIV/IR technique. <i>Chemical Engineering Journal</i> , 2015, 259, 90-106.	6.6	78
8	Rejection-free Monte Carlo sampling for general potentials. <i>Physical Review E</i> , 2012, 85, 026703.	0.8	77
9	Direct numerical simulation of fluid-particle heat transfer in fixed random arrays of non-spherical particles. <i>Chemical Engineering Science</i> , 2015, 129, 42-48.	1.9	72
10	CFD-DEM simulations and experimental validation of clustering phenomena and riser hydrodynamics. <i>Chemical Engineering Science</i> , 2017, 169, 246-258.	1.9	64
11	The conductivity of a foam. <i>Journal of Physics Condensed Matter</i> , 1996, 8, L475-L482.	0.7	54
12	Direct numerical simulations and experiments of a pseudo-2D gas-fluidized bed. <i>Chemical Engineering Science</i> , 2016, 143, 166-180.	1.9	52
13	Viscoelastic flow simulations in random porous media. <i>Journal of Non-Newtonian Fluid Mechanics</i> , 2017, 248, 50-61.	1.0	51
14	A coupled Volume of Fluid and Immersed Boundary Method for simulating 3D multiphase flows with contact line dynamics in complex geometries. <i>Chemical Engineering Science</i> , 2017, 166, 28-41.	1.9	49
15	Viscoelastic effects on residual oil distribution in flows through pillared microchannels. <i>Journal of Colloid and Interface Science</i> , 2018, 510, 262-271.	5.0	49
16	Direct numerical simulation of fluid flow and mass transfer in dense fluid-particle systems with surface reactions. <i>Chemical Engineering Science</i> , 2018, 176, 1-18.	1.9	46
17	A recurrence CFD study of heat transfer in a fluidized bed. <i>Chemical Engineering Science</i> , 2017, 172, 310-322.	1.9	43
18	Modeling bubble heat transfer in gas-solid fluidized beds using DEM. <i>Chemical Engineering Science</i> , 2014, 105, 121-131.	1.9	42

#	ARTICLE	IF	CITATIONS
19	A methodology for highly accurate results of direct numerical simulations: Drag force in dense gas–solid flows at intermediate Reynolds number. <i>International Journal of Multiphase Flow</i> , 2014, 62, 73-86.	1.6	41
20	A generalized method for parameterization of dissipative particle dynamics for variable bead volumes. <i>Europhysics Letters</i> , 2013, 102, 40009.	0.7	40
21	Experimental study of hydrodynamics and thermal behavior of a pseudo-2D spout-fluidized bed with liquid injection. <i>AIChE Journal</i> , 2015, 61, 1146-1159.	1.8	40
22	Lane change in flows through pillared microchannels. <i>Physics of Fluids</i> , 2017, 29, 113102.	1.6	40
23	Instationary Eulerian viscoelastic flow simulations using time separable Rivlin–Sawyers constitutive equations. <i>Journal of Non-Newtonian Fluid Mechanics</i> , 2000, 89, 209-228.	1.0	39
24	Mesoscopic simulations for the molecular and network structure of a thermoset polymer. <i>Soft Matter</i> , 2013, 9, 5785.	1.2	38
25	Viscoelastic flow simulations in model porous media. <i>Physical Review Fluids</i> , 2017, 2, .	1.0	38
26	A new approach to the deformation fields method for solving complex flows using integral constitutive equations. <i>Journal of Non-Newtonian Fluid Mechanics</i> , 2001, 98, 201-221.	1.0	35
27	Experimental and numerical investigation of structure and hydrodynamics in packed beds of spherical particles. <i>AIChE Journal</i> , 2018, 64, 1896-1907.	1.8	33
28	Experimental study of full field riser hydrodynamics by PIV/DIA coupling. <i>Powder Technology</i> , 2017, 313, 402-416.	2.1	31
29	Direct numerical simulation of a non-isothermal non-adiabatic packed bed reactor. <i>Chemical Engineering Journal</i> , 2020, 385, 123641.	6.6	30
30	Efficient Brownian dynamics simulation of particles near walls. I. Reflecting and absorbing walls. <i>Physical Review E</i> , 2002, 66, 056701.	0.8	29
31	A simulation approach to study photo-degradation processes of polymeric coatings. <i>Polymer Degradation and Stability</i> , 2014, 105, 68-79.	2.7	29
