Carl R Wassgren

List of Publications by Year
in descending order

90 papers	3,711 citations	94433 37 h-index	138484 58 g-index
90 all docs	90 docs citations	90 times ranked	1885 citing authors

#	Article	IF	Citations
1	A perspective on calibration and application of DEM models for simulation of industrial bulk powder processes. Powder Technology, 2022, 402, 117301.	4.2	11
2	Measured damage resistance of corn and wheat kernels to compression, friction, and repeated impacts. Powder Technology, 2021, 380, 638-648.	4.2	30
3	Discrete element methodâ€“computational fluid dynamics analyses of flexible fibre fluidization. Journal of Fluid Mechanics, 2021, 910, .	3.4	16
4	Discrete element method models of elastic and elastoplastic fiber assemblies. AICHE Journal, 2021, 67, e17296.	3.6	8
5	Impact of Squeezing on the Microstructure of Thermal Interface Materials. , 2021, , .		0
6	Disintegration and release kinetics of dry compacted urea composites: A formulation and process design study. EFB Bioeconomy Journal, 2021, 1, 100020.	2.4	5
7	A Review of Grain Kernel Damage: Mechanisms, Modeling, and Testing Procedures. Transactions of the ASABE, 2020, 63, 455-475.	1.1	32
8	Measurements of Grain Kernel Friction Coefficients Using a Reciprocating-Pin Tribometer. Transactions of the ASABE, 2020, 63, 675-685.	1.1	7
9	Determination of material and interaction properties of maize and wheat kernels for DEM simulation. Biosystems Engineering, 2020, 195, 208-226.	4.3	44
10	An Investigation on triaxial compression of flexible fiber packings. AICHE Journal, 2020, 66, e16946.	3.6	10
11	A breakage kernel for use in population balance modelling of twin screw granulation. Powder Technology, 2020, 363, 525-540.	4.2	21
12	Discrete Element Method Investigation of Binary Granular Flows with Different Particle Shapes. Energies, 2020, 13, 1841.	3.1	9
13	Quantitative comparison of experimental and Mohr-Coulomb finite element method simulation flow characteristics from quasi two-dimensional flat-bottomed bins. Powder Technology, 2020, 367, 689-702.	4.2	6
14	Predicting the critical outlet width of a hopper using a continuum finite element method model. Powder Technology, 2019, 356, 649-660.	4.2	11
15	Calibration of Discrete-Element-Method Parameters for Cohesive Materials Using Dynamic-Yield-Strength and Shear-Cell Experiments. Processes, 2019, 7, 278.	2.8	23
16	Breakage modeling of needle-shaped particles using the discrete element method. Chemical Engineering Science: X, 2019, 3, 100027.	1.5	2
17	Breakage of wet flexible fiber agglomerates impacting a plane. AICHE Journal, 2019, 65, e16626.	3.6	3
18	Modeling granular material segregation using a combined finite element method and advectionâ€“diffusionâ€“segregation equation model. Powder Technology, 2019, 346, 38-48.	4.2	19

#	Article	IF	Citations
19	Computational and Experimental Studies of Flexible Fiber Flows in a Normalâ€Stressâ€Fixed Shear Cell. AICHE Journal, 2019, 65, 64-74.	3.6	19
20	Granule transformation in a twin screw granulator: Effects of conveying, kneading, and distributive mixing elements. Powder Technology, 2019, 346, 363-372.	4.2	14
21	Tailored granule properties using 3D printed screw geometries in twin screw granulation. Powder Technology, 2019, 341, 75-84.	4.2	13
22	Modeling granular material blending in a rotating drum using a finite element method and advectionâ€diffusion equation multiscale model. AICHE Journal, 2018, 64, 3277-3292.	3.6	20
23	Influence of normal contact force model on simulations of spherocylindrical particles. AICHE Journal, 2018, 64, 1986-2001.	3.6	15
24	Discrete element simulation studies of angles of repose and shear flow of wet, flexible fibers. Soft Matter, 2018, 14, 2923-2937.	2.7	15
25	A bonded sphero-cylinder model for the discrete element simulation of elasto-plastic fibers. Chemical Engineering Science, 2018, 175, 118-129.	3.8	33
26	Modeling granular material blending in a Tote blender using a finite element method and advection-diffusion equation multi-scale model. Powder Technology, 2018, 340, 428-439.	4.2	11
27	Characteristics of multi-component formulation granules formed using distributive mixing elements in twin screw granulation. Drug Development and Industrial Pharmacy, 2018, 44, 1826-1837.	2.0	4
28	Characterizing the powder punch-face adhesive interaction during the unloading phase of powder compaction. Powder Technology, 2017, 315, 410-421.	4.2	25
29	Granule breakage in twin screw granulation: Effect of material properties and screw element geometry. Powder Technology, 2017, 315, 290-299.	4.2	21
30	Scaling interâ€tablet coating variability in a horizontal rotating drum. AICHE Journal, 2017, 63, 3743-3755.	3.6	5
31	Predicting breakage of high aspect ratio particles in an agitated bed using the Discrete Element Method. Chemical Engineering Science, 2017, 158, 314-327.	3.8	33
32	Modifications to Johanson's roll compaction model for improved relative density predictions. Powder Technology, 2016, 297, 294-302.	4.2	28
33	Numerical and experimental analysis of influence of granule microstructure on its compression breakage. Powder Technology, 2016, 299, 87-97.	4.2	56
34	Correlations for shear-induced percolation segregation in granular shear flows. Powder Technology, 2016, 288, 441-452.	4.2	29
35	Modeling the Formation of Debossed Features on a Pharmaceutical Tablet. Journal of Pharmaceutical Innovation, 2016, 11, 214-230.	2.4	15
36	Computational study of granular shear flows of dry flexible fibres using the discrete elementÂmethod. Journal of Fluid Mechanics, 2015, 775, 24-52.	3.4	50

