

Henrik Thunman

List of Publications by Year in descending order

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Version: 2024-02-01

101
papers

4,265
citations

101543

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103
docs citations

103
times ranked

2989
citing authors

#	ARTICLE	IF	CITATIONS
1	Fluidized bed steam cracking of rapeseed oil: exploring the direct production of the molecular building blocks for the plastics industry. <i>Biomass Conversion and Biorefinery</i> , 2023, 13, 14511-14522.	4.6	1
2	Achieving Adequate Circulation in Chemical Looping Combustionâ€™Design Proposal for a 200 MW_{th} Chemical Looping Combustion Circulating Fluidized Bed Boiler. <i>Energy & Fuels</i> , 2022, 36, 9588-9615.	5.1	22
3	Thermochemical conversion of polyethylene in a fluidized bed: Impact of transition metal-induced oxygen transport on product distribution. <i>Journal of Analytical and Applied Pyrolysis</i> , 2022, 163, 105476.	5.5	12
4	Unraveling the hydrocracking capabilities of fluidized bed systems operated with natural ores as bed materials. <i>Journal of Analytical and Applied Pyrolysis</i> , 2022, 166, 105603.	5.5	5
5	Steam gasification of biomass â€™ Typical gas quality and operational strategies derived from industrial-scale plants. <i>Fuel Processing Technology</i> , 2021, 212, 106609.	7.2	77
6	Development of Oxygen Transport Properties by Olivine and Feldspar in Industrial-Scale Dual Fluidized Bed Gasification of Woody Biomass. <i>Energy & Fuels</i> , 2021, 35, 9424-9436.	5.1	9
7	Production of Negative-Emissions Steel Using a Reducing Gas Derived from DFB Gasification. <i>Energies</i> , 2021, 14, 4835.	3.1	5
8	Mapping the Effects of Potassium on Fuel Conversion in Industrial-Scale Fluidized Bed Gasifiers and Combustors. <i>Catalysts</i> , 2021, 11, 1380.	3.5	2
9	A fast-solving particle model for thermochemical conversion of biomass. <i>Combustion and Flame</i> , 2020, 213, 117-131.	5.2	25
10	Industrial-Scale Benzene Adsorption: Assessment of a Baseline One-Dimensional Temperature Swing Model against Online Industrial Data. <i>Industrial & Engineering Chemistry Research</i> , 2020, 59, 12239-12249.	3.7	7
11	Effects of bed aging on temperature signals from fixed-bed adsorbers during industrial operation. <i>Results in Engineering</i> , 2020, 8, 100156.	5.1	4
12	Magnetic separation of ilmenite used as oxygen carrier during combustion of biomass and the effect of ash layer buildup on its activity and mechanical strength. <i>Fuel</i> , 2020, 269, 117470.	6.4	36
13	Shedding light on the governing mechanisms for insufficient CO and H ₂ burnout in the presence of potassium, chlorine and sulfur. <i>Fuel</i> , 2020, 273, 117762.	6.4	19
14	Dual Fluidized Bed Gasification Configurations for Carbon Recovery from Biomass. <i>Energy & Fuels</i> , 2020, 34, 16187-16200.	5.1	8
15	Circular use of plastics-transformation of existing petrochemical clusters into thermochemical recycling plants with 100% plastics recovery. <i>Sustainable Materials and Technologies</i> , 2019, 22, e00124.	3.3	34
16	Methane synthesis. , 2019, , 221-243.		6
17	The GoBiGas plant. , 2019, , 455-474.		3
18	Impacts of Bed Material Activation and Fuel Moisture Content on the Gasification Rate of Biomass Char in a Fluidized Bed. <i>Industrial & Engineering Chemistry Research</i> , 2019, 58, 4802-4809.	3.7	5

