

Jan Baeyens

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136
papers

8,265
citations

39
h-index

89
g-index

141
ext. papers

9,499
ext. citations

6.9
avg, IF

6.41
L-index

#	Paper	IF	Citations
136	Principles and potential of the anaerobic digestion of waste-activated sludge. <i>Progress in Energy and Combustion Science</i> , 2008 , 34, 755-781	33.6	1880
135	Concentrated solar power plants: Review and design methodology. <i>Renewable and Sustainable Energy Reviews</i> , 2013 , 22, 466-481	16.2	630
134	Catalytic combustion of volatile organic compounds. <i>Journal of Hazardous Materials</i> , 2004 , 109, 113-39	12.8	464
133	Thermal energy storage: Recent developments and practical aspects. <i>Progress in Energy and Combustion Science</i> , 2016 , 53, 1-40	33.6	417
132	Fundamentals, kinetics and endothermicity of the biomass pyrolysis reaction. <i>Renewable Energy</i> , 2010 , 35, 232-242	8.1	385
131	Challenges and opportunities in improving the production of bio-ethanol. <i>Progress in Energy and Combustion Science</i> , 2015 , 47, 60-88	33.6	373
130	Thermal energy storage: How previous findings determine current research priorities. <i>Energy</i> , 2012 , 39, 246-257	7.9	218
129	Impact of biochar on mineralisation of C and N from soil and willow litter and its relationship with microbial community biomass and structure. <i>Biology and Fertility of Soils</i> , 2014 , 50, 695-702	6.1	174
128	An investigation into slugging fluidized beds. <i>Chemical Engineering Science</i> , 1974 , 29, 255-265	4.4	148
127	Fluidized bed waste incinerators: Design, operational and environmental issues. <i>Progress in Energy and Combustion Science</i> , 2012 , 38, 551-582	33.6	144
126	NO _x formation and selective non-catalytic reduction (SNCR) in a fluidized bed combustor of biomass. <i>Biomass and Bioenergy</i> , 2010 , 34, 1393-1409	5.3	111
125	Modeling CFB biomass pyrolysis reactors. <i>Biomass and Bioenergy</i> , 2008 , 32, 128-139	5.3	110
124	The design of distributors for gas-fluidized beds. <i>Powder Technology</i> , 1985 , 42, 67-78	5.2	95
123	Biomass-derived aviation fuels: Challenges and perspective. <i>Progress in Energy and Combustion Science</i> , 2019 , 74, 31-49	33.6	93
122	Latent heat storage with tubular-encapsulated phase change materials (PCMs). <i>Energy</i> , 2014 , 76, 66-72	7.9	84
121	Thermogravimetric pyrolysis of waste polyethylene-terephthalate and polystyrene: A critical assessment of kinetics modelling. <i>Resources, Conservation and Recycling</i> , 2011 , 55, 772-781	11.9	83
120	Adsorption of Congo red dye on FeCoO nanoparticles. <i>Journal of Environmental Management</i> , 2019 , 238, 473-483	7.9	82

