Schalk Cloete

List of Publications by Year
in descending order

100 papers	2,370 citations	185998 28 h-index	264894 42 g-index
101 all docs	101 docs citations	101 times ranked	1515 citing authors

#	Article	IF	Citations
1	Use of CaMn_{0.875}Ti_{0.125}O₃as Oxygen Carrier in Chemical-Looping with Oxygen Uncoupling. Energy & Fuels, 2009, 23, 5276-5283.	2.5	151
2	Review on Reactor Configurations for Adsorption-Based CO₂ Capture. Industrial & Engineering Chemistry Research, 2021, 60, 3779-3798.	1.8	93
3	Heat transfer to a gas from densely packed beds of monodisperse spherical particles. Chemical Engineering Journal, 2017, 314, 27-37.	6.6	71
4	Techno-economic assessment of blue and green ammonia as energy carriers in a low-carbon future. Energy Conversion and Management, 2022, 255, 115312.	4.4	62
5	CFD modeling of plume and free surface behavior resulting from a sub-sea gas release. Applied Ocean Research, 2009, 31, 220-225.	1.8	61
6	Heat transfer to a gas from densely packed beds of cylindrical particles. Chemical Engineering Science, 2017, 172, 1-12.	1.9	58
7	Sorbents screening for post-combustion CO2 capture via combined temperature and pressure swing adsorption. Chemical Engineering Journal, 2020, 380, 122201.	6.6	55
8	The generality of the standard 2D TFM approach in predicting bubbling fluidized bed hydrodynamics. Powder Technology, 2013, 235, 735-746.	2.1	54
9	Investigation into the effect of simulating a 3D cylindrical fluidized bed reactor on a 2D plane. Powder Technology, 2013, 239, 21-35.	2.1	53
10	Grid independence behaviour of fluidized bed reactor simulations using the Two Fluid Model: Effect of particle size. Powder Technology, 2015, 269, 153-165.	2.1	53
11	The swing adsorption reactor cluster for post-combustion CO2 capture from cement plants. Journal of Cleaner Production, 2019, 223, 692-703.	4.6	52
12	Review of pressurized chemical looping processes for power generation and chemical production with integrated CO2 capture. Fuel Processing Technology, 2021, 214, 106684.	3.7	52
13	Development and verification of anisotropic drag closures for filtered Two Fluid Models. Chemical Engineering Science, 2018, 192, 930-954.	1.9	50
14	Efficient hydrogen production with CO2 capture using gas switching reforming. Energy, 2019, 185, 372-385.	4.5	50
15	On capital utilization in the hydrogen economy: The quest to minimize idle capacity in renewables-rich energy systems. International Journal of Hydrogen Energy, 2021, 46, 169-188.	3.8	49
16	Hydrogen production with integrated CO 2 captureÂin a novel gas switching reforming reactor:ÂProof-of-concept. International Journal of Hydrogen Energy, 2017, 42, 14367-14379.	3.8	45
17	Performance evaluation of a complete Lagrangian KTGF approach for dilute granular flow modelling. Powder Technology, 2012, 226, 43-52.	2.1	44
18	Experimental Demonstration of a Novel Gas Switching Combustion Reactor for Power Production with Integrated CO₂ Capture. Industrial & Engineering Chemistry Research, 2013, 52, 14241-14250.	1.8	44