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19	Economic assessment of advanced biofuel production via gasification using cost data from the GoBiGas plant. <i>Energy Science and Engineering</i> , 2019, 7, 217-229.	4.0	48
20	Thermochemical Recycling of Automotive Shredder Residue by Chemical-Looping Gasification Using the Generated Ash as Oxygen Carrier. <i>Energy & Fuels</i> , 2019, 33, 11552-11566.	5.1	12
21	Self-Cleaning Surfaces for Heat Recovery During Industrial Hydrocarbon-Rich Gas Cooling: An Experimental and Numerical Study. <i>AIChE Journal</i> , 2019, 65, 317-325.	3.6	10
22	Bark as feedstock for dual fluidized bed gasifiers-Operability, efficiency, and economics. <i>International Journal of Energy Research</i> , 2019, 43, 1171-1190.	4.5	23
23	Fate of Polycyclic Aromatic Hydrocarbons during Tertiary Tar Formation in Steam Gasification of Biomass. <i>Energy & Fuels</i> , 2018, 32, 3499-3509.	5.1	21
24	Upscaling Effects on Char Conversion in Dual Fluidized Bed Gasification. <i>Energy & Fuels</i> , 2018, 32, 5933-5943.	5.1	8
25	Effect of ash circulation on the performance of a dual fluidized bed gasification system. <i>Biomass and Bioenergy</i> , 2018, 115, 45-55.	5.7	19
26	Advanced biofuel production via gasification – lessons learned from 200 man-years of research activity with Chalmers' research gasifier and the GoBiGas demonstration plant. <i>Energy Science and Engineering</i> , 2018, 6, 6-34.	4.0	134
27	Bed material as a catalyst for char gasification: The case of ash-coated olivine activated by K and S addition. <i>Fuel</i> , 2018, 224, 85-93.	6.4	38
28	Comparing the structural development of sand and rock ilmenite during long-term exposure in a biomass fired 12 MWth CFB-boiler. <i>Fuel Processing Technology</i> , 2018, 171, 39-44.	7.2	31
29	Valorization of Automobile Shredder Residue Using Indirect Gasification. <i>Energy & Fuels</i> , 2018, 32, 12795-12804.	5.1	13
30	Mechanism for Migration and Layer Growth of Biomass Ash on Ilmenite Used for Oxygen Carrier Aided Combustion. <i>Energy & Fuels</i> , 2018, 32, 8845-8856.	5.1	54
31	Influence of In-Bed Catalysis by Ash-Coated Olivine on Tar Formation in Steam Gasification of Biomass. <i>Energy & Fuels</i> , 2018, 32, 9592-9604.	5.1	26
32	Applicability of a kinetic model for catalytic conversion of tar and light hydrocarbons using process-activated ilmenite. <i>Fuel</i> , 2018, 231, 8-17.	6.4	5
33	Mass transfer under segregation conditions in fluidized beds. <i>Fuel</i> , 2017, 195, 105-112.	6.4	14
34	Validation of the oxygen buffering ability of bed materials used for OCAC in a large scale CFB boiler. <i>Powder Technology</i> , 2017, 316, 462-468.	4.2	26
35	Efficiency Comparison of Large-Scale Standalone, Centralized, and Distributed Thermochemical Biorefineries. <i>Energy Technology</i> , 2017, 5, 1435-1448.	3.8	25
36	Performance of large-scale biomass gasifiers in a biorefinery, a state-of-the-art reference. <i>International Journal of Energy Research</i> , 2017, 41, 2001-2019.	4.5	76