119	Polymeric cracking of waste polyethylene terephthalate to chemicals and energy. <i>Journal of the Air and Waste Management Association</i> , 2011 , 61, 721-31	2.4	82
118	Thermal degradation of PMMA in fluidised beds. <i>Waste Management</i> , 2004 , 24, 849-57	8.6	81
117	Gas fluidized beds operating at high velocities: a critical review of occurring regimes. <i>Powder Technology</i> , 2001 , 119, 269-291	5.2	79
116	Elutriation of fines from gas fluidized beds of Geldart A-type powders Effect of adding superfines. <i>Powder Technology</i> , 1992 , 71, 71-80	5.2	74
115	Using mesoporous silica materials to immobilise biocatalysis-enzymes. <i>Catalysis Communications</i> , 2005 , 6, 307-311	3.2	73
114	Effect of operating temperature on minimum fluidization velocity. <i>Powder Technology</i> , 1991 , 67, 217-220	5.2	69
113	Particle velocities and their residence time distribution in the riser of a CFB. <i>Powder Technology</i> , 2010 , 203, 187-197	5.2	66
112	Solids mixing in the riser of a circulating fluidized bed. <i>Chemical Engineering Science</i> , 2007 , 62, 2139-2153	14.4	64
111	Reviewing the potential of bio-hydrogen production by fermentation. <i>Renewable and Sustainable Energy Reviews</i> , 2020 , 131, 110023	16.2	61
110	Advanced Biosolids Treatment Using H ₂ O ₂ -Oxidation. <i>Environmental Engineering Science</i> , 2002 , 19, 27-35	3.5	59
109	Particle circulation loops in solar energy capture and storage: Gas-solid flow and heat transfer considerations. <i>Applied Energy</i> , 2016 , 161, 206-224	10.7	58
108	High-efficiency solar power towers using particle suspensions as heat carrier in the receiver and in the thermal energy storage. <i>Renewable Energy</i> , 2017 , 111, 438-446	8.1	55
107	The solids flow in the riser of a Circulating Fluidised Bed (CFB) viewed by Positron Emission Particle Tracking (PEPT). <i>Powder Technology</i> , 2008 , 183, 290-296	5.2	55
106	Pneumatic drying: the use of large-scale experimental data in a design procedure. <i>Powder Technology</i> , 1995 , 83, 139-148	5.2	55
105	Hydrophilic membranes to replace molecular sieves in dewatering the bio-ethanol/water azeotropic mixture. <i>Separation and Purification Technology</i> , 2014 , 136, 144-149	8.3	49
104	Circulating fluidized bed heat recovery/storage and its potential to use coated phase-change-material (PCM) particles. <i>Applied Energy</i> , 2013 , 109, 505-513	10.7	49
103	Entrained phase adsorption of PCDD/F from incinerator flue gases. <i>Environmental Science & Technology</i> , 2003 , 37, 1219-24	10.3	44
102	Fluidized bed incineration of sewage sludge: a strategy for the design of the incinerator and the future for incinerator ash utilization. <i>Journal of Hazardous Materials</i> , 1994 , 37, 179-190	12.8	44

101	REMOVING POLYCYCLIC AROMATIC HYDROCARBONS FROM WATER BY ADSORPTION ON SILICAGEL. <i>Polycyclic Aromatic Compounds</i> , 2009 , 29, 160-183	1.3	43
100	Removal of PCDD/F from flue gases in fixed or moving bed adsorbers. <i>Waste Management</i> , 2004 , 24, 37-42	8.6	43
99	Macro-TGA steam-assisted gasification of lignocellulosic wastes. <i>Journal of Environmental Management</i> , 2019 , 233, 626-635	7.9	43
98	Energy analysis of a particle suspension solar combined cycle power plant. <i>Energy Conversion and Management</i> , 2018 , 163, 292-303	10.6	39
97	The residence time distribution and mixing of the gas phase in the riser of a circulating fluidized bed. <i>Powder Technology</i> , 2010 , 203, 322-330	5.2	39
96	Recent progress in genetically modified microalgae for enhanced carbon dioxide sequestration. <i>Biomass and Bioenergy</i> , 2021 , 145, 105927	5.3	39
95	Investigation of operational parameters for an industrial CFB combustor of coal, biomass and sludge. <i>Particuology: Science and Technology of Particles</i> , 2007 , 5, 247-254		38
94	Post-combustion carbon capture. <i>Renewable and Sustainable Energy Reviews</i> , 2021 , 138, 110490	16.2	37
93	Energy-Efficient Production of Cassava-Based Bio-Ethanol. <i>Advances in Bioscience and Biotechnology (Print)</i> , 2014 , 05, 925-939	0.9	35
92	Powder attrition in gas fluidized beds. <i>Powder Technology</i> , 2016 , 287, 1-11	5.2	33
91	Hybrid operation of the bio-ethanol fermentation. <i>Separation and Purification Technology</i> , 2015 , 149, 322-330	8.3	32
90	The solids flow in the CFB-riser quantified by single radioactive particle tracking. <i>Powder Technology</i> , 2011 , 211, 135-143	5.2	32
89	Bubbling and Slugging of Geldart Group A Powders in Small Diameter Columns. <i>Industrial & Engineering Chemistry Research</i> , 2017 , 56, 4136-4144	3.9	31
88	The Ultrafast and Continuous Fabrication of a Polydimethylsiloxane Membrane by Ultraviolet-Induced Polymerization. <i>Angewandte Chemie - International Edition</i> , 2019 , 58, 17175-17179	16.4	31
87	Particle motion in the CFB riser with special emphasis on PEPT-imaging of the bottom section. <i>Powder Technology</i> , 2009 , 196, 318-325	5.2	31
86	Mixing phenomena in a large-scale fermenter of starch to bio-ethanol. <i>Energy</i> , 2012 , 48, 380-391	7.9	29
85	The effect of bed materials on the solid/bubble motion in a fluidised bed. <i>Chemical Engineering Science</i> , 2008 , 63, 943-950	4.4	29
84	Solids flow diagram of a CFB riser using Geldart B-type powders. <i>Particuology</i> , 2012 , 10, 51-61	2.8	28