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37	Effect of particle size on flow and mixing in a bladed granular mixer. AICHE Journal, 2015, 61, 46-57.	3.6	24
38	DEMâ€“compartmentâ€“population balance model for particle coating in a horizontal rotating drum. Chemical Engineering Science, 2015, 125, 144-157.	3.8	33
39	The internal loads, moments, and stresses in rod-like particles in a low-speed, vertical axis mixer. Chemical Engineering Science, 2015, 134, 581-598.	3.8	18
40	Experimental Study of Wet Cohesive Particles Discharging from a Rectangular Hopper. Industrial & Engineering Chemistry Research, 2015, 54, 4545-4551.	3.7	5
41	Comparisons of intra-tablet coating variability using DEM simulations, asymptotic limit models, and experiments. Chemical Engineering Science, 2015, 131, 197-212.	3.8	44
42	Dense granular flow â€" A collaborative study. Powder Technology, 2015, 284, 571-584.	4.2	32
43	Measuring granule phase volume distributions using X-ray microtomography. Powder Technology, 2014, 264, 550-560.	4.2	17
44	Inter-particle coating variability in a continuous coater. Chemical Engineering Science, 2014, 117, 1-7.	3.8	5
45	Population Balance Model Validation and Predictionof CQAs for Continuous Milling Processes: toward QbDin Pharmaceutical Drug Product Manufacturing. Journal of Pharmaceutical Innovation, 2013, 8, 147-162.	2.4	38
46	Validation of 3-D finite element analysis for predicting the density distribution of roll compacted pharmaceutical powder. Powder Technology, 2013, 237, 386-399.	4.2	44
47	Experimental validation of a 2-D population balance model for spray coating processes. Chemical Engineering Science, 2013, 95, 360-365.	3.8	6
48	The kinematics of non-cohesive, sphero-cylindrical particles in a low-speed, vertical axis mixer. Chemical Engineering Science, 2013, 101, 144-164.	3.8	25
49	Granular shear flows of flat disks and elongated rods without and with friction. Physics of Fluids, 2013, 25, .	4.0	83
50	Multi-scale modeling of a spray coating process in a paddle mixer/coater: the effect of particle size distribution on particle segregation and coating uniformity. Chemical Engineering Science, 2013, 95, 203-210.	3.8	16
51	Validation and time step determination of discrete element modeling of flexible fibers. Powder Technology, 2013, 249, 386-395.	4.2	61
52	Angular Circulation Speed of Tablets in a Vibratory Tablet Coating Pan. AAPS PharmSciTech, 2013, 14, 339-351.	3.3	4
53	Quality by design for wet granulation in pharmaceutical processing: Assessing models for a priori design and scaling. Powder Technology, 2013, 240, 7-18.	4.2	57
54	Granular shear flows of flexible rod-like particles. AIP Conference Proceedings, 2013, , .	0.4	18

