Jan Baeyens

List of Publications by Year
in descending order

Source: https://exaly.com/author-pdf/580572/publications.pdf

Version: 2024-02-01

139 papers	10,985 citations	57719 44 h-index	30894 102 g-index
141 all docs	141 docs citations	141 times ranked	10393 citing authors

#	Article	IF	Citations
1	Principles and potential of the anaerobic digestion of waste-activated sludge. Progress in Energy and Combustion Science, 2008, 34, 755-781.	15.8	2,275
2	Concentrated solar power plants: Review and design methodology. Renewable and Sustainable Energy Reviews, 2013, 22, 466-481.	8.2	839
3	Thermal energy storage: Recent developments and practical aspects. Progress in Energy and Combustion Science, 2016, 53, 1-40.	15.8	634
4	Catalytic combustion of volatile organic compounds. Journal of Hazardous Materials, 2004, 109, 113-139.	6.5	527
5	Fundamentals, kinetics and endothermicity of the biomass pyrolysis reaction. Renewable Energy, 2010, 35, 232-242.	4.3	465
6	Challenges and opportunities in improving the production of bio-ethanol. Progress in Energy and Combustion Science, 2015, 47, 60-88.	15.8	446
7	Thermal energy storage: â€œHow previous findings determine current research prioritiesâ€• Energy, 2012, 39, 246-257.	4.5	268
8	Post-combustion carbon capture. Renewable and Sustainable Energy Reviews, 2021, 138, 110490.	8.2	219
9	Impact of biochar on mineralisation of C and N from soil and willow litter and its relationship with microbial community biomass and structure. Biology and Fertility of Soils, 2014, 50, 695-702.	2.3	216
10	An investigation into slugging fluidized beds. Chemical Engineering Science, 1974, 29, 255-265.	1.9	177
11	Fluidized bed waste incinerators: Design, operational and environmental issues. Progress in Energy and Combustion Science, 2012, 38, 551-582.	15.8	173
12	Adsorption of Congo red dye on FexCo3-xO4 nanoparticles. Journal of Environmental Management, 2019, 238, 473-483.	3.8	167
13	Biomass-derived aviation fuels: Challenges and perspective. Progress in Energy and Combustion Science, 2019, 74, 31-49.	15.8	166
14	Reviewing the potential of bio-hydrogen production by fermentation. Renewable and Sustainable Energy Reviews, 2020, 131, 110023.	8.2	159
15	NOx formation and selective non-catalytic reduction (SNCR) in a fluidized bed combustor of biomass. Biomass and Bioenergy, 2010, 34, 1393-1409.	2.9	136
16	Modeling CFB biomass pyrolysis reactors. Biomass and Bioenergy, 2008, 32, 128-139.	2.9	123
17	The design of distributors for gas-fluidized beds. Powder Technology, 1985, 42, 67-78.	2.1	119
18	Recent progress in genetically modified microalgae for enhanced carbon dioxide sequestration. Biomass and Bioenergy, 2021, 145, 105927.	2.9	116

#	Article	IF	Citations
19	Latent heat storage with tubular-encapsulated phase change materials (PCMs). Energy, 2014, 76, 66-72.	4.5	114
20	Polymeric Cracking of Waste Polyethylene Terephthalate to Chemicals and Energy. Journal of the Air and Waste Management Association, 2011, 61, 721-731.	0.9	110
21	Thermogravimetric pyrolysis of waste polyethylene-terephthalate and polystyrene: A critical assessment of kinetics modelling. Resources, Conservation and Recycling, 2011, 55, 772-781.	5.3	102
22	Thermal degradation of PMMA in fluidised beds. Waste Management, 2004, 24, 849-857.	3.7	95
23	Gas fluidized beds operating at high velocities: a critical review of occurring regimes. Powder Technology, 2001, 119, 269-291.	2.1	85
24	Particle circulation loops in solar energy capture and storage: Gasâ€“solid flow and heat transfer considerations. Applied Energy, 2016, 161, 206-224.	5.1	83
25	Reviewing the thermo-chemical recycling of waste polyurethane foam. Journal of Environmental Management, 2021, 278, 111527.	3.8	82
26	Effect of operating temperature on minimum fluidization velocity. Powder Technology, 1991, 67, 217-220.	2.1	80
27	Using mesoporous silica materials to immobilise biocatalysis-enzymes. Catalysis Communications, 2005, 6, 307-311.	1.6	80
28	Elutriation of fines from gas fluidized beds of Geldart A-type powders â€” effect of adding superfines. Powder Technology, 1992, 71, 71-80.	2.1	79
29	High-efficiency solar power towers using particle suspensions as heat carrier in the receiver and in the thermal energy storage. Renewable Energy, 2017, 111, 438-446.	4.3	78
30	The Ultrafast and Continuous Fabrication of a Polydimethylsiloxane Membrane by Ultravioletâ€Induced Polymerization. Angewandte Chemie - International Edition, 2019, 58, 17175-17179.	7.2	76
31	The solids flow in the riser of a Circulating Fluidised Bed (CFB) viewed by Positron Emission Particle Tracking (PEPT). Powder Technology, 2008, 183, 290-296.	2.1	72
32	Solids mixing in the riser of a circulating fluidized bed. Chemical Engineering Science, 2007, 62, 2139-2153.	1.9	70
33	Particle velocities and their residence time distribution in the riser of a CFB. Powder Technology, 2010, 203, 187-197.	2.1	70
34	Advanced Biosolids Treatment Using H2O2-Oxidation. Environmental Engineering Science, 2002, 19, 27-35.	0.8	67
35	Pneumatic drying: the use of large-scale experimental data in a design procedure. Powder Technology, 1995, 83, 139-148.	2.1	61
36	Macro-TGA steam-assisted gasification of lignocellulosic wastes. Journal of Environmental Management, 2019, 233, 626-635.	3.8	61