83	Hydrodynamic modelling of the axial density profile in the riser of a low-density circulating fluidized bed. <i>Canadian Journal of Chemical Engineering</i> , 2001 , 79, 422-429	2.3	28
82	Particles in a circulation loop for solar energy capture and storage. <i>Particuology</i> , 2019 , 43, 149-156	2.8	27
81	High-efficiency concentrated solar power plants need appropriate materials for high-temperature heat capture, conveying and storage. <i>Energy</i> , 2017 , 139, 52-64	7.9	27
80	Recovery and recycling of post-consumer waste materials. Part 2. Target wastes (glass beverage bottles, plastics, scrap metal and steel cans, end-of-life tyres, batteries and household hazardous waste). <i>International Journal of Sustainable Engineering</i> , 2010 , 3, 232-245	3.1	27
79	Adsorption of dioxins and furans from flue gases in an entrained flow or fixed/moving bed reactor. <i>Journal of Chemical Technology and Biotechnology</i> , 2003 , 78, 213-219	3.5	27
78	Ultrafast and ultrahigh adsorption of furfural from aqueous solution via covalent organic framework-300. <i>Separation and Purification Technology</i> , 2019 , 220, 283-292	8.3	25
77	Thermo-mechanical analysis of copper-encapsulated NaNO ₃ /KNO ₃ . <i>Chemical Engineering Research and Design</i> , 2015 , 93, 224-231	5.5	24
76	The convection heat transfer coefficient in a Circulating Fluidized Bed (CFB). <i>Advanced Powder Technology</i> , 2014 , 25, 710-715	4.6	24
75	Solid particle motion in a standpipe as observed by Positron Emission Particle Tracking. <i>Powder Technology</i> , 2009 , 194, 58-66	5.2	24
74	Heat transfer to the riser-wall of a circulating fluidised bed (CFB). <i>Energy</i> , 2013 , 50, 493-500	7.9	23
73	Immobilisation behaviour of biomolecules in mesoporous silica materials. <i>Catalysis Communications</i> , 2005 , 6, 591-595	3.2	23
72	Effect of the grid-velocity on attrition in gas fluidized beds. <i>Canadian Journal of Chemical Engineering</i> , 1999 , 77, 738-744	2.3	23
71	Performance of molten salt solar power towers in Chile. <i>Journal of Renewable and Sustainable Energy</i> , 2013 , 5, 053142	2.5	22
70	Removal of PCDD/F from incinerator flue gases by entrained-phase adsorption. <i>Journal of the Air and Waste Management Association</i> , 2002 , 52, 1378-88	2.4	22
69	Reviewing the thermo-chemical recycling of waste polyurethane foam. <i>Journal of Environmental Management</i> , 2021 , 278, 111527	7.9	22
68	Correlation of PCDD/F emissions with operating parameters of municipal solid waste incinerators. <i>Journal of the Air and Waste Management Association</i> , 2001 , 51, 718-24	2.4	21
67	The chemical CO capture by carbonation-decarbonation cycles. <i>Journal of Environmental Management</i> , 2020 , 260, 110054	7.9	20
66	Towards an energy-friendly and cleaner solvent-extraction of vegetable oil. <i>Journal of Environmental Management</i> , 2018 , 217, 196-206	7.9	20

