Rodney Fox

List of Publications by Citations

228	8,912	48	86
papers	citations	h-index	g-index
236	9,882	4.1	6.71
ext. papers	ext. citations	avg, IF	L-index

#	Paper	IF	Citations
228	Solution of population balance equations using the direct quadrature method of moments. *Journal of Aerosol Science*, **2005**, 36, 43-73	4.3	579
227	Computational Models for Turbulent Reacting Flows **2003**,		401
226	Quadrature method of moments for aggregation-breakage processes. *Journal of Colloid and Interface Science*, **2003**, 258, 322-34	9.3	381
225	Quadrature method of moments for population-balance equations. *AICHE Journal*, **2003**, 49, 1266-1276	3.6	302
224	Mixing in a multi-inlet vortex mixer (MIVM) for flash nano-precipitation. *Chemical Engineering Science*, **2008**, 63, 2829-2842	4.4	260
223	Application of the direct quadrature method of moments to polydisperse gas–solid fluidized beds. *Powder Technology*, **2004**, 139, 7-20	5.2	218
222	A large eddy PIV method for turbulence dissipation rate estimation. *Chemical Engineering Science*, **2000**, 55, 4423-4434	4.4	199
221	Implementation of the quadrature method of moments in CFD codes for aggregation–breakage problems. *Chemical Engineering Science*, **2003**, 58, 3337-3351	4.4	184
220	CFD predictions for chemical processing in a confined impinging-jets reactor. *AICHE Journal*, **2006**, 52, 731-744	3.6	158
219	Conditional quadrature method of moments for kinetic equations. *Journal of Computational Physics* , **2011**, 230, 8216-8246	4.1	153
218	A CFD model for biomass fast pyrolysis in fluidized-bed reactors. *Chemical Engineering Science*, **2011**, 66, 2440-2452	4.4	151
217	Large-Eddy-Simulation Tools for Multiphase Flows. *Annual Review of Fluid Mechanics*, **2012**, 44, 47-76	22	148
216	Hybrid large-eddy simulation/Lagrangian filtered-density-function approach for simulating turbulent combustion. *Combustion and Flame*, **2005**, 143, 56-78	5.3	148
215	Computational Models for Polydisperse Particulate and Multiphase Systems **2013**,		134
214	An extended quadrature method of moments for population balance equations. *Journal of Aerosol Science*, **2012**, 51, 1-23	4.3	131
213	On multiphase turbulence models for collisional fluid–particle flows. *Journal of Fluid Mechanics*, **2014**, 742, 368-424	3.7	121
212	Experimental validation and CFD modeling study of biomass fast pyrolysis in fluidized-bed reactors. *Fuel*, **2012**, 97, 757-769	7.1	117

211	A quadrature-based moment method for dilute fluid-particle flows. *Journal of Computational Physics*, **2008**, 227, 2514-2539	4.1	114
210	Segregation in polydisperse fluidized beds: Validation of a multi-fluid model. *Chemical Engineering Science*, **2008**, 63, 272-285	4.4	107
209	On the Comparison between Population Balance Models for CFD Simulation of Bubble Columns. *Industrial & Engineering Chemistry Research*, **2005**, 44, 5063-5072	3.9	106
208	Numerical simulation of spray coalescence in an Eulerian framework: Direct quadrature method of moments and multi-fluid method. *Journal of Computational Physics*, **2008**, 227, 3058-3088	4.1	101
207	On fluid–particle dynamics in fully developed cluster-induced turbulence. *Journal of Fluid Mechanics*, **2015**, 780, 578-635	3.7	98
206	A quadrature-based third-order moment method for dilute gas-particle flows. *Journal of Computational Physics*, **2008**, 227, 6313-6350	4.1	98
205	Computational fluid dynamics and electrostatic modeling of polymerization fluidized-bed reactors. *Powder Technology*, **2010**, 203, 109-124	5.2	91
204	Implementation of the population balance equation in CFD codes for modelling soot formation in turbulent flames. *Chemical Engineering Science*, **2006**, 61, 87-95	4.4	91
203	CFD predictions for flow-regime transitions in bubble columns. *AICHE Journal*, **2005**, 51, 1897-1923	3.6	87
202	Dynamics of scalar dissipation in isotropic turbulence: a numerical and modelling study. *Journal of Fluid Mechanics*, **2001**, 433, 29-60	3.7	86
201	On the relationship between Lagrangian micromixing models and computational fluid dynamics. *Chemical Engineering and Processing: Process Intensification*, **1998**, 37, 521-535	3.7	80
200	On velocity-conditioned scalar mixing in homogeneous turbulence. *Physics of Fluids*, **1996**, 8, 2678-2691	4.4	75
199	CFD simulation of aggregation and breakage processes in laminar Taylor-Couette flow. *Journal of Colloid and Interface Science*, **2005**, 282, 380-96	9.3	74
198	Multivariate Quadrature-Based Moments Methods for turbulent polydisperse gas–liquid systems. *International Journal of Multiphase Flow*, **2013**, 50, 41-57	3.6	72
197	Realizable high-order finite-volume schemes for quadrature-based moment methods. *Journal of Computational Physics*, **2011**, 230, 5328-5352	4.1	70
196	Implementation of an iterative solution procedure for multi-fluid gas–particle flow models on unstructured grids. *Powder Technology*, **2011**, 213, 174-187	5.2	68
195	Hybrid finite-volume/transported PDF simulations of a partially premixed methane–air flame. *Combustion and Flame*, **2004**, 136, 327-350	5.3	66
194	Modeling of Fine-Particle Formation in Turbulent Flames. *Annual Review of Fluid Mechanics*, **2016**, 48, 159-190	22	64