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19	A fine resolution parametric study on the numerical simulation of gasâ€“solid flows in a periodic riser section. Powder Technology, 2011, 205, 103-111.	2.1	40
20	Hydrogen production with integrated CO_2 capture in a membrane assisted gas switching reforming reactor: Proof-of-Concept. International Journal of Hydrogen Energy, 2018, 43, 6177-6190.	3.8	39
21	Gas switching reforming for flexible power and hydrogen production to balance variable renewables. Renewable and Sustainable Energy Reviews, 2019, 110, 207-219.	8.2	39
22	On the effect of cluster resolution in riser flows on momentum and reaction kinetic interaction. Powder Technology, 2011, 210, 6-17.	2.1	38
23	On the choice of closure complexity in anisotropic drag closures for filtered Two Fluid Models. Chemical Engineering Science, 2019, 207, 379-396.	1.9	37
24	Flexible power and hydrogen production: Finding synergy between CCS and variable renewables. Energy, 2020, 192, 116671.	4.5	37
25	Economic assessment of membrane-assisted autothermal reforming for cost effective hydrogen production with CO_2 capture. International Journal of Hydrogen Energy, 2019, 44, 3492-3510.	3.8	34
26	Economic assessment of the swing adsorption reactor cluster for CO_2 capture from cement production. Journal of Cleaner Production, 2020, 275, 123024.	4.6	32
27	Evaluation of a filtered model for the simulation of large scale bubbling and turbulent fluidized beds. Powder Technology, 2013, 235, 91-102.	2.1	30
28	Internally circulating fluidized-bed reactor for syngas production using chemical looping reforming. Chemical Engineering Journal, 2019, 377, 120076.	6.6	30
29	Hydrodynamic validation study of filtered Two Fluid Models. Chemical Engineering Science, 2018, 182, 93-107.	1.9	28
30	An assessment of the ability of computational fluid dynamic models to predict reactive gasâ€“solid flows in a fluidized bed. Powder Technology, 2012, 215-216, 15-25.	2.1	27
31	Techno-economic assessment of membrane-assisted gas switching reforming for pure H_2 production with CO_2 capture. International Journal of Greenhouse Gas Control, 2018, 72, 163-174.	2.3	27
32	Pathways to low-cost clean hydrogen production with gas switching reforming. International Journal of Hydrogen Energy, 2021, 46, 20142-20158.	3.8	27
33	Integration of a Gas Switching Combustion (GSC) system in integrated gasification combined cycles. International Journal of Greenhouse Gas Control, 2015, 42, 340-356.	2.3	26
34	Thermodynamic assessment of the swing adsorption reactor cluster (SARC) concept for post-combustion CO_2 capture. International Journal of Greenhouse Gas Control, 2017, 60, 74-92.	2.3	25
35	The potential of chemical looping combustion using the gas switching concept to eliminate the energy penalty of CO_2 capture. International Journal of Greenhouse Gas Control, 2019, 83, 265-281.	2.3	25
36	Integration of chemical looping oxygen production and chemical looping combustion in integrated gasification combined cycles. Fuel, 2018, 220, 725-743.	3.4	24

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37	Development and verification of anisotropic solids stress closures for filtered Two Fluid Models. Chemical Engineering Science, 2018, 192, 906-929.	1.9	24
38	Cost-effective clean ammonia production using membrane-assisted autothermal reforming. Chemical Engineering Journal, 2021, 404, 126550.	6.6	24
39	The sensitivity of filtered Two Fluid Model to the underlying resolved simulation setup. Powder Technology, 2017, 316, 265-277.	2.1	23
40	Finding synergy between renewables and coal: Flexible power and hydrogen production from advanced IGCC plants with integrated CO2 capture. Energy Conversion and Management, 2021, 231, 113866.	4.4	23
41	Modelling study of two chemical looping reforming reactor configurations: looping vs. switching. Powder Technology, 2017, 316, 599-613.	2.1	22
42	Techno-economic assessment of the novel gas switching reforming (GSR) concept for gas-fired power production with integrated CO2 capture. International Journal of Hydrogen Energy, 2018, 43, 8754-8769.	3.8	22
43	Techno-Economic assessment of natural gas pyrolysis in molten salts. Energy Conversion and Management, 2022, 253, 115187.	4.4	22
44	Autothermal operation of a pressurized Gas Switching Combustion with ilmenite ore. International Journal of Greenhouse Gas Control, 2017, 63, 175-183.	2.3	21
45	Evaluation of wall friction models for riser flow. Powder Technology, 2016, 303, 156-167.	2.1	20
46	Economic assessment of packed bed chemical looping combustion and suitable benchmarks. International Journal of Greenhouse Gas Control, 2017, 64, 223-233.	2.3	20
47	Gas Switching Reforming (GSR) for syngas production with integrated CO2 capture using iron-based oxygen carriers. International Journal of Greenhouse Gas Control, 2019, 81, 170-180.	2.3	20
48	Techno-economic assessment of long-term methanol production from natural gas and renewables. Energy Conversion and Management, 2022, 266, 115785.	4.4	20
49	Innovative Internally Circulating Reactor Concept for Chemical Loopingâ€Based CO₂ Capture Processes: Hydrodynamic Investigation. Chemical Engineering and Technology, 2016, 39, 1413-1424.	0.9	19
50	Effect of Change in Fluidizing Gas on Riser Hydrodynamics and Evaluation of Scaling Laws. Industrial & Engineering Chemistry Research, 2011, 50, 4697-4706.	1.8	18
51	Grid independence behaviour of fluidized bed reactor simulations using the Two Fluid Model: Detailed parametric study. Powder Technology, 2016, 289, 65-70.	2.1	18
52	Carbon-negative hydrogen: Exploring the techno-economic potential of biomass co-gasification with CO2 capture. Energy Conversion and Management, 2021, 247, 114712.	4.4	18
53	Optimization of a Gas Switching Combustion process through advanced heat management strategies. Applied Energy, 2017, 185, 1459-1470.	5.1	17
54	Integration of chemical looping combustion for cost-effective CO2 capture from state-of-the-art natural gas combined cycles. Energy Conversion and Management: X, 2020, 7, 100044.	0.9	17