65	VOC-air separations using gas membranes. <i>Journal of Chemical Technology and Biotechnology</i> , 2003 , 78, 294-297	3.5	20
64	Particle Motion in CFB Cyclones as Observed By Positron Emission Particle Tracking. <i>Industrial & Engineering Chemistry Research</i> , 2009 , 48, 253-261	3.9	19
63	Pulse jet cleaning of rigid filters: a literature review and introduction to process modelling. <i>Filtration and Separation</i> , 2004 , 41, 26-33	0.1	19
62	Combustion of chlorinated hydrocarbons in catalyst-coated sintered metal fleece reactors. <i>Journal of Chemical Technology and Biotechnology</i> , 2003 , 78, 167-172	3.5	19
61	Thermochemical Energy Storage for Power Generation on Demand. <i>Energy Technology</i> , 2016 , 4, 341-352	3.5	19
60	Operation Diagram of Circulating Fluidized Beds (CFBs). <i>Procedia Engineering</i> , 2015 , 102, 1092-1103		18
59	CFB cyclones at high temperature: Operational results and design assessment. <i>Particuology</i> , 2008 , 6, 149-156	2.8	18
58	Flue Gas Desulphurization in Circulating Fluidized Beds. <i>Energies</i> , 2019 , 12, 3908	3.1	18
57	Experiments support an improved model for particle transport in fluidized beds. <i>Scientific Reports</i> , 2017 , 7, 10178	4.9	17
56	The Voidage in a CFB Riser as Function of Solids Flux and Gas Velocity. <i>Procedia Engineering</i> , 2015 , 102, 1112-1122		17
55	The use of gas membranes for VOC-air separations. <i>Filtration and Separation</i> , 2001 , 38, 48-54	0.1	17
54	Solids mixing in a shallow cross-flow bubbling fluidized bed. <i>Chemical Engineering Science</i> , 2018 , 187, 213-222	4.4	16
53	The bubble-induced mixing in starch-to-ethanol fermenters. <i>Chemical Engineering Research and Design</i> , 2012 , 90, 2122-2128	5.5	15
52	PEPT study of particle motion for different riser exit geometries. <i>Particuology</i> , 2010 , 8, 623-630	2.8	15
51	Advances in rigid porous high temperature filters. <i>Renewable and Sustainable Energy Reviews</i> , 2021 , 139, 110713	16.2	15
50	A Particle-Driven, Ultrafast-Cured Strategy for Tuning the Network Cavity Size of Membranes with Outstanding Pervaporation Performance. <i>ACS Applied Materials & Interfaces</i> , 2020 , 12, 31887-31895	9.5	14
49	Environmental and economic assessment of vegetable oil production using membrane separation and vapor recompression. <i>Frontiers of Chemical Science and Engineering</i> , 2017 , 11, 166-176	4.5	13
48	The Ni-Mo/Al ₂ O ₃ catalyzed hydrodeoxygenation of FAME to aviation fuel. <i>Catalysis Communications</i> , 2017 , 100, 237-241	3.2	13

