Ashim K Datta

List of Publications by Year
in descending order

102 papers	5,347 citations	87401 40 h-index	107981 68 g-index
118 all docs	118 docs citations	118 times ranked	3436 citing authors

#	Article	IF	Citations
1	Food as porous media: a review of the dynamics of porous properties during processing. Food Reviews International, 2022, 38, 953-985.	4.3	15
2	Mathematical modelingâ€"Computer-aided food engineering. , 2022, , 277-290.		2
3	Mechanistic understanding of microwave-vacuum drying of non-deformable porous media. Drying Technology, 2021, 39, 850-867.	1.7	6
4	An inverse-breathing encapsulation system for cell delivery. Science Advances, 2021, 7, .	4.7	33
5	Numerical analysis of heat and mass transfers during intermittent microwave drying of Chinese jujube (Zizyphus jujuba Miller). Food and Bioproducts Processing, 2021, 129, 10-23.	1.8	13
6	Engineering modeling frameworks for microbial food safety at various scales. Comprehensive Reviews in Food Science and Food Safety, 2021, 20, 4213-4249.	5.9	14
7	Factors affecting contamination and infiltration of Escherichia coli K12 into spinach leaves during vacuum cooling. Journal of Food Engineering, 2021, 311, 110735.	2.7	4
8	Selective heating and enhanced boiling in microwave heating of multicomponent (solidâ€"liquid) foods. Journal of Food Process Engineering, 2020, 43, e13320.	1.5	4
9	Estimating permeability and porosity of plant tissues: Evolution from raw to the processed states of potato. Journal of Food Engineering, 2020, 277, 109912.	2.7	9
10	Prediction of effective moisture diffusivity in plant tissue food materials over extended moisture range. Drying Technology, 2020, 38, 2202-2216.	1.7	7
11	A Mechanistic Model for Bacterial Retention and Infiltration on a Leaf Surface during a Sessile Droplet Evaporation. Langmuir, 2020, 36, 12130-12142.	1.6	7
12	Simulationâ€based enhancement of learning: The case of food safety. Journal of Food Science Education, 2020, 19, 192-211.	1.0	5
13	Understanding puffing in a domestic microwave oven. Journal of Food Process Engineering, 2020, 43, e13429.	1.5	25
14	Mechanistic modeling of light-induced chemotactic infiltration of bacteria into leaf stomata. PLoS Computational Biology, 2020, 16, e1007841.	1.5	10
15	Perspectives from CO+RE: How COVID-19 changed our food systems and food security paradigms. Current Research in Food Science, 2020, 3, 166-172.	2.7	134
16	Digital twins of food process operations: the next step for food process models?. Current Opinion in Food Science, 2020, 35, 79-87.	4.1	88
17	Retention and infiltration of bacteria on a plant leaf driven by surface water evaporation. Physics of Fluids, 2019, 31, .	1.6	19
18	Pressure-driven infiltration of water and bacteria into plant leaves during vacuum cooling: A mechanistic model. Journal of Food Engineering, 2019, 246, 209-223.	2.7	23