#	Article	IF	Citations
37	Circulating fluidized bed heat recovery/storage and its potential to use coated phase-change-material (PCM) particles. Applied Energy, 2013, 109, 505-513.	5.1	59
38	Hydrophilic membranes to replace molecular sieves in dewatering the bio-ethanol/water azeotropic mixture. Separation and Purification Technology, 2014, 136, 144-149.	3.9	56
39	Entrained-Phase Adsorption of PCDD/F from Incinerator Flue Gases. Environmental Science & Technology, 2003, 37, 1219-1224.	4.6	51
40	Particles in a circulation loop for solar energy capture and storage. Particuology, 2019, 43, 149-156.	2.0	50
41	REMOVING POLYCYCLIC AROMATIC HYDROCARBONS FROM WATER BY ADSORPTION ON SILICAGEL. Polycyclic Aromatic Compounds, 2009, 29, 160-183.	1.4	48
42	Removal of PCDD/F from flue gases in fixed or moving bed adsorbers. Waste Management, 2004, 24, 37-42.	3.7	47
43	Energy analysis of a particle suspension solar combined cycle power plant. Energy Conversion and Management, 2018, 163, 292-303.	4.4	47
44	Fluidized bed incineration of sewage sludge: a strategy for the design of the incinerator and the future for incinerator ash utilization. Journal of Hazardous Materials, 1994, 37, 179-190.	6.5	45
45	The residence time distribution and mixing of the gas phase in the riser of a circulating fluidized bed. Powder Technology, 2010, 203, 322-330.	2.1	43
46	Powder attrition in gas fluidized beds. Powder Technology, 2016, 287, 1-11.	2.1	43
47	Ultrafast and ultrahigh adsorption of furfural from aqueous solution via covalent organic framework-300. Separation and Purification Technology, 2019, 220, 283-292.	3.9	43
48	Technical and economic assessment of thermal energy storage in concentrated solar power plants within a spot electricity market. Renewable and Sustainable Energy Reviews, 2021, 139, 110583.	8.2	43
49	Bubbling and Slugging of Geldart Group A Powders in Small Diameter Columns. Industrial & Engineering Chemistry Research, 2017, 56, 4136-4144.	1.8	41
50	Investigation of operational parameters for an industrial CFB combustor of coal, biomass and sludge. Particuology: Science and Technology of Particles, 2007, 5, 247-254.	0.4	40
51	Hybrid operation of the bio-ethanol fermentation. Separation and Purification Technology, 2015, 149, 322-330.	3.9	40
52	The Direct Reduction of Iron Ore with Hydrogen. Sustainability, 2021, 13, 8866.	1.6	40
53	Energy-Efficient Production of Cassava-Based Bio-Ethanol. Advances in Bioscience and Biotechnology (Print), 2014, 05, 925-939.	0.3	40
54	Particle motion in the CFB riser with special emphasis on PEPT-imaging of the bottom section. Powder Technology, 2009, 196, 318-325.	2.1	37

