Shankar Subramaniam

List of Publications by Year
in descending order

61 papers	2,507 citations	257101 24 h-index	197535 49 g-index
62 all docs	62 docs citations	62 times ranked	1465 citing authors

#	Article	IF	Citations
1	Drag law for monodisperse gasâ€“solid systems using particle-resolved direct numerical simulation of flow past fixed assemblies of spheres. International Journal of Multiphase Flow, 2011, 37, 1072-1092.	1.6	328
2	Particle-Resolved Direct Numerical Simulation for Gas-Solid Flow Model Development. Annual Review of Fluid Mechanics, 2014, 46, 199-230.	10.8	256
3	Lagrangianâ€“Eulerian methods for multiphase flows. Progress in Energy and Combustion Science, 2013, 39, 215-245.	15.8	232
4	Enskog kinetic theory for monodisperse gasâ€“solid flows. Journal of Fluid Mechanics, 2012, 712, 129-168.	1.4	101
5	Modeling average gasâ€“solid heat transfer using particle-resolved direct numerical simulation. International Journal of Heat and Mass Transfer, 2015, 86, 898-913.	2.5	98
6	Pseudo-turbulent gas-phase velocity fluctuations in homogeneous gasâ€“solid flow: fixed particle assemblies and freely evolving suspensions. Journal of Fluid Mechanics, 2015, 770, 210-246.	1.4	84
7	A test method for determining adhesion forces and Hamaker constants of cementitious materials using atomic force microscopy. Cement and Concrete Research, 2011, 41, 1157-1166.	4.6	77
8	Role of fluid heating in dense gasâ€“solid flow as revealed by particle-resolved direct numerical simulation. International Journal of Heat and Mass Transfer, 2013, 58, 471-479.	2.5	77
9	Accurate numerical estimation of interphase momentum transfer in Lagrangianâ€“Eulerian simulations of dispersed two-phase flows. International Journal of Multiphase Flow, 2007, 33, 1337-1364.	1.6	75
10	Direct numerical simulation of gasâ€“solid suspensions at moderate Reynolds number: Quantifying the coupling between hydrodynamic forces and particle velocity fluctuations. Powder Technology, 2010, 203, 57-69.	2.1	74
11	A fully coupled quadrature-based moment method for dilute to moderately dilute fluidâ€“particle flows. Chemical Engineering Science, 2010, 65, 2267-2283.	1.9	65
12	Statistical modeling of sprays using the droplet distribution function. Physics of Fluids, 2001, 13, 624-642.	1.6	53
13	A probability density function method for turbulent mixing and combustion on three-dimensional unstructured deforming meshes. International Journal of Engine Research, 2000, 1, 171-190.	1.4	51
14	Statistical representation of a spray as a point process. Physics of Fluids, 2000, 12, 2413.	1.6	50
15	A numerically convergent Lagrangianâ€“Eulerian simulation method for dispersed two-phase flows. International Journal of Multiphase Flow, 2009, 35, 376-388.	1.6	50
16	Granular Flow in Silo Discharge: Discrete Element Method Simulations and Model Assessment. Industrial & Engineering Chemistry Research, 2013, 52, 13171-13182.	1.8	49
17	Effect of Particle Clusters on Carrier Flow Turbulence: A Direct Numerical Simulation Study. Flow, Turbulence and Combustion, 2010, 85, 735-761.	1.4	45
18	Pseudo-turbulent heat flux and average gasâ€“phase conduction during gasâ€“solid heatÂtransfer: flow past random fixed particleÂassemblies. Journal of Fluid Mechanics, 2016, 798, 299-349.	1.4	45

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19	A direct comparison of particle-resolved and point-particle methods in decaying turbulence. Journal of Fluid Mechanics, 2018, 850, 336-369.	1.4	44
20	Development of a gasâ€“solid drag law for clustered particles using particle-resolved direct numerical simulation. Chemical Engineering Science, 2016, 152, 199-212.	1.9	43
21	A review of granular flow in screw feeders and conveyors. Powder Technology, 2020, 366, 369-381.	2.1	39
22	A comprehensive probability density function formalism for multiphase flows. Journal of Fluid Mechanics, 2009, 628, 181-228.	1.4	37
23	Stochastic Lagrangian model for hydrodynamic acceleration of inertial particles in gasâ€“solid suspensions. Journal of Fluid Mechanics, 2016, 788, 695-729.	1.4	37
24	Hybrid Two-Fluid DEM Simulation of Gas-Solid Fluidized Beds. Journal of Fluids Engineering, Transactions of the ASME, 2007, 129, 1394-1403.	0.8	36
25	A multiscale model for dilute turbulent gas-particle flows based on the equilibration of energy concept. Physics of Fluids, 2006, 18, 033301.	1.6	26
26	Particle-resolved simulation of freely evolving particle suspensions: Flow physics and modeling. International Journal of Multiphase Flow, 2021, 135, 103533.	1.6	25
27	Stochastic models for capturing dispersion in particle-laden flows. Journal of Fluid Mechanics, 2020, 903, .	1.4	23
28	Consistent modeling of interphase turbulent kinetic energy transfer in particle-laden turbulent flows. Physics of Fluids, 2007, 19, 085101.	1.6	22
29	Freely cooling granular gases with short-ranged attractive potentials. Physics of Fluids, 2015, 27, .	1.6	22
30	Stochastic model for the hydrodynamic force in Eulerâ€“Lagrange simulations of particle-laden flows. Physical Review Fluids, 2022, 7, .	1.0	21
31	Importance of the fluid-particle drag model in predicting segregation in bidisperse gas-solid flow. International Journal of Multiphase Flow, 2016, 86, 99-114.	1.6	20
32	Effect of density ratio on velocity fluctuations in dispersed multiphase flow from simulations of finite-size particles. Acta Mechanica, 2019, 230, 469-484.	1.1	20
33	Objective decomposition of the stress tensor in granular flows. Physical Review E, 2005, 71, 021302.	0.8	19
34	On Brownian Dynamics Simulation of Nanoparticle Aggregation. Industrial & Engineering Chemistry Research, 2008, 47, 3338-3345.	1.8	19
35	Implementation of pseudo-turbulence closures in an Eulerianâ€“Eulerian two-fluid model for non-isothermal gasâ€“solid flow. Chemical Engineering Science, 2019, 207, 663-671.	1.9	19
36	Multiphase flows: Rich physics, challenging theory, and big simulations. Physical Review Fluids, 2020, 5, .	1.0	19