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55	Gas Switching as a Practical Alternative for Scaleup of Chemical Looping Combustion. Energy Technology, 2016, 4, 1286-1298.	1.8	16
56	Economic assessment of chemical looping oxygen production and chemical looping combustion in integrated gasification combined cycles. International Journal of Greenhouse Gas Control, 2018, 78, 354-363.	2.3	16
57	Efficiency Improvement of Chemical Looping Combustion Combined Cycle Power Plants. Energy Technology, 2019, 7, 1900567.	1.8	16
58	The oxygen production pre-combustion (OPPC) IGCC plant for efficient power production with CO2 capture. Energy Conversion and Management, 2019, 201, 112109.	4.4	16
59	Gas switching reforming (GSR) for power generation with CO2 capture: Process efficiency improvement studies. Energy, 2019, 167, 757-765.	4.5	16
60	Demonstration of the Novel Swing Adsorption Reactor Cluster Concept in a Multistage Fluidized Bed with Heat-Transfer Surfaces for Postcombustion CO₂ Capture. Industrial & Engineering Chemistry Research, 2020, 59, 22281-22291.	1.8	16
61	A novel gas switching combustion reactor for power production with integrated CO 2 capture: Sensitivity to the fuel and oxygen carrier types. International Journal of Greenhouse Gas Control, 2015, 39, 185-193.	2.3	15
62	Mapping the operating performance of a novel internally circulating fluidized bed reactor applied to chemical looping combustion. Fuel Processing Technology, 2020, 197, 106183.	3.7	15
63	The effect of gas permeation through vertical membranes on chemical switching reforming (CSR) reactor performance. International Journal of Hydrogen Energy, 2016, 41, 8640-8655.	3.8	14
64	An Effective Reaction Rate Model for Gas-Solid Reactions with High Intra-Particle Diffusion Resistance. International Journal of Chemical Reactor Engineering, 2016, 14, 331-342.	0.6	12
65	The swing adsorption reactor cluster (SARC) for post combustion CO2 capture: Experimental proof-of-principle. Chemical Engineering Journal, 2019, 377, 120145.	6.6	12
66	The effect of frictional pressure, geometry and wall friction on the modelling of a pseudo-2D bubbling fluidised bed reactor. Powder Technology, 2015, 283, 85-102.	2.1	11
67	Detecting densified zone formation in membrane-assisted fluidized bed reactors through pressure measurements. Chemical Engineering Journal, 2017, 308, 1154-1164.	6.6	11
68	The effect of sorbent regeneration enthalpy on the performance of the novel Swing Adsorption Reactor Cluster (SARC) for post-combustion CO2 capture. Chemical Engineering Journal, 2019, 377, 119810.	6.6	11
69	Experimental demonstration of pressurized chemical looping combustion in an internally circulating reactor for power production with integrated CO2 capture. Chemical Engineering Journal, 2020, 401, 125974.	6.6	11
70	Blue hydrogen and industrial base products: The future of fossil fuel exporters in a net-zero world. Journal of Cleaner Production, 2022, 363, 132347.	4.6	11
71	A pressurized Gas Switching Combustion reactor: Autothermal operation with a CaMnO3â^'-based oxygen carrier. Chemical Engineering Research and Design, 2018, 137, 20-32.	2.7	10
72	Pressurized chemical looping methane reforming to syngas for efficient methanol production: Experimental and process simulation study. Advances in Applied Energy, 2021, 4, 100069.	6.6	8