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19	10.1063/1.5126127.5. , 2019, , .		0
20	Modeling radio frequency heating of granular foods: Individual particle vs. effective property approach. Journal of Food Engineering, 2018, 234, 24-40.	2.7	37
21	Engineering puffed rice. Physics Today, 2018, 71, 66-67.	0.3	4
22	Mechanistic understanding of non-spherical bacterial attachment and deposition on plant surface structures. Chemical Engineering Science, 2017, 160, 396-418.	1.9	11
23	Penetration of aerobic bacteria into meat: A mechanistic understanding. Journal of Food Engineering, 2017, 196, 193-207.	2.7	22
24	Susceptors in microwave cavity heating: Modeling and experimentation with a frozen pie. Journal of Food Engineering, 2017, 195, 191-205.	2.7	36
25	Mechanistic understanding of temperature-driven water and bacterial infiltration during hydrocooling of fresh produce. Postharvest Biology and Technology, 2016, 118, 159-174.	2.9	14
26	Coupled electromagnetics, multiphase transport and large deformation model for microwave drying. Chemical Engineering Science, 2016, 156, 206-228.	1.9	70
27	Mass production of shaped particles through vortex ring freezing. Nature Communications, 2016, 7, 12401.	5.8	55
28	Thawing in a microwave cavity: Comprehensive understanding of inverter and cycled heating. Journal of Food Engineering, 2016, 180, 87-100.	2.7	29
29	Coupled multiphase transport, large deformation and phase transition during rice puffing. Chemical Engineering Science, 2016, 139, 75-98.	1.9	55
30	Toward computer-aided food engineering: Mechanistic frameworks for evolution of product, quality and safety during processing. Journal of Food Engineering, 2016, 176, 9-27.	2.7	59
31	Mechanistic understanding of case-hardening and texture development during drying of food materials. Journal of Food Engineering, 2015, 166, 119-138.	2.7	138
32	A multiphase porous medium transport model with distributed sublimation front to simulate vacuum freeze drying. Food and Bioproducts Processing, 2015, 94, 637-648.	1.8	37
33	Modeling moisture migration in a multi-domain food system: Application to storage of a sandwich system. Food Research International, 2015, 76, 427-438.	2.9	17
34	Quantitative understanding of Refractance Windowâ„¢ drying. Food and Bioproducts Processing, 2015, 95, 237-253.	1.8	59
35	Microwave drying of spheres: Coupled electromagnetics-multiphase transport modeling with experimentation. Part II: Model validation and simulation results. Food and Bioproducts Processing, 2015, 96, 326-337.	1.8	48
36	Microwave drying of spheres: Coupled electromagnetics-multiphase transport modeling with experimentation. Part I: Model development and experimental methodology. Food and Bioproducts Processing, 2015, 96, 314-325.	1.8	69

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37	Predictive Thermal Inactivation Model for Effects and Interactions of Temperature, NaCl, Sodium Pyrophosphate, and Sodium Lactate on Listeria monocytogenes in Ground Beef. Food and Bioprocess Technology, 2014, 7, 437-446.	2.6	12
38	Computation of mass transport properties of apple and rice from X-ray microtomography images. Innovative Food Science and Emerging Technologies, 2014, 24, 14-27.	2.7	34
39	Transport in deformable hygroscopic porous media during microwave puffing. AICHE Journal, 2013, 59, 33-45.	1.8	36
40	Simulation as an integrator in an undergraduate biological engineering curriculum. Computer Applications in Engineering Education, 2013, 21, 717-727.	2.2	11
41	Quality and safety driven optimal operation of deep-fat frying of potato chips. Journal of Food Engineering, 2013, 119, 125-134.	2.7	21
42	Multiscale modeling in food engineering. Journal of Food Engineering, 2013, 114, 279-291.	2.7	141
43	Principles of Microwave Combination Heating. Comprehensive Reviews in Food Science and Food Safety, 2013, 12, 24-39.	5.9	83
44	Enabling computer-aided food process engineering: Property estimation equations for transport phenomena-based models. Journal of Food Engineering, 2013, 116, 483-504.	2.7	72
45	Interdisciplinary engineering approaches to study how pathogenic bacteria interact with fresh produce. Journal of Food Engineering, 2013, 114, 426-448.	2.7	33
46	Modeling Food Process, Quality and Safety: Frameworks and Challenges. Food Engineering Series, 2013, , 459-471.	0.3	0
47	Surface heat and mass transfer coefficients for multiphase porous media transport models with rapid evaporation. Food and Bioproducts Processing, 2012, 90, 475-490.	1.8	49
48	Soft matter approaches as enablers for food macroscale simulation. Faraday Discussions, 2012, 158, 435.	1.6	27
49	Multiphase and multicomponent transport with phase change during meat cooking. Journal of Food Engineering, 2012, 113, 299-309.	2.7	41
50	Modeling of Multiphase Transport during Drying of Honeycomb Ceramic Substrates. Drying Technology, 2012, 30, 607-618.	1.7	13
51	Texture prediction during deep frying: A mechanistic approach. Journal of Food Engineering, 2012, 108, 111-121.	2.7	38
52	Porous media based model for deep-fat vacuum frying potato chips. Journal of Food Engineering, 2012, 110, 428-440.	2.7	56
53	Modeling food process, quality and safety: Frameworks and practical aspects. Procedia Food Science, 2011, 1, 1202-1208.	0.6	2
54	Transport in deformable food materials: A poromechanics approach. Chemical Engineering Science, 2011, 66, 6482-6497.	1.9	70