32	Dual emission LIF technique for pH and concentration field measurement around a rising bubble. <i>Experimental Thermal and Fluid Science</i> , 2018, 93, 186-194.	1.5	27
33	Multi-scale simulations for predicting material properties of a cross-linked polymer. <i>Computational Materials Science</i> , 2015, 102, 68-77.	1.4	26
34	Computational Fluid Dynamics–Discrete Element Method (CFD-DEM) Study of Mass-Transfer Mechanisms in Riser Flow. <i>Industrial &amp; Engineering Chemistry Research</i> , 2017, 56, 5558-5572.	1.8	26
35	The influence of the exposure conditions on the chemical and physical changes of polyester–urethane coatings during photodegradation. <i>Polymer Degradation and Stability</i> , 2016, 123, 13-25.	2.7	25
36	Structure of a Thermoset Polymer near an Alumina Substrate as Studied by Dissipative Particle Dynamics. <i>Journal of Physical Chemistry C</i> , 2013, 117, 19038-19047.	1.5	24

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37	A coupled finite volume immersed boundary method for simulating 3D viscoelastic flows in complex geometries. <i>Journal of Non-Newtonian Fluid Mechanics</i> , 2016, 232, 67-76.	1.0	24
38	Open-cell foams as catalysts support: A systematic analysis of the mass transfer limitations. <i>Chemical Engineering Journal</i> , 2020, 393, 124656.	6.6	24
39	Generalization of the deformation field method to simulate advanced reptation models in complex flow. <i>Journal of Rheology</i> , 2000, 44, 811-829.	1.3	23
40	Caging of ad-dimensional sphere and its relevance for the random dense sphere packing. <i>Physical Review E</i> , 2001, 63, 021404.	0.8	23
41	Viscoelastic flow past mono- and bidisperse random arrays of cylinders: flow resistance, topology and normal stress distribution. <i>Soft Matter</i> , 2017, 13, 9138-9146.	1.2	23
42	Oscillation dynamics of a bubble rising in viscous liquid. <i>Experiments in Fluids</i> , 2019, 60, 1.	1.1	23
43	Direct numerical simulation of fluid flow and dependently coupled heat and mass transfer in fluid-particle systems. <i>Chemical Engineering Science</i> , 2019, 204, 203-219.	1.9	23
44	Numerical modelling of flow and coupled mass and heat transfer in an adsorption process. <i>Chemical Engineering Science</i> , 2016, 152, 413-425.	1.9	21
45	Performance study of heat and mass transfer in an adsorption process by numerical simulation. <i>Chemical Engineering Science</i> , 2017, 160, 335-345.	1.9	21
46	Extension of local front reconstruction method with controlled coalescence model. <i>Physics of Fluids</i> , 2018, 30, .	1.6	21
47	Numerical simulation of bubble formation with a moving contact line using Local Front Reconstruction Method. <i>Chemical Engineering Science</i> , 2018, 187, 415-431.	1.9	21
48	Direct numerical simulation of hydrodynamic dispersion in open-cell solid foams. <i>Chemical Engineering Journal</i> , 2019, 358, 1305-1323.	6.6	21
49	Hydrodynamic interaction of bubbles rising side-by-side in viscous liquids. <i>Experiments in Fluids</i> , 2019, 60, 1.	1.1	20
50	Computing interface curvature from volume fractions: A machine learning approach. <i>Computers and Fluids</i> , 2019, 193, 104263.	1.3	20
51	A critical comparison of smooth and sharp interface methods for phase transition. <i>International Journal of Multiphase Flow</i> , 2019, 120, 103093.	1.6	19
52	Computational study of particle temperature in a bubbling spout fluidized bed with hot gas injection. <i>Powder Technology</i> , 2015, 284, 475-485.	2.1	18
53	Bubble formation from an orifice in liquid cross-flow. <i>Chemical Engineering Journal</i> , 2020, 386, 120902.	6.6	18
54	Modeling 3D Bubble Heat Transfer in Gas-Solid Fluidized Beds Using the CFD-DEM. <i>Industrial &amp; Engineering Chemistry Research</i> , 2015, 54, 11466-11474.	1.8	17