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73	The Internally Circulating Reactor (ICR) Concept Applied to Pressurized Chemical Looping Processes. Energy Procedia, 2017, 114, 446-457.	1.8	7
74	Simulation-Based Design and Economic Evaluation of a Novel Internally Circulating Fluidized Bed Reactor for Power Production with Integrated CO2 Capture. Processes, 2019, 7, 723.	1.3	7
75	The effect of gas addition on bubble dynamics in a fluidized bed with flat vertical membranes. Chemical Engineering Journal, 2018, 344, 71-85.	6.6	6
76	Exergy Analysis of Gas Switching Chemical Looping IGCC Plants. Energies, 2020, 13, 544.	1.6	6
77	Experimental investigation on the generic effects of gas permeation through flat vertical membranes. Powder Technology, 2017, 316, 207-217.	2.1	5
78	Multiscale modelling of packed bed chemical looping reforming. Energy Procedia, 2017, 136, 349-355.	1.8	5
79	Efficient Production of Clean Power and Hydrogen Through Synergistic Integration of Chemical Looping Combustion and Reforming. Energies, 2020, 13, 3443.	1.6	5
80	Hydrogen production by water splitting using gas switching technology. Powder Technology, 2020, 370, 48-63.	2.1	5
81	Integration of gas switching combustion in a humid air turbine cycle for flexible power production from solid fuels with nearâ€zero emissions of CO 2 and other pollutants. International Journal of Energy Research, 2020, 44, 7299-7322.	2.2	5
82	Techno-Economic Assessment of IGCC Power Plants Using Gas Switching Technology to Minimize the Energy Penalty of CO2 Capture. Clean Technologies, 2021, 3, 594-617.	1.9	5
83	Exergoeconomic assessment of air separation units for pressurized O2 production incorporating two-phase expanders. Cryogenics, 2022, 124, 103477.	0.9	5
84	Experimental demonstration of control strategies for a Gas Switching Combustion reactor for power production with integrated CO2 capture. Chemical Engineering Research and Design, 2016, 111, 342-352.	2.7	4
85	Multiscale Modeling of a Packed Bed Chemical Looping Reforming (PBCLR) Reactor. Energies, 2017, 10, 2056.	1.6	4
86	The Potential of Gas Switching Partial Oxidation Using Advanced Oxygen Carriers for Efficient H2 Production with Inherent CO2 Capture. Applied Sciences (Switzerland), 2021, 11, 4713.	1.3	4
87	The effect of tree shade on ambient conditions and heat stress indicator traits of new-born South African Mutton Merino and Dormer lambs: Preliminary results. Journal of Thermal Biology, 2021, 99, 103024.	1.1	4
88	Design strategy for a Chemical Looping Combustion system using process simulation and Computational Fluid Dynamics. Progress in Computational Fluid Dynamics, 2012, 12, 80.	0.1	3
89	Comparison of phenomenological and fundamental modelling approaches for predicting fluidized bed reactor performance. Powder Technology, 2012, 228, 69-83.	2.1	3
90	Heat Management in Gas Switching Combustion for Power Production with Integrated CO2 Capture. Energy Procedia, 2015, 75, 2215-2220.	1.8	3

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91	COMPOSITE: A Concept for High Efficiency Power Production with Integrated CO2 Capture from Solid Fuels. Energy Procedia, 2017, 114, 539-550.	1.8	3
92	Gas switching technology: Economic attractiveness for chemical looping applications and scale up experience to 50 kWth. International Journal of Greenhouse Gas Control, 2022, 114, 103593.	2.3	3
93	A Novel Swing Adsorption Reactor Cluster (SARC) for Cost Effective Post-combustion CO2 Capture: A Thermodynamic Assessment. Energy Procedia, 2017, 114, 2488-2496.	1.8	2
94	1D modelling of membrane-assisted chemical looping reforming. Energy Procedia, 2017, 136, 277-282.	1.8	2
95	Integration of gas switching combustion and membrane reactors for exceeding 50% efficiency in flexible IGCC plants with near-zero CO2 emissions. Energy Conversion and Management: X, 2020, 7, 100050.	0.9	2
96	Study of the Cost Reductions Achievable from the Novel SARC CO₂ Capture Concept Using a Validated Reactor Model. Industrial & Engineering Chemistry Research, 2021, 60, 12390-12402.	1.8	2
97	Simplified Model Description of a CLOP Reactor for System Simulation and Analysis. Energy Procedia, 2017, 114, 429-435.	1.8	1
98	Verification of Heat and Mass Transfer Closures in Industrial Scale Packed Bed Reactor Simulations. Energies, 2018, 11, 805.	1.6	1
99	Closure Development for Multi-Scale Fluidized Bed Reactor Models: A Case Study. Computer Aided Chemical Engineering, 2018, 43, 247-252.	0.3	1
100	Numerical Investigations to Quantify the Effect of Horizontal Membranes on the Performance of a Fluidized Bed Reactor. International Journal of Chemical Reactor Engineering, 2012, 10, .	0.6	0