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55	Fuzzy finite element analysis of heat conduction problems with uncertain parameters. Journal of Food Engineering, 2011, 103, 38-46.	2.7	49
56	A user-friendly general-purpose predictive software package for food safety. Journal of Food Engineering, 2011, 104, 173-185.	2.7	27
57	Microwave puffing: Determination of optimal conditions using a coupled multiphase porous media â€“ Large deformation model. Journal of Food Engineering, 2011, 107, 152-163.	2.7	62
58	Modeling Transport in Porous Media With Phase Change: Applications to Food Processing. Journal of Heat Transfer, 2011, 133, .	1.2	99
59	A Model for Flow and Deformation in Unsaturated Swelling Porous Media. Transport in Porous Media, 2010, 84, 335-369.	1.2	19
60	Experimental and Analytical Temperature Distributions during Oven-Based Convection Heating. Journal of Food Science, 2010, 75, E66-E72.	1.5	3
61	Development of Associations and Kinetic Models for Microbiological Data to Be Used in Comprehensive Food Safety Prediction Software. Journal of Food Science, 2010, 75, R107-20.	1.5	17
62	Food Processing and Preservation: Microwave. , 2010, , 550-556.		0
63	Hotâ€air drying of whole fruit Chinese jujube (<i>Zizyphus jujuba</i> Miller): physicochemical properties of dried products. International Journal of Food Science and Technology, 2009, 44, 1415-1421.	1.3	30
64	Development of equine upper airway fluid mechanics model for Thoroughbred racehorses. Equine Veterinary Journal, 2008, 40, 272-279.	0.9	34
65	Implications of different degrees of arytenoid cartilage abduction on equine upper airway characteristics. Equine Veterinary Journal, 2008, 40, 629-635.	0.9	59
66	Status of Physicsâ€Based Models in the Design of Food Products, Processes, and Equipment. Comprehensive Reviews in Food Science and Food Safety, 2008, 7, 121-129.	5.9	43
67	Status of food process modeling and where do we go from here (Synthesis of the outcome from) Tj ETQq1 1 0.784314 rgBT /Overlock	5.9	19
68	Finite-Element Model of Interaction between Fungal Polysaccharide and Monoclonal Antibody in the Capsule of Cryptococcus neoformans. Journal of Physical Chemistry B, 2008, 112, 8514-8522.	1.2	15
69	Simulation of Turbulent Airflow Using a CT Based Upper Airway Model of a Racehorse. Journal of Biomechanical Engineering, 2008, 130, 031011.	0.6	19
70	Computation of Airflow Effects in Microwave and Combination Heating. Contemporary Food Engineering, 2007, , 313-330.	0.2	0
71	Computational model predicts effective delivery of 188-Re-labeled melanin-binding antibody to metastatic melanoma tumors with wide range of melanin concentrations. Melanoma Research, 2007, 17, 291-303.	0.6	22
72	An Improved, Easily Implementable, Porous Media Based Model for Deep-Fat Frying. Food and Bioproducts Processing, 2007, 85, 220-230.	1.8	52