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55	Direct numerical simulation of non-isothermal flow through dense bidisperse random arrays of spheres. Powder Technology, 2017, 314, 291-298.	2.1	17
56	An improved subgrid scale model for frontâ€tracking based simulations of mass transfer from bubbles. AIChE Journal, 2020, 66, e16889.	1.8	16
57	Weathering of a polyester-urethane clearcoat: Lateral inhomogeneities. Polymer Degradation and Stability, 2015, 122, 180-186.	2.7	15
58	Effect of flow and fluid properties on the mobility of multiphase flows through porous media. Chemical Engineering Science, 2019, 193, 243-254.	1.9	14
59	Quantitative spectroscopic analysis of weathering of polyester-urethane coatings. Polymer Degradation and Stability, 2015, 121, 280-291.	2.7	13
60	Direct Numerical Simulation of Fluid Flow and Mass Transfer in Particle Clusters. Industrial & Engineering Chemistry Research, 2018, 57, 4664-4679.	1.8	13
61	An improved ghost-cell sharp interface immersed boundary method with direct forcing for particle laden flows. Computers and Fluids, 2018, 175, 111-128.	1.3	13
62	Experimental investigation of monodisperse solids drying in a gas-fluidized bed. Chemical Engineering Science, 2022, 259, 117783.	1.9	13
63	Efficient Brownian dynamics simulation of particles near walls. II. Sticky walls. Physical Review E, 2002, 66, 056702.	0.8	12
64	Hierarchical multi-scale simulations of adhesion at polymerâ€metal interfaces: dry and wet conditions. Physical Chemistry Chemical Physics, 2015, 17, 8935-8944.	1.3	12
65	Accurate method for the Brownian dynamics simulation of spherical particles with hard-body interactions. Journal of Chemical Physics, 2002, 117, 9202-9214.	1.2	11
66	Depth-resolved infrared microscopy and UV-VIS spectroscopy analysis of an artificially degraded polyester-urethane clearcoat. Polymer Degradation and Stability, 2014, 110, 422-434.	2.7	11
67	The molecular configuration of a DOPA/ST monolayer at the airâ€water interface: a molecular dynamics study. Physical Chemistry Chemical Physics, 2014, 16, 9634-9642.	1.3	11
68	Kinetic Monte Carlo simulation of the photodegradation process of polyester-urethane coatings. Physical Chemistry Chemical Physics, 2015, 17, 19962-19976.	1.3	11
69	Moving from momentum transfer to heat transfer â€ A comparative study of an advanced Graetz-Nusselt problem using immersed boundary methods. Chemical Engineering Science, 2019, 198, 317-333.	1.9	11
70	Influence of wetting conditions on bubble formation from a submerged orifice. Experiments in Fluids, 2020, 61, 1.	1.1	11
71	A multi-scale model for the Fischer-Tropsch synthesis in a wall-cooled packed bed reactor. Chemical Engineering Journal, 2021, 410, 128245.	6.6	11
72	FricDiff: A novel separation concept. Separation and Purification Technology, 2007, 56, 47-52.	3.9	10

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73	Solids volume fraction measurements on riser flow using a temporal histogram based DIA method. AICHE Journal, 2016, 62, 2681-2698.	1.8	10
74	Computing interface curvature from volume fractions: A hybrid approach. Computers and Fluids, 2018, 161, 74-88.	1.3	10
75	Multiscale Modelling of Dense Gas-Particle Flows. Advances in Chemical Engineering, 2018, , 1-52.	0.5	10
76	Direct numerical simulation of mass transfer in bidisperse arrays of spheres. AICHE Journal, 2020, 66, e16786.	1.8	10
77	Velocity profiles and circulation in Stefan-diffusion. Chemical Engineering Science, 2008, 63, 4685-4693.	1.9	9
78	Stochastic Dynamics with Correct Sampling for Constrained Systems. Journal of Chemical Theory and Computation, 2014, 10, 4208-4220.	2.3	9
79	Numerical simulations of bubble formation in liquid metal. International Journal of Multiphase Flow, 2020, 131, 103363.	1.6	9
80	Numerical study on the interaction of two bubbles rising side-by-side in viscous liquids. Chemical Engineering Journal, 2021, 410, 128257.	6.6	9