#	Article	IF	Citations
55	Recovery and recycling of post-consumer waste materials. Part 2. Target wastes (glass beverage) Tj ETQq1 1 0.784314 rgBT /Overlock	1.9	36
56	The solids flow in the CFB-riser quantified by single radioactive particle tracking. Powder Technology, 2011, 211, 135-143.	2.1	36
57	Solids flow diagram of a CFB riser using Geldart B-type powders. Particuology, 2012, 10, 51-61.	2.0	34
58	High-efficiency concentrated solar power plants need appropriate materials for high-temperature heat capture, conveying and storage. Energy, 2017, 139, 52-64.	4.5	34
59	The effect of bed materials on the solid/bubble motion in a fluidised bed. Chemical Engineering Science, 2008, 63, 943-950.	1.9	33
60	Mixing phenomena in a large-scale fermenter of starch to bio-ethanol. Energy, 2012, 48, 380-391.	4.5	33
61	The chemical CO2 capture by carbonation-decarbonation cycles. Journal of Environmental Management, 2020, 260, 110054.	3.8	31
62	Dense upflow fluidized bed (DUFB) solar receivers of high aspect ratio: Different fluidization modes through inserting bubble rupture promoters. Chemical Engineering Journal, 2021, 418, 129376.	6.6	31
63	Thermochemical Energy Storage for Power Generation on Demand. Energy Technology, 2016, 4, 341-352.	1.8	30
64	Hydrodynamic modelling of the axial density profile in the riser of a lowâ€density circulating fluidized bed. Canadian Journal of Chemical Engineering, 2001, 79, 422-429.	0.9	29
65	Adsorption of dioxins and furans from flue gases in an entrained flow or fixed/moving bed reactor. Journal of Chemical Technology and Biotechnology, 2003, 78, 213-219.	1.6	29
66	Flue Gas Desulphurization in Circulating Fluidized Beds. Energies, 2019, 12, 3908.	1.6	29
67	Thermo-chemical water splitting: Selection of priority reversible redox reactions by multi-attribute decision making. Renewable Energy, 2021, 170, 800-810.	4.3	29
68	Correlation of PCDD/F Emissions with Operating Parameters of Municipal Solid Waste Incinerators. Journal of the Air and Waste Management Association, 2001, 51, 718-724.	0.9	28
69	Solid particle motion in a standpipe as observed by Positron Emission Particle Tracking. Powder Technology, 2009, 194, 58-66.	2.1	28
70	The convection heat transfer coefficient in a Circulating Fluidized Bed (CFB). Advanced Powder Technology, 2014, 25, 710-715.	2.0	28
71	Thermo-mechanical analysis of copper-encapsulated NaNO3â€“KNO3. Chemical Engineering Research and Design, 2015, 93, 224-231.	2.7	28
72	Advances in rigid porous high temperature filters. Renewable and Sustainable Energy Reviews, 2021, 139, 110713.	8.2	28

#	Article	IF	Citations
73	Effect of the gridâ€velocity on attrition in gas fluidized beds. Canadian Journal of Chemical Engineering, 1999, 77, 738-744.	0.9	27
74	A Particle-Driven, Ultrafast-Cured Strategy for Tuning the Network Cavity Size of Membranes with Outstanding Pervaporation Performance. ACS Applied Materials & Interfaces, 2020, 12, 31887-31895.	4.0	27
75	Particle Motion in CFB Cyclones as Observed By Positron Emission Particle Tracking. Industrial & Engineering Chemistry Research, 2009, 48, 253-261.	1.8	26
76	Hydrogen Production: State of Technology. IOP Conference Series: Earth and Environmental Science, 2020, 544, 012011.	0.2	26
77	Hydrogen-enriched natural gas in a decarbonization perspective. Fuel, 2022, 318, 123680.	3.4	26
78	Removal of PCDD/F from Incinerator Flue Gases by Entrained-Phase Adsorption. Journal of the Air and Waste Management Association, 2002, 52, 1378-1388.	0.9	24
79	Performance of molten salt solar power towers in Chile. Journal of Renewable and Sustainable Energy, 2013, 5, 053142.	0.8	24
80	Towards an energy-friendly and cleaner solvent-extraction of vegetable oil. Journal of Environmental Management, 2018, 217, 196-206.	3.8	24
81	VOC-air separations using gas membranes. Journal of Chemical Technology and Biotechnology, 2003, 78, 294-297.	1.6	23
82	Immobilisation behaviour of biomolecules in mesoporous silica materials. Catalysis Communications, 2005, 6, 591-595.	1.6	23
83	Heat transfer to the riser-wall of a circulating fluidised bed (CFB). Energy, 2013, 50, 493-500.	4.5	23
84	Combustion of chlorinated hydrocarbons in catalyst-coated sintered metal fleece reactors. Journal of Chemical Technology and Biotechnology, 2003, 78, 167-172.	1.6	22
85	Pulse jet cleaning of rigid filters: a literature review and introduction to process modelling. Filtration and Separation, 2004, 41, 26-33.	0.2	22
86	Sustainable Solar Drying of Brewerâ€™s Spent Grains: A Comparison with Conventional Electric Convective Drying. Processes, 2022, 10, 339.	1.3	22
87	The Voidage in a CFB Riser as Function of Solids Flux and Gas Velocity. Procedia Engineering, 2015, 102, 1112-1122.	1.2	21
88	Experiments support an improved model for particle transport in fluidized beds. Scientific Reports, 2017, 7, 10178.	1.6	21
89	The Ni-Mo/Î³-Al2O3 catalyzed hydrodeoxygenation of FAME to aviation fuel. Catalysis Communications, 2017, 100, 237-241.	1.6	21
90	Solids mixing in a shallow cross-flow bubbling fluidized bed. Chemical Engineering Science, 2018, 187, 213-222.	1.9	21