193	Simulation of turbulent precipitation in a semi-batch Taylor-Couette reactor using CFD. *AICHE Journal*, **2001**, 47, 664-676	3.6	63
192	Numerical study of collisional particle dynamics in cluster-induced turbulence. *Journal of Fluid Mechanics*, **2014**, 747,	3.7	61
191	Computational Methods for Turbulent Reacting Flows in the Chemical Process Industry. *Oil & Gas Science & Technology*, **1996**, 51, 215-243		61
190	Direct numerical simulation of gas–solid suspensions at moderate Reynolds number: Quantifying the coupling between hydrodynamic forces and particle velocity fluctuations. *Powder Technology*, **2010**, 203, 57-69	5.2	60
189	Experimental validation of CFD simulations of a lab-scale fluidized-bed reactor with and without side-gas injection. *AICHE Journal*, **2010**, 56, 1434-1446	3.6	56
188	A fully coupled quadrature-based moment method for dilute to moderately dilute fluid–particle flows. *Chemical Engineering Science*, **2010**, 65, 2267-2283	4.4	55
187	Eulerian transported probability density function sub-filter model for large-eddy simulations of turbulent combustion. *Combustion Theory and Modelling*, **2006**, 10, 439-458	1.5	55
186	Comparison of micromixing models for CFD simulation of nanoparticle formation. *AICHE Journal*, **2004**, 50, 2217-2232	3.6	55
185	Solution of population balance equations in applications with fine particles: Mathematical modeling and numerical schemes. *Journal of Computational Physics*, **2016**, 325, 129-156	4.1	54
184	Investigation of turbulent mixing in a confined planar-jet reactor. *AICHE Journal*, **2005**, 51, 2649-2664	3.6	54
183	Higher-order quadrature-based moment methods for kinetic equations. *Journal of Computational Physics*, **2009**, 228, 7771-7791	4.1	53
182	Investigation of the flow field in a three-dimensional Confined Impinging Jets Reactor by means of microPIV and DNS. *Chemical Engineering Journal*, **2011**, 166, 294-305	14.7	52
181	Kinetic Modeling of Nanoprecipitation using CFD Coupled with a Population Balance. *Industrial & Engineering Chemistry Research*, **2010**, 49, 10651-10662	3.9	49
180	Validation of CFD simulations of a stirred tank using particle image velocimetry data. *Canadian Journal of Chemical Engineering*, **1998**, 76, 611-625	2.3	48
179	Theoretical study of the pyrolysis of methyltrichlorosilane in the gas phase. 3. Reaction rate constant calculations. *Journal of Physical Chemistry A*, **2010**, 114, 2384-92	2.8	47
178	A competitive aggregation model for flash nanoprecipitation. *Journal of Colloid and Interface Science*, **2010**, 351, 330-42	9.3	47
177	Linear stability analysis of a two-fluid model for air–water bubble columns. *Chemical Engineering Science*, **2007**, 62, 3159-3177	4.4	47
176	Improved Fokker–Planck model for the joint scalar, scalar gradient PDF. *Physics of Fluids*, **1994**, 6, 334-348	4.4	46