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55	Some computational considerations associated with discrete element modeling of cylindrical particles. Powder Technology, 2012, 228, 193-198.	4.2	56
56	A numerical study of granular shear flows of rod-like particles using the discrete element method. Journal of Fluid Mechanics, 2012, 713, 1-26.	3.4	127
57	Numerical simulation of dilute turbulent gasâ€particle flow with turbulence modulation. AICHE Journal, 2012, 58, 1381-1396.	3.6	27
58	A general compartmentâ€based population balance model for particle coating and layered granulation. AICHE Journal, 2012, 58, 1397-1408.	3.6	38
59	Discrete element method modeling of bi-convex pharmaceutical tablets: Contact detection algorithms and validation. Chemical Engineering Science, 2012, 69, 587-601.	3.8	56
60	Modeling the powder roll compaction process: Comparison of 2-D finite element method and the rolling theory for granular solids (Johanson's model). Powder Technology, 2012, 221, 90-100.	4.2	53
61	Comparison of flow microdynamics for a continuous granular mixer with predictions from periodic slice DEM simulations. Powder Technology, 2012, 221, 325-336.	4.2	18
62	Intra-tablet coating variability for several pharmaceutical tablet shapes. Chemical Engineering Science, 2011, 66, 2535-2544.	3.8	45
63	Computational Approaches for Studying the Granular Dynamics of Continuous Blending Processes, 1 â€“ DEM Based Methods. Macromolecular Materials and Engineering, 2011, 296, 290-307.	3.6	64
64	Classifying the fluidization and segregation behavior of binary mixtures using particle size and density ratios. AICHE Journal, 2011, 57, 1446-1458.	3.6	55
65	Incorporating particle flow information from discrete element simulations in population balance models of mixer-coaters. Chemical Engineering Science, 2011, 66, 3592-3604.	3.8	58
66	Intra-particle coating variability: Analysis and Monte-Carlo simulations. Chemical Engineering Science, 2010, 65, 1117-1124.	3.8	40
67	A study on the sensitivity of Druckerâ€“Prager Cap model parameters during the decompression phase of powder compaction simulations. Powder Technology, 2010, 198, 315-324.	4.2	45
68	Segregation of cohesive granular materials during discharge from a rectangular hopper. Granular Matter, 2010, 12, 193-200.	2.2	31
69	The effect of column diameter and bed height on minimum fluidization velocity. AICHE Journal, 2010, 56, 2304-2311.	3.6	44
70	An exact method for determining local solid fractions in discrete element method simulations. AICHE Journal, 2010, 56, 3036-3048.	3.6	26
71	Finite element analysis of pharmaceutical tablet compaction using a density dependent material plasticity model. Powder Technology, 2010, 202, 46-54.	4.2	45
72	Continuous blending of cohesive granular material. Chemical Engineering Science, 2010, 65, 5687-5698.	3.8	41

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73	Cylindrical object contact detection for use in discrete element method simulations. Part I â€“ Contact detection algorithms. Chemical Engineering Science, 2010, 65, 5852-5862.	3.8	118
74	Cylindrical object contact detection for use in discrete element method simulations, Part Iiâ€”Experimental validation. Chemical Engineering Science, 2010, 65, 5863-5871.	3.8	94
75	Inter-tablet coating variability: Tablet residence time variability. Chemical Engineering Science, 2009, 64, 2705-2717.	3.8	73
76	Using the discrete element method to predict collision-scale behavior: A sensitivity analysis. Chemical Engineering Science, 2009, 64, 3407-3416.	3.8	63
77	Predicting the flow mode from hoppers using the discrete element method. Powder Technology, 2009, 195, 1-10.	4.2	181
78	Simulation of a continuous granular mixer: Effect of operating conditions on flow and mixing. Chemical Engineering Science, 2009, 64, 2672-2682.	3.8	64
79	Force model considerations for glued-sphere discrete element method simulations. Chemical Engineering Science, 2009, 64, 3466-3475.	3.8	117
80	Predicting discharge dynamics of wet cohesive particles from a rectangular hopper using the discrete element method (DEM). Chemical Engineering Science, 2009, 64, 5268-5275.	3.8	116
81	Inter-tablet coating variability: Residence times in a horizontal pan coater. Chemical Engineering Science, 2008, 63, 2881-2894.	3.8	72
82	Modeling granular segregation in flow from quasi-three-dimensional, wedge-shaped hoppers. Powder Technology, 2008, 179, 126-143.	4.2	133
83	Predicting discharge dynamics from a rectangular hopper using the discrete element method (DEM). Chemical Engineering Science, 2008, 63, 5821-5830.	3.8	194
84	Investigation of the Variability of NIR In-line Monitoring of Roller Compaction Process by Using Fast Fourier Transform (FFT) Analysis. AAPS PharmSciTech, 2008, 9, 419-424.	3.3	18
85	Granular segregation in discharging cylindrical hoppers: A discrete element and experimental study. Chemical Engineering Science, 2007, 62, 6423-6439.	3.8	139
86	The Application of Computational Modeling to Pharmaceutical Materials Science. MRS Bulletin, 2006, 31, 900-904.	3.5	22
87	The damping performance of a single particle impact damper. Journal of Sound and Vibration, 2005, 286, 123-144.	3.9	80
88	Stress results from two-dimensional granular shear flow simulations using various collision models. Physical Review E, 2005, 71, 061307.	2.1	41
89	Cage Instabilities in Cylindrical Roller Bearings. Journal of Tribology, 2004, 126, 681-689.	1.9	123
90	Size Segregation in Granular Beds Subject to Discrete and Continuous Vertical Oscillations. Materials Research Society Symposia Proceedings, 2000, 627, 1.	0.1	1