47	Cleaning of hot calciner exhaust gas by low-density ceramic filters. <i>Powder Technology</i> , 2000 , 111, 240-244	4.4	13
46	Bed expansion and the visible bubble flow rate in gas fluidized beds. <i>Advanced Powder Technology</i> , 1992 , 3, 163-189	4.6	13
45	Technical and economic assessment of thermal energy storage in concentrated solar power plants within a spot electricity market. <i>Renewable and Sustainable Energy Reviews</i> , 2021 , 139, 110583	16.2	13
44	Use of Particle Heat Carriers in the Stirling Engine Concept. <i>Energy Technology</i> , 2016 , 4, 401-408	3.5	12
43	The design of cyclonic pre-heaters in suspension cement kilns. <i>International Journal of Sustainable Engineering</i> , 2014 , 7, 307-312	3.1	12
42	Photovoltaics: reviewing the European Feed-in-Tariffs and changing PV efficiencies and costs. <i>Scientific World Journal, The</i> , 2014 , 2014, 404913	2.2	12
41	Recovery and recycling of post-consumer waste materials. Part 1. Generalities and target wastes (paper, cardboard and aluminium cans). <i>International Journal of Sustainable Engineering</i> , 2010 , 3, 148-158	3.1	12
40	Biosynthesis of medium chain length alkanes for bio-aviation fuel by metabolic engineered <i>Escherichia coli</i> . <i>Bioresource Technology</i> , 2017 , 239, 542-545	11	11
39	Hydrogen Production: State of Technology. <i>IOP Conference Series: Earth and Environmental Science</i> , 2020 , 544, 012011	0.3	11
38	Modelling the transport disengagement height in fluidized beds. <i>Advanced Powder Technology</i> , 2011 , 22, 155-161	4.6	10
37	Modeling and Scaleup of Reverse Osmosis Separation. <i>Environmental Engineering Science</i> , 2002 , 19, 37-45		10
36	High temperature MnO/MnO and CoO/CoO systems for thermo-chemical energy storage. <i>Journal of Environmental Management</i> , 2020 , 267, 110582	7.9	10
35	Comparing ANSYS Fluent and OpenFOAM simulations of Geldart A, B and D bubbling fluidized bed hydrodynamics. <i>International Journal of Numerical Methods for Heat and Fluid Flow</i> , 2019 , 30, 93-118	4.5	10
34	The Direct Reduction of Iron Ore with Hydrogen. <i>Sustainability</i> , 2021 , 13, 8866	3.6	9
33	A novel sintered metal fiber microfiltration of bio-ethanol fermentation broth. <i>Korean Journal of Chemical Engineering</i> , 2015 , 32, 1625-1633	2.8	8
32	Experiments support simulations by the NEPTUNE_CFD code in an Upflow Bubbling Fluidized Bed reactor. <i>Chemical Engineering Journal</i> , 2020 , 385, 123568	14.7	8
31	An energy-friendly alternative in the large-scale production of soybean oil. <i>Journal of Environmental Management</i> , 2019 , 230, 234-244	7.9	8
30	Solar processing of reactive particles up to 900°C, the SOLPART project 2018 ,		8