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37	Experience of more than 1000 h of operation with oxygen carriers and solid biomass at large scale. <i>Applied Energy</i> , 2017, 190, 1174-1183.	10.1	64
38	A conversion-class model for describing fuel conversion in large-scale fluidized bed units. <i>Fuel</i> , 2017, 197, 42-50.	6.4	3
39	Volatile gases from biomass pyrolysis under conditions relevant for fluidized bed gasifiers. <i>Journal of Analytical and Applied Pyrolysis</i> , 2017, 127, 57-67.	5.5	17
40	Control of the solids retention time by multi-staging a fluidized bed reactor. <i>Fuel Processing Technology</i> , 2017, 167, 171-182.	7.2	3
41	The role of fuel mixing on char conversion in a fluidized bed. <i>Powder Technology</i> , 2017, 316, 677-686.	4.2	17
42	Use of alkali-feldspar as bed material for upgrading a biomass-derived producer gas from a gasifier. <i>Chemical Engineering Journal</i> , 2016, 295, 80-91.	12.7	35
43	Mechanism and Kinetic Modeling of Catalytic Upgrading of a Biomass-Derived Raw Gas: An Application with Ilmenite as Catalyst. <i>Industrial & Engineering Chemistry Research</i> , 2016, 55, 5843-5853.	3.7	8
44	Impact of Biomass Ash–Bauxite Bed Interactions on an Indirect Biomass Gasifier. <i>Energy & Fuels</i> , 2016, 30, 4044-4052.	5.1	15
45	Process Simulation of Dual Fluidized Bed Gasifiers Using Experimental Data. <i>Energy & Fuels</i> , 2016, 30, 4017-4033.	5.1	19
46	Influence of Fuel Ash Characteristics on the Release of Potassium, Chlorine, and Sulfur from Biomass Fuels under Steam-Fluidized Bed Gasification Conditions. <i>Energy & Fuels</i> , 2016, 30, 10435-10442.	5.1	20
47	Importance of Decomposition Reactions for Catalytic Conversion of Tar and Light Hydrocarbons: An Application with an Ilmenite Catalyst. <i>Industrial & Engineering Chemistry Research</i> , 2016, 55, 11900-11909.	3.7	12
48	Improved syngas processing for enhanced Bio-SNG production: A techno-economic assessment. <i>Energy</i> , 2016, 101, 380-389.	8.8	50
49	Comparing Active Bed Materials in a Dual Fluidized Bed Biomass Gasifier: Olivine, Bauxite, Quartz-Sand, and Ilmenite. <i>Energy & Fuels</i> , 2016, 30, 4848-4857.	5.1	76
50	Gasification Reaction Pathways of Condensable Hydrocarbons. <i>Energy & Fuels</i> , 2016, 30, 4951-4959.	5.1	5
51	Influence of surrounding conditions and fuel size on the gasification rate of biomass char in a fluidized bed. <i>Fuel Processing Technology</i> , 2016, 144, 323-333.	7.2	33
52	Well-to-wheel analysis of bio-methane via gasification, in heavy duty engines within the transport sector of the European Union. <i>Applied Energy</i> , 2016, 170, 445-454.	10.1	63
53	Using a manganese ore as catalyst for upgrading biomass derived gas. <i>Biomass Conversion and Biorefinery</i> , 2015, 5, 75.	4.6	3
54	Experimental Investigation of Volatiles–Bed Contact in a 4 MW Bubbling Bed Reactor of a Dual Fluidized Bed Gasifier. <i>Energy & Fuels</i> , 2015, 29, 6456-6464.	5.1	17