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37	Characterization of sheared colloidal aggregation using Langevin dynamics simulation. Physical Review E, 2014, 89, 062312.	0.8	17
38	MODELING INTERPHASE TURBULENT KINETIC ENERGY TRANSFER IN LAGRANGIAN-EULERIAN SPRAY COMPUTATIONS. , 2006, 16, 807-826.		16
39	Experimental and computational studies of dense granular flow: Transition from quasi-static to intermediate regime in a Couette shear device. Powder Technology, 2012, 220, 7-14.	2.1	15
40	Modeling droplet dispersion and interphase turbulent kinetic energy transfer using a new dual-timescale Langevin model. International Journal of Multiphase Flow, 2007, 33, 252-281.	1.6	14
41	Two-way coupled stochastic model for dispersion of inertial particles in turbulence. Journal of Fluid Mechanics, 2012, 700, 29-62.	1.4	14
42	Trends in Multiphase Modeling and Simulation of Sprays. International Journal of Spray and Combustion Dynamics, 2014, 6, 317-356.	0.4	14
43	Binary collision outcomes for inelastic soft-sphere models with cohesion. Powder Technology, 2017, 305, 462-476.	2.1	14
44	Machine Learning Reduced Order Model for Cost and Emission Assessment of a Pyrolysis System. Energy & Fuels, 2021, 35, 9950-9960.	2.5	12
45	Granular rheology and phase transition: DEM simulations and order-parameter based constitutive model. Chemical Engineering Science, 2012, 72, 20-34.	1.9	11
46	Momentum Transfer Between Polydisperse Particles in Dense Granular Flow. Journal of Fluids Engineering, Transactions of the ASME, 2006, 128, 62-68.	0.8	9
47	Direct Numerical Simulation of Gas-Solids Flow Based on the Immersed Boundary Method. Advances in Chemical and Materials Engineering Book Series, 0, , 245-276.	0.2	9
48	Coarse-Graining Approach to Infer Mesoscale Interaction Potentials from Atomistic Interactions for Aggregating Systems. Industrial & Engineering Chemistry Research, 2012, 51, 16116-16134.	1.8	7
49	Filtration model for polydisperse aerosols in gasâ€solid flow using granuleâ€resolved direct numerical simulation. AIChE Journal, 2015, 61, 3594-3606.	1.8	7
50	ACCURATE NUMERICAL SOLUTION OF THE SPRAY EQUATION USING PARTICLE METHODS. , 2006, 16, 159-194.		7
51	Mechanism of kinetic energy transfer in homogeneous bidisperse gas-solid flow and its implications for segregation. Physics of Fluids, 2017, 29, .	1.6	6
52	Fully resolved simulation of dense suspensions of freely evolving buoyant particles using an improved immersed boundary method. International Journal of Multiphase Flow, 2020, 132, 103396.	1.6	6
53	Detailed experimental and numerical investigation of fluidâ€“particle interactions of a fixed train of spherical particles inside a square duct. International Journal of Multiphase Flow, 2018, 103, 16-29.	1.6	5
54	What We Are Learning from COVID-19 for Respiratory Protection: Contemporary and Emerging Issues. Polymers, 2021, 13, 4165.	2.0	5

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55	Fluid-mediated sources of granular temperature at finite Reynolds numbers. Journal of Fluid Mechanics, 2022, 942, .	1.4	5
56	A Constitutive Model for Dense Granular Flows Based on Microstructural Descriptors. Industrial & Engineering Chemistry Research, 2016, 55, 10178-10190.	1.8	4
57	The rheology of slurries of athermal cohesive micro-particles immersed in fluid: A computational and experimental comparison. Chemical Engineering Science, 2019, 193, 411-420.	1.9	3
58	Towards Combined Deterministic and Statistical Approaches to Modeling Dispersed Multiphase Flows. Energy, Environment, and Sustainability, 2018, , 7-42.	0.6	2
59	An index to characterize gasâ€solid and solidâ€solid mixing from average volume fraction fields. AICHE Journal, 2022, 68, .	1.8	2
60	Rheological transition in simple shear of moderately dense assemblies of dry cohesive granules. Physical Review E, 2018, 97, 062902.	0.8	1
61	Investigation of Pseudo Turbulent Scalar Transport in Two Phase Fluid Flow and Passive Scalar Mixing Using Simultaneous SPIV/PLIF. , 2014, , .		0