175	Multi-fluid CFD modeling of biomass gasification in polydisperse fluidized-bed gasifiers. *Powder Technology*, **2014**, 254, 187-198	5.2	45
174	Bivariate direct quadrature method of moments for coagulation and sintering of particle populations. *Journal of Aerosol Science*, **2006**, 37, 1562-1580	4.3	45
173	Optimal Moment Sets for Multivariate Direct Quadrature Method of Moments. *Industrial & Engineering Chemistry Research*, **2009**, 48, 9686-9696	3.9	44
172	Multi-environment probability density function method for modelling turbulent combustion using realistic chemical kinetics. *Combustion Theory and Modelling*, **2007**, 11, 889-907	1.5	44
171	The Fokker–Planck closure for turbulent molecular mixing: Passive scalars. *Physics of Fluids A, Fluid Dynamics*, **1992**, 4, 1230-1244		44
170	CFD simulation of shear-induced aggregation and breakage in turbulent Taylor-Couette flow. *Journal of Colloid and Interface Science*, **2005**, 285, 167-78	9.3	43
169	Simulation of fine particle formation by precipitation using computational fluid dynamics. *Canadian Journal of Chemical Engineering*, **2000**, 78, 983-993	2.3	43
168	The spectral relaxation model of the scalar dissipation rate in homogeneous turbulence. *Physics of Fluids*, **1995**, 7, 1082-1094	4.4	43
167	The Lagrangian spectral relaxation model of the scalar dissipation in homogeneous turbulence. *Physics of Fluids*, **1997**, 9, 2364-2386	4.4	41
166	CFD analysis of micromixing effects on polymerization in tubular low-density polyethylene reactors. *Chemical Engineering Science*, **1999**, 54, 3233-3242	4.4	41
165	A microscale multi-inlet vortex nanoprecipitation reactor: Turbulence measurement and simulation. *Applied Physics Letters*, **2009**, 94, 204104	3.4	40
164	Computational and experimental study of electrostatics in gas–solid polymerization fluidized beds. *Chemical Engineering Science*, **2013**, 92, 146-156	4.4	38
163	Theoretical study of the pyrolysis of methyltrichlorosilane in the gas phase. 2. Reaction paths and transition states. *Journal of Physical Chemistry A*, **2007**, 111, 1475-86	2.8	37
162	Euler–Euler anisotropic gaussian mesoscale simulation of homogeneous cluster-induced gas–particle turbulence. *AICHE Journal*, **2017**, 63, 2630-2643	3.6	36
161	Theoretical study of the pyrolysis of methyltrichlorosilane in the gas phase. 1. Thermodynamics. *Journal of Physical Chemistry A*, **2007**, 111, 1462-74	2.8	36
160	On the transition between turbulence regimes in particle-laden channel flows. *Journal of Fluid Mechanics*, **2018**, 845, 499-519	3.7	35
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158	Turbulence in a microscale planar confined impinging-jets reactor. *Lab on A Chip*, **2009**, 9, 1110-8	7.2	34

157	Turbulent precipitation in micromixers: CFD simulation and flow field validation. *Chemical Engineering Research and Design*, **2010**, 88, 1182-1193	5.5	34
156	Eulerian Quadrature-Based Moment Models for Dilute Polydisperse Evaporating Sprays. *Flow, Turbulence and Combustion*, **2010**, 85, 649-676	2.5	33
155	Population balance modeling of aggregation and breakage in turbulent Taylor-Couette flow. *Journal of Colloid and Interface Science*, **2007**, 307, 433-46	9.3	33
154	Large-eddy-simulation-based multiscale modeling of TiO2 nanoparticle synthesis in a turbulent flame reactor using detailed nucleation chemistry. *Chemical Engineering Science*, **2011**, 66, 4370-4381	4.4	32
153	Validation of LES predictions for turbulent flow in a Confined Impinging Jets Reactor. *Applied Mathematical Modelling*, **2011**, 35, 1591-1602	4.5	32
152	Eulerian models for turbulent spray combustion with polydispersity and droplet crossing. *Comptes Rendus - Mecanique*, **2009**, 337, 438-448	2.1	32
151	Advanced continuum modelling of gas-particle flows beyond the hydrodynamic limit. *Applied Mathematical Modelling*, **2011**, 35, 1616-1627	4.5	31
150	Verification of Eulerian–Eulerian and Eulerian–Lagrangian simulations for turbulent fluid–particle flows. *AICHE Journal*, **2017**, 63, 5396-5412	3.6	30
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146	A volume-filtered description of compressible particle-laden flows. *International Journal of Multiphase Flow*, **2020**, 122, 103138	3.6	30
145	Simultaneous velocity and concentration field measurements of passive-scalar mixing in a confined rectangular jet. *Experiments in Fluids*, **2007**, 42, 847-862	2.5	29
144	PDF modeling of turbulent-mixing effects on initiator efficiency in a tubular LDPE reactor. *AICHE Journal*, **1996**, 42, 2926-2940	3.6	29
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142	Computational Modeling of Biomass Thermochemical Conversion in Fluidized Beds: Particle Density Variation and Size Distribution. *Industrial & Engineering Chemistry Research*, **2015**, 54, 4084-4094	3.9	28
141	Multiscale Modeling of TiO2Nanoparticle Production in Flame Reactors: Effect of Chemical Mechanism. *Industrial & Engineering Chemistry Research*, **2010**, 49, 10663-10673	3.9	27
140	Numerical study of mixing and segregation in a biomass fluidized bed. *Powder Technology*, **2013**, 237, 355-366	5.2	26