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55	Challenges and Opportunities in the Eulerian Approach to Numerical Simulations of Fixed-bed Combustion of Biomass. <i>Procedia Engineering</i> , 2015, 102, 1573-1582.	1.2	5
56	Conversion of Condensable Hydrocarbons in a Dual Fluidized Bed Biomass Gasifier. <i>Energy & Fuels</i> , 2015, 29, 6465-6475.	5.1	22
57	Experimental and numerical investigation of the dynamics of loop seals in a large-scale DFB system under hot conditions. <i>AIChE Journal</i> , 2015, 61, 3580-3593.	3.6	8
58	Characteristics of olivine as a bed material in an indirect biomass gasifier. <i>Chemical Engineering Journal</i> , 2015, 279, 555-566.	12.7	92
59	Diversity of chemical composition and combustion reactivity of various biomass fuels. <i>Fuel</i> , 2015, 147, 161-169.	6.4	43
60	Production of Activated Carbon within the Dual Fluidized Bed Gasification Process. <i>Industrial & Engineering Chemistry Research</i> , 2015, 54, 3761-3766.	3.7	4
61	Design of an integrated dryer and conveyor belt for woody biofuels. <i>Biomass and Bioenergy</i> , 2015, 77, 92-109.	5.7	41
62	Ash Properties of Ilmenite Used as Bed Material for Combustion of Biomass in a Circulating Fluidized Bed Boiler. <i>Energy & Fuels</i> , 2014, 28, 7672-7679.	5.1	82
63	Effects of Steam on the Release of Potassium, Chlorine, and Sulfur during Char Conversion, Investigated under Dual-Fluidized-Bed Gasification Conditions. <i>Energy & Fuels</i> , 2014, 28, 6953-6965.	5.1	18
64	Using Ilmenite To Reduce the Tar Yield in a Dual Fluidized Bed Gasification System. <i>Energy & Fuels</i> , 2014, 28, 2632-2644.	5.1	60
65	Online Measurement of Elemental Yields, Oxygen Transport, Condensable Compounds, and Heating Values in Gasification Systems. <i>Energy & Fuels</i> , 2014, 28, 5892-5901.	5.1	27
66	Terahertz Spectroscopy for Real-Time Monitoring of Water Vapor and CO Levels in the Producer Gas From an Industrial Biomass Gasifier. <i>IEEE Transactions on Terahertz Science and Technology</i> , 2014, 4, 722-733.	3.1	10
67	Investigation of Natural and Synthetic Bed Materials for Their Utilization in Chemical Looping Reforming for Tar Elimination in Biomass-Derived Gasification Gas. <i>Energy & Fuels</i> , 2014, 28, 3833-3840.	5.1	53
68	Method for online measurement of the CHON composition of raw gas from biomass gasifier. <i>Applied Energy</i> , 2014, 113, 932-945.	10.1	7
69	Using an oxygen-carrier as bed material for combustion of biomass in a 12-MWth circulating fluidized-bed boiler. <i>Fuel</i> , 2013, 113, 300-309.	6.4	108
70	A computationally efficient particle submodel for CFD-simulations of fixed-bed conversion. <i>Applied Energy</i> , 2013, 112, 808-817.	10.1	35
71	Ilmenite and Nickel as Catalysts for Upgrading of Raw Gas Derived from Biomass Gasification. <i>Energy & Fuels</i> , 2013, 27, 997-1007.	5.1	61
72	Exergy-based comparison of indirect and direct biomass gasification technologies within the framework of bio-SNG production. <i>Biomass Conversion and Biorefinery</i> , 2013, 3, 337-352.	4.6	24