81	A multiple resolution approach using adaptive grids for fully resolved boundary layers on deformable gas-liquid interfaces at high Schmidt numbers. Chemical Engineering Science, 2020, 227, 115900.	1.9	8
82	Transfer Units Approach to the FricDiff Separation Process. Industrial & Engineering Chemistry Research, 2008, 47, 3937-3942.	1.8	7
83	Molecular dynamics simulation of a DOPA/ST monolayer on the Au(111) surface. Physical Chemistry Chemical Physics, 2013, 15, 15426.	1.3	7
84	Degradation of a polyester-urethane coating: Physical properties. Journal of Polymer Science, Part B: Polymer Physics, 2016, 54, 659-671.	2.4	7
85	Separation of azeotropic mixtures of alcohols and water with FricDiff. Separation and Purification Technology, 2008, 62, 349-362.	3.9	6
86	Multi-scale simulation of degradation of polymer coatings: Thermo-mechanical simulations. Polymer Degradation and Stability, 2016, 123, 1-12.	2.7	6
87	Effect of microchannel structure and fluid properties on non-inertial particle migration. Soft Matter, 2019, 15, 2648-2656.	1.2	6
88	Separation of Gas Mixtures with FricDiff: A Comparison between Experimental Data and Simulations. Industrial & Engineering Chemistry Research, 2009, 48, 7694-7704.	1.8	4
89	Euler-Lagrange Modeling of the Hydrodynamics of Dense Multiphase Flows. Advances in Chemical Engineering, 2015, 46, 137-191.	0.5	4
90	Direct Numerical Simulation of Reactive Fluid-Particle Systems Using an Immersed Boundary Method. Industrial & Engineering Chemistry Research, 2018, 57, 15565-15578.	1.8	4

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91	Fully resolved scalar transport for high Prandtl number flows using adaptive mesh refinement. Chemical Engineering Science: X, 2019, 4, 100047.	1.5	4
92	Comparison of the local front reconstruction method with a diffuse interface model for the modeling of droplet collisions. Chemical Engineering Science: X, 2020, 7, 100066.	1.5	4
93	Full-field PIV and local concentration measurements of ozone decomposition in riser flow. Canadian Journal of Chemical Engineering, 2021, 99, 1616-1626.	0.9	4
94	The influence of boundary layers on multi-component mass exchange in a FricDiff-module. Chemical Engineering Science, 2009, 64, 2256-2271.	1.9	3
95	Efficient Sampling of a Dual-Resolution Ensemble by Means of Dragging. Journal of Chemical Theory and Computation, 2011, 7, 2699-2709.	2.3	3
96	The influence of the exposure conditions on the simulated photodegradation process of polyester-urethane coatings. Polymer Degradation and Stability, 2016, 123, 121-130.	2.7	3
97	Direct numerical simulation of mass transfer and mixing in complex two-phase systems using a coupled volume of fluid and immersed boundary method. Chemical Engineering Science: X, 2020, 5, 100059.	1.5	2
98	A numerical study of flow boiling in a microchannel using the local front reconstruction method. AIChE Journal, 2022, 68, .	1.8	2
99	Detailed fluctuation theorem for mesoscopic modeling. Physical Review E, 2004, 70, 066114.	0.8	1
100	Pressure Effects on the Kinetic Separation of Isopropyl Alcohol-Water Vapor Mixtures with FricDiff. Separation Science and Technology, 2011, 46, 1868-1877.	1.3	1
101	Correction to "Structure of a Thermoset Polymer near an Alumina Substrate as Studied by Dissipative Particle Dynamics". Journal of Physical Chemistry C, 2013, 117, 21028-21028.	1.5	1
102	Direct numerical simulations of water flooding process through digitized porous rocks. Chemical Engineering Science: X, 2019, 4, 100041.	1.5	1
103	Influence of gas fraction on wall-to-liquid heat transfer in dense bubbly flows. Chemical Engineering Science: X, 2019, 4, 100037.	1.5	1
104	Analysis of Particle-Resolved CFD Results for Dispersion in Packed Beds. Fluids, 2022, 7, 199.	0.8	1
105	Lift-off of multiple particles in a narrow channel. Chemical Engineering Science: X, 2020, 8, 100086.	1.5	0