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138	Simulations of multiphase reactive flows in fluidized beds using in situ adaptive tabulation. *Combustion Theory and Modelling*, **2004**, 8, 195-209	1.5	26
137	On the Comparison between Presumed and Full PDF Methods for Turbulent Precipitation. *Industrial & Engineering Chemistry Research*, **2001**, 40, 5132-5139	3.9	26
136	An open-source quadrature-based population balance solver for OpenFOAM. *Chemical Engineering Science*, **2018**, 176, 306-318	4.4	25
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134	Turbulent mixing in a confined rectangular wake. *Chemical Engineering Science*, **2006**, 61, 6946-6962	4.4	25
133	Realizable high-order finite-volume schemes for quadrature-based moment methods applied to diffusion population balance equations. *Journal of Computational Physics*, **2013**, 249, 162-179	4.1	24
132	Radiation transport modeling using extended quadrature method of moments. *Journal of Computational Physics*, **2013**, 246, 221-241	4.1	24
131	A Quadrature-Based Kinetic Model for Dilute Non-Isothermal Granular Flows. *Communications in Computational Physics*, **2011**, 10, 216-252	2.4	24
130	A solution algorithm for fluid–particle flows across all flow regimes. *Journal of Computational Physics*, **2017**, 344, 575-594	4.1	23
129	A multienvironment conditional probability density function model for turbulent reacting flows. *Physics of Fluids*, **2004**, 16, 4551-4565	4.4	23
128	PDF simulations of ethylene decomposition in tubular LDPE reactors. *AICHE Journal*, **2005**, 51, 585-606	3.6	23
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122	On the role of gas-phase and surface chemistry in the production of titania nanoparticles in turbulent flames. *Chemical Engineering Science*, **2013**, 104, 1003-1018	4.4	21

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117	An extended quadrature-based mass-velocity moment model for polydisperse bubbly flows. *Canadian Journal of Chemical Engineering*, **2014**, 92, 2053-2066	2.3	19
116	Modeling of bubble-column flows with quadrature-based moment methods. *Chemical Engineering Science*, **2011**, 66, 3058-3070	4.4	19
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113	Reactive mixing in a tubular jet reactor: a comparison of PDF simulations with experimental data. *Chemical Engineering Science*, **1994**, 49, 5229-5241	4.4	19
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111	Effect of model formulation on flow-regime predictions for bubble columns. *AICHE Journal*, **2007**, 53, 9-18	3.6	18
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106	Turbulent mixing in the confined swirling flow of a multi-inlet vortex reactor. *AICHE Journal*, **2017**, 63, 2409-2419	3.6	16
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104	Confocal imaging of laminar and turbulent mixing in a microscale multi-inlet vortex nanoprecipitation reactor. *Applied Physics Letters*, **2011**, 99, 204103	3.4	15

103	Steady-state iem model: singular perturbation analysis near perfect-micromixing limit. *Chemical Engineering Science*, **1989**, 44, 2831-2842	4.4	15
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99	Computation of turbulent reactive flows: first- principles macro/micromixing models using probability density function methods. *Chemical Engineering Science*, **1992**, 47, 2853-2858	4.4	14
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95	A quadrature-based moment method for polydisperse bubbly flows. *Computer Physics Communications*, **2019**, 244, 187-204	4.2	12
94	Reprint of: Multi-fluid CFD modeling of biomass gasification in polydisperse fluidized-bed gasifiers. *Powder Technology*, **2014**, 265, 23-34	5.2	12
93	Investigation of passive scalar mixing in a confined rectangular wake using simultaneous PIV and PLIF. *Chemical Engineering Science*, **2010**, 65, 3372-3383	4.4	12
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91	Implementation of pseudo-turbulence closures in an Eulerian–Eulerian two-fluid model for non-isothermal gas–solid flow. *Chemical Engineering Science*, **2019**, 207, 663-671	4.4	11
90	Application of the Fokker-Planck molecular mixing model to turbulent scalar mixing using moment methods. *Physics of Fluids*, **2017**, 29, 065109	4.4	11
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88	Linear stability analysis of the unsteady-state IEM model of micromixing. *Chemical Engineering Science*, **1990**, 45, 3571-3583	4.4	11
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81	A two-dimensional population balance model for cell growth including multiple uptake systems. *Chemical Engineering Research and Design*, **2018**, 132, 966-981	5.5	9
80	Coarse-grained computation for particle coagulation and sintering processes by linking Quadrature Method of Moments with Monte-Carlo. *Journal of Computational Physics*, **2010**, 229, 5299-5314	4.1	9
79	Micromixing effects in the nicolis–uhl reaction: numerical bifurcation and stability analysis of the IEM model. *Chemical Engineering Science*, **1991**, 46, 1829-1847	4.4	9
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61	A second-order realizable scheme for moment advection on unstructured grids. *Computer Physics Communications*, **2020**, 248, 106993	4.2	7
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