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73	CFD simulations of biofuel bed conversion: A submodel for the drying and devolatilization of thermally thick wood particles. <i>Combustion and Flame</i> , 2013, 160, 417-431.	5.2	64
74	Evaluation of Performance of Industrial-Scale Dual Fluidized Bed Gasifiers Using the Chalmers 2â€“4-MW_{th} Gasifier. <i>Energy & Fuels</i> , 2013, 27, 6665-6680.	5.1	104
75	Assessment of the Solid-Phase Adsorption Method for Sampling Biomass-Derived Tar in Industrial Environments. <i>Energy & Fuels</i> , 2013, 27, 7569-7578.	5.1	65
76	Transformation and Release of Potassium, Chlorine, and Sulfur from Wheat Straw under Conditions Relevant to Dual Fluidized Bed Gasification. <i>Energy & Fuels</i> , 2013, 27, 7510-7520.	5.1	52
77	Producer gas cleaning in a dual fluidized bed reformerâ€™a comparative study of performance with ilmenite and a manganese oxide as catalysts. <i>Biomass Conversion and Biorefinery</i> , 2012, 2, 245-252.	4.6	7
78	Use of Nickel Oxide as a Catalyst for Tar Elimination in a Chemical-Looping Reforming Reactor Operated with Biomass Producer Gas. <i>Industrial & Engineering Chemistry Research</i> , 2012, 51, 16610-16616.	3.7	35
79	Extending existing combined heat and power plants for synthetic natural gas production. <i>International Journal of Energy Research</i> , 2012, 36, 670-681.	4.5	35
80	Manganese oxide as catalyst for tar cleaning of biomass-derived gas. <i>Biomass Conversion and Biorefinery</i> , 2012, 2, 133-140.	4.6	26
81	Measures to Reduce Grate Material Wear in Fixed-Bed Combustion. <i>Energy & Fuels</i> , 2011, 25, 1387-1395.	5.1	6
82	Continuous Catalytic Tar Reforming of Biomass Derived Raw Gas with Simultaneous Catalyst Regeneration. <i>Industrial & Engineering Chemistry Research</i> , 2011, 50, 11553-11562.	3.7	75
83	On-line monitoring of fuel moisture-content in biomass-fired furnaces by measuring relative humidity of the flue gases. <i>Chemical Engineering Research and Design</i> , 2011, 89, 2470-2476.	5.6	25
84	CFD modelling of bed shrinkage and channelling in fixed-bed combustion. <i>Combustion and Flame</i> , 2011, 158, 988-999.	5.2	70
85	Characterization and prediction of biomass pyrolysis products. <i>Progress in Energy and Combustion Science</i> , 2011, 37, 611-630.	31.2	609
86	Models for gaseous radiative heat transfer applied to oxy-fuel conditions in boilers. <i>International Journal of Heat and Mass Transfer</i> , 2010, 53, 220-230.	4.8	118
87	Highly efficient electricity generation from biomass by integration and hybridization with combined cycle gas turbine (CCGT) plants for natural gas. <i>Energy</i> , 2010, 35, 4042-4052.	8.8	45
88	Process analysis of an oxygen lean oxy-fuel power plant with co-production of synthesis gas. <i>Energy Conversion and Management</i> , 2009, 50, 279-286.	9.2	19
89	Estimation of gas phase mixing in packed beds. <i>Combustion and Flame</i> , 2008, 153, 137-148.	5.2	18
90	Sensitivity Analysis of a Fixed Bed Combustion Model. <i>Energy & Fuels</i> , 2007, 21, 1493-1503.	5.1	40

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91	Influence of intraparticle gradients in modeling of fixed bed combustion. <i>Combustion and Flame</i> , 2007, 149, 49-62.	5.2	68
92	Reactor residence time analysis with CFD. <i>Progress in Computational Fluid Dynamics</i> , 2006, 6, 241.	0.2	18
93	Influence of size and density of fuel on combustion in a packed bed. <i>Proceedings of the Combustion Institute</i> , 2005, 30, 2939-2946.	3.9	65
94	Separation of drying and devolatilization during conversion of solid fuels. <i>Combustion and Flame</i> , 2004, 137, 242-250.	5.2	38
95	Co-current and counter-current fixed bed combustion of biofuel—a comparison. <i>Fuel</i> , 2003, 82, 275-283.	6.4	72
96	Thermal conductivity of wood—models for different stages of combustion. <i>Biomass and Bioenergy</i> , 2002, 23, 47-54.	5.7	72
97	Modeling of the combustion front in a countercurrent fuel converter. <i>Proceedings of the Combustion Institute</i> , 2002, 29, 511-518.	3.9	16
98	Combustion of wood particles—a particle model for eulerian calculations. <i>Combustion and Flame</i> , 2002, 129, 30-46.	5.2	138
99	Estimation of Solids Mixing in a Fluidized-Bed Combustor. <i>Industrial & Engineering Chemistry Research</i> , 2002, 41, 4663-4673.	3.7	70
100	Ignition and propagation of a reaction front in cross-current bed combustion of wet biofuels. <i>Fuel</i> , 2001, 80, 473-481.	6.4	77
101	Composition of Volatile Gases and Thermochemical Properties of Wood for Modeling of Fixed or Fluidized Beds. <i>Energy & Fuels</i> , 2001, 15, 1488-1497.	5.1	179