29	Dense upflow fluidized bed (DUFb) solar receivers of high aspect ratio: Different fluidization modes through inserting bubble rupture promoters. <i>Chemical Engineering Journal</i> , 2021 , 418, 129376	14.7	8
28	Macroscopic fluid flow conditions in spiral wound membrane elements: packed bed approach. <i>Water Science and Technology</i> , 2000 , 41, 85-91	2.2	7
27	Highly Efficient Production of 5-Hydroxymethylfurfural from Fructose via a Bromine-Functionalized Porous Catalyst under Mild Conditions. <i>Industrial & Engineering Chemistry Research</i> , 2020 , 59, 14569-14577	3.9	7
26	Thermo-chemical water splitting: Selection of priority reversible redox reactions by multi-attribute decision making. <i>Renewable Energy</i> , 2021 , 170, 800-810	8.1	7
25	Solar thermal treatment of non-metallic minerals: The potential application of the SOLPART technology 2019 ,		6
24	Pollution prevention in the pharmaceutical industry. <i>International Journal of Sustainable Engineering</i> , 2013 , 6, 344-351	3.1	6
23	Solids Flow in a Particle-in-Tube Concentrated Solar Heat Absorber. <i>Industrial & Engineering Chemistry Research</i> , 2019 , 58, 4598-4608	3.9	6
22	Scale-up considerations of the UBFB solar receiver 2019 ,		5
21	The use of ultrasound probes to monitor multi-phase behavior in opaque systems. <i>Particuology</i> , 2019 , 45, 91-97	2.8	5
20	The Potential of a Hybrid Power Plant for the Dubrovnik - Neretva County (Southern Croatia). <i>Journal of Sustainable Development of Energy, Water and Environment Systems</i> , 2015 , 3, 174-182	1.9	4
19	11CO ₂ positron emission imaging reveals the in-situ gas concentration profile as function of time and position in opaque gas-solid contacting systems. <i>Chemical Engineering Journal</i> , 2021 , 404, 126507	14.7	4
18	The fluidized bed air heat exchanger in a hybrid Brayton-cycle solar power plant 2019 ,		3
17	Choking Affects the Operation Diagram of a CFB Riser. <i>Journal of Powder Technology</i> , 2014 , 2014, 1-6		3
16	Wall-to-Bed Heat Transfer at Minimum Gas-Solid Fluidization. <i>Journal of Powder Technology</i> , 2014 , 2014, 1-8		3
15	Challenges for Design Engineers in Sustainable Engineering. <i>IOP Conference Series: Earth and Environmental Science</i> , 544 , 012010	0.3	3
14	Non-plasmonic Ni nanoparticles catalyzed visible light selective hydrogenolysis of aryl ethers in lignin under mild conditions. <i>Green Chemistry</i> ,	10	3
13	The conversion of linoleic acid into hydroxytetrahydrofuran-structured bio-lubricant. <i>Journal of Environmental Management</i> , 2021 , 291, 112692	7.9	3
12	Wall-to-Suspension Heat Transfer in a CFB Downcomer. <i>Journal of Powder Technology</i> , 2015 , 2015, 1-9		2

11	The expanding world market of generic pharmaceuticals. <i>Journal of Generic Medicines</i> , 2011 , 8, 227-239	0.2	2
10	Reviewing Fundamental CO ₂ Adsorption Characteristics of Zeolite and Activated Carbon by In-situ Measurements With Radioactively Labelled CO ₂ . <i>Separation and Purification Reviews</i> , 1-12	7.3	2
9	The Need to Accurately Define and Measure the Properties of Particles. <i>Standards</i> , 2021 , 1, 19-38		2
8	Modification of wheat straw to improve the caproate production in a cell immobilized system. <i>Bioresource Technology</i> , 2021 , 342, 125984	11	2
7	The Screening Index to Select Building-Scale Heating Systems. <i>IOP Conference Series: Earth and Environmental Science</i> , 2020 , 586, 012004	0.3	1
6	THEORY AND EXPERIMENTS FOR DISSOLVING SOLIDS IN WATER. <i>Chemical Engineering Communications</i> , 2012 , 199, 335-353	2.2	1
5	Sustainable Solar Drying of Brewer's Spent Grains: A Comparison with Conventional Electric Convective Drying. <i>Processes</i> , 2022 , 10, 339	2.9	1
4	Bio-energy Carriers as Back-up Fuel in Hybrid Solar Power Plants. <i>IOP Conference Series: Earth and Environmental Science</i> , 544, 012012	0.3	1
3	Hydrogen-enriched natural gas in a decarbonization perspective. <i>Fuel</i> , 2022 , 318, 123680	7.1	1
2	Adsorption of acid fuchsine dye from wastewater by Mg-ferrite particles. <i>Journal of Environmental Management</i> , 2022 , 317, 115427	7.9	1
1	Fluidized Bed Technology: Challenges and Perspectives. <i>IOP Conference Series: Earth and Environmental Science</i> , 2022 , 952, 012010	0.3	0