#	Article	IF	Citations
91	High temperature Mn2O3/Mn3O4 and Co3O4/CoO systems for thermo-chemical energy storage. Journal of Environmental Management, 2020, 267, 110582.	3.8	21
92	The use of gas membranes for VOC-air separations. Filtration and Separation, 2001, 38, 48-54.	0.2	20
93	Operation Diagram of Circulating Fluidized Beds (CFBs). Procedia Engineering, 2015, 102, 1092-1103.	1.2	20
94	CFB cyclones at high temperature: Operational results and design assessment. Particuology, 2008, 6, 149-156.	2.0	19
95	Cleaning of hot calciner exhaust gas by low-density ceramic filters. Powder Technology, 2000, 111, 240-244.	2.1	18
96	PEPT study of particle motion for different riser exit geometries. Particuology, 2010, 8, 623-630.	2.0	18
97	The bubble-induced mixing in starch-to-ethanol fermenters. Chemical Engineering Research and Design, 2012, 90, 2122-2128.	2.7	18
98	Photovoltaics: Reviewing the European Feed-in-Tariffs and Changing PV Efficiencies and Costs. Scientific World Journal, The, 2014, 2014, 1-10.	0.8	17
99	Comparing ANSYS Fluent^{Â®} and OpenFOAM^{Â®} simulations of Geldart A, B and D bubbling fluidized bed hydrodynamics. International Journal of Numerical Methods for Heat and Fluid Flow, 2019, 30, 93-118.	1.6	17
100	Adsorption of acid fuchsine dye from wastewater by Mg-ferrite particles. Journal of Environmental Management, 2022, 317, 115427.	3.8	17
101	Non-plasmonic Ni nanoparticles catalyzed visible light selective hydrogenolysis of aryl ethers in lignin under mild conditions. Green Chemistry, 2021, 23, 7780-7789.	4.6	16
102	Use of Particle Heat Carriers in the Stirling Engine Concept. Energy Technology, 2016, 4, 401-408.	1.8	15
103	Environmental and economic assessment of vegetable oil production using membrane separation and vapor recompression. Frontiers of Chemical Science and Engineering, 2017, 11, 166-176.	2.3	15
104	Biosynthesis of medium chain length alkanes for bio-aviation fuel by metabolic engineered Escherichia coli. Bioresource Technology, 2017, 239, 542-545.	4.8	15
105	Recovery and recycling of post-consumer waste materials. Part 1. Generalities and target wastes (paper, cardboard and aluminium cans). International Journal of Sustainable Engineering, 2010, 3, 148-158.	1.9	14
106	The design of cyclonic pre-heaters in suspension cement kilns. International Journal of Sustainable Engineering, 2014, 7, 307-312.	1.9	14
107	Bed expansion and the visible bubble flow rate in gas fluidized beds. Advanced Powder Technology, 1992, 3, 163-189.	2.0	13
108	Experiments support simulations by the NEPTUNE_CFD code in an Upflow Bubbling Fluidized Bed reactor. Chemical Engineering Journal, 2020, 385, 123568.	6.6	13