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73	Transport and related properties of breads baked using various heating modes. Journal of Food Engineering, 2007, 78, 1382-1387.	2.7	59
74	Porous media approaches to studying simultaneous heat and mass transfer in food processes. I: Problem formulations. Journal of Food Engineering, 2007, 80, 80-95.	2.7	372
75	Modeling the heating uniformity contributed by a rotating turntable in microwave ovens. Journal of Food Engineering, 2007, 82, 359-368.	2.7	255
76	Uncertainty in Thermal Process Calculations due to Variability in First-Order and Weibull Kinetic Parameters. Journal of Food Science, 2007, 72, E155-E167.	1.5	37
77	An Improved, Easily Implementable, Porous Media Based Model for Deep-Fat Frying. Food and Bioproducts Processing, 2007, 85, 209-219.	1.8	131
78	Porous media characterization of breads baked using novel heating modes. Journal of Food Engineering, 2007, 79, 106-116.	2.7	86
79	Porous media approaches to studying simultaneous heat and mass transfer in food processes. II: Property data and representative results. Journal of Food Engineering, 2007, 80, 96-110.	2.7	202
80	Mathematical modeling of bread baking process. Journal of Food Engineering, 2006, 75, 78-89.	2.7	132
81	Hydraulic Permeability of Food Tissues. International Journal of Food Properties, 2006, 9, 767-780.	1.3	43
82	Heating Concentrations of Microwaves in Spherical and Cylindrical Foods. Food and Bioproducts Processing, 2005, 83, 6-13.	1.8	15
83	Heating Concentrations of Microwaves in Spherical and Cylindrical Foods. Food and Bioproducts Processing, 2005, 83, 14-24.	1.8	31
84	Microwave Power Absorption in Single - and Multiple - Item Foods. Food and Bioproducts Processing, 2003, 81, 257-265.	1.8	49
85	Computation of airflow effects on heat and mass transfer in a microwave oven. Journal of Food Engineering, 2003, 59, 181-190.	2.7	69
86	Heating effects of clock drivers in bulk, SOI, and 3-D CMOS. IEEE Electron Device Letters, 2002, 23, 716-718.	2.2	26
87	Heat Transfer to Three Canned Fluids of Different Thermo-Rheological Behaviour Under Intermittent Agitation. Food and Bioproducts Processing, 2002, 80, 20-27.	1.8	17
88	Infrared and hot-air-assisted microwave heating of foods for control of surface moisture. Journal of Food Engineering, 2002, 51, 355-364.	2.7	156
89	Heat transfer to a canned corn starch dispersion under intermittent agitation. Journal of Food Engineering, 2002, 54, 321-329.	2.7	26
90	Simulation of heat transfer to a canned corn starch dispersion subjected to axial rotation. Chemical Engineering and Processing: Process Intensification, 2001, 40, 391-399.	1.8	37

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91	Electromagnetics, heat transfer, and thermokinetics in microwave sterilization. AIChE Journal, 2001, 47, 1957-1968.	1.8	55
92	MOISTURE LOSS AS RELATED TO HEATING UNIFORMITY IN MICROWAVE PROCESSING OF SOLID FOODS. Journal of Food Process Engineering, 1999, 22, 367-382.	1.5	36
93	Moisture transport in intensive microwave heating of biomaterials: a multiphase porous media model. International Journal of Heat and Mass Transfer, 1999, 42, 1501-1512.	2.5	202
94	THERMAL FRACTURE IN A BIOMATERIAL DURING RAPID FREEZING. Journal of Thermal Stresses, 1999, 22, 275-292.	1.1	32
95	Moisture, Oil and Energy Transport During Deep-Fat Frying of Food Materials. Food and Bioproducts Processing, 1999, 77, 194-204.	1.8	82
96	HEAT AND MOISTURE TRANSFER IN BAKING OF POTATO SLABS. Drying Technology, 1999, 17, 2069-2092.	1.7	50
97	Thermal Stresses From Large Volumetric Expansion During Freezing of Biomaterials. Journal of Biomechanical Engineering, 1998, 120, 720-726.	0.6	41
98	Influence of the Dielectric Property on Microwave Oven Heating Patterns: Application to Food Materials. Journal of Microwave Power and Electromagnetic Energy, 1997, 32, 3-15.	0.4	34
99	Error estimates for approximate kinetic parameters used in food literature. Journal of Food Engineering, 1993, 18, 181-199.	2.7	54
100	Mathematical modeling of biochemical changes during processing of liquid foods and solutions. Biotechnology Progress, 1991, 7, 397-402.	1.3	14
101	Biological and Bioenvironmental Heat and Mass Transfer. , 0, , .		63
102	Handbook of Microwave Technology for Food Application. , 0, , .		172