#	Article	IF	Citations
109	Modelling the transport disengagement height in fluidized beds. Advanced Powder Technology, 2011, 22, 155-161.	2.0	12
110	Modeling and Scaleup of Reverse Osmosis Separation. Environmental Engineering Science, 2002, 19, 37-45.	0.8	11
111	Solar thermal treatment of non-metallic minerals: The potential application of the SOLPART technology. AIP Conference Proceedings, 2019, , .	0.3	11
112	An energy-friendly alternative in the large-scale production of soybean oil. Journal of Environmental Management, 2019, 230, 234-244.	3.8	11
113	Solar processing of reactive particles up to 900Â°C, the SOLPART project. AIP Conference Proceedings, 2018, , .	0.3	10
114	Highly Efficient Production of 5-Hydroxymethylfurfural from Fructose via a Bromine-Functionalized Porous Catalyst under Mild Conditions. Industrial & Engineering Chemistry Research, 2020, 59, 14569-14577.	1.8	10
115	11CO2 positron emission imaging reveals the in-situ gas concentration profile as function of time and position in opaque gas-solid contacting systems. Chemical Engineering Journal, 2021, 404, 126507.	6.6	10
116	The Need to Accurately Define and Measure the Properties of Particles. Standards, 2021, 1, 19-38.	0.6	10
117	A novel sintered metal fiber microfiltration of bio-ethanol fermentation broth. Korean Journal of Chemical Engineering, 2015, 32, 1625-1633.	1.2	9
118	Solids Flow in a â€œParticle-in-Tubeâ€•Concentrated Solar Heat Absorber. Industrial & Engineering Chemistry Research, 2019, 58, 4598-4608.	1.8	9
119	Reviewing Fundamental CO₂ Adsorption Characteristics of Zeolite and Activated Carbon by In-situ Measurements With Radioactively Labelled CO₂. Separation and Purification Reviews, 2022, 51, 318-329.	2.8	8
120	The Potential of a Hybrid Power Plant for the Dubrovnik - Neretva County (Southern Croatia). Journal of Sustainable Development of Energy, Water and Environment Systems, 2015, 3, 174-182.	0.9	8
121	Macroscopic fluid flow conditions in spiral wound membrane elements: packed bed approach. Water Science and Technology, 2000, 41, 85-91.	1.2	7
122	Pollution prevention in the pharmaceutical industry. International Journal of Sustainable Engineering, 2013, 6, 344-351.	1.9	7
123	The conversion of linoleic acid into hydroxytetrahydrofuran-structured bio-lubricant. Journal of Environmental Management, 2021, 291, 112692.	3.8	7
124	Scale-up considerations of the UBFB solar receiver. AIP Conference Proceedings, 2019, , .	0.3	6
125	The use of ultrasound probes to monitor multi-phase behavior in opaque systems. Particuology, 2019, 45, 91-97.	2.0	6
126	Modification of wheat straw to improve the caproate production in a cell immobilized system. Bioresource Technology, 2021, 342, 125984.	4.8	6

#	Article	IF	Citations
127	The steam-assisted calcination of limestone and dolomite for energy savings and to foster solar calcination processes. Journal of Cleaner Production, 2022, 363, 132640.	4.6	6
128	The â€œScreening Indexâ€•to Select Building-Scale Heating Systems. IOP Conference Series: Earth and Environmental Science, 2020, 586, 012004.	0.2	5
129	Water Splitting by MnOx/Na2CO3 Reversible Redox Reactions. Sustainability, 2022, 14, 7597.	1.6	5
130	Choking Affects the Operation Diagram of a CFB Riser. Journal of Powder Technology, 2014, 2014, 1-6.	0.4	4
131	Wall-to-Bed Heat Transfer at Minimum Gas-Solid Fluidization. Journal of Powder Technology, 2014, 2014, 1-8.	0.4	4
132	The fluidized bed air heat exchanger in a hybrid Brayton-cycle solar power plant. AIP Conference Proceedings, 2019, , .	0.3	4
133	THEORY AND EXPERIMENTS FOR DISSOLVING SOLIDS IN WATER. Chemical Engineering Communications, 2012, 199, 335-353.	1.5	3
134	Challenges for Design Engineers in Sustainable Engineering. IOP Conference Series: Earth and Environmental Science, 0, 544, 012010.	0.2	3
135	The expanding world market of generic pharmaceuticals. Journal of Generic Medicines, 2011, 8, 227-239.	0.0	2
136	Wall-to-Suspension Heat Transfer in a CFB Downcomer. Journal of Powder Technology, 2015, 2015, 1-9.	0.4	2
137	Bio-energy Carriers as Back-up Fuel in Hybrid Solar Power Plants. IOP Conference Series: Earth and Environmental Science, 0, 544, 012012.	0.2	2
138	Fluidized Bed Technology: Challenges and Perspectives. IOP Conference Series: Earth and Environmental Science, 2022, 952, 012010.	0.2	2
139	Next-CSP concept with particle receiver applied to a 150 MWe solar tower. AIP Conference Proceedings, 2022, , .	0.3	1