

Schalk Cloete

List of Publications by Year in descending order

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100
papers

2,370
citations

186209

28
h-index

265120

42
g-index

101
all docs

101
docs citations

101
times ranked

1515
citing authors

#	ARTICLE	IF	CITATIONS
1	Techno-Economic assessment of natural gas pyrolysis in molten salts. Energy Conversion and Management, 2022, 253, 115187.	4.4	22
2	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
3	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
4	Exergoeconomic assessment of air separation units for pressurized O ₂ production incorporating two-phase expanders. Cryogenics, 2022, 124, 103477.	0.9	5
5	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
6	Techno-economic assessment of long-term methanol production from natural gas and renewables. Energy Conversion and Management, 2022, 266, 115785.	4.4	20
7	Pathways to low-cost clean hydrogen production with gas switching reforming. International Journal of Hydrogen Energy, 2021, 46, 20142-20158.	3.8	27
8	Cost-effective clean ammonia production using membrane-assisted autothermal reforming. Chemical Engineering Journal, 2021, 404, 126550.	6.6	24
9	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
10	Review on Reactor Configurations for Adsorption-Based CO ₂ Capture. Industrial & Engineering Chemistry Research, 2021, 60, 3779-3798.	1.8	93
11	Finding synergy between renewables and coal: Flexible power and hydrogen production from advanced IGCC plants with integrated CO ₂ capture. Energy Conversion and Management, 2021, 231, 113866.	4.4	23
12	Review of pressurized chemical looping processes for power generation and chemical production with integrated CO ₂ capture. Fuel Processing Technology, 2021, 214, 106684.	3.7	52
13	The Potential of Gas Switching Partial Oxidation Using Advanced Oxygen Carriers for Efficient H ₂ Production with Inherent CO ₂ Capture. Applied Sciences (Switzerland), 2021, 11, 4713.	1.3	4
14	The effect of tree shade on ambient conditions and heat stress indicator traits of new-born South African Mutton Merino and Dorper lambs: Preliminary results. Journal of Thermal Biology, 2021, 99, 103024.	1.1	4
15	Study of the Cost Reductions Achievable from the Novel SARC CO ₂ Capture Concept Using a Validated Reactor Model. Industrial & Engineering Chemistry Research, 2021, 60, 12390-12402.	1.8	2
16	Techno-Economic Assessment of IGCC Power Plants Using Gas Switching Technology to Minimize the Energy Penalty of CO ₂ Capture. Clean Technologies, 2021, 3, 594-617.	1.9	5
17	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
18	Carbon-negative hydrogen: Exploring the techno-economic potential of biomass co-gasification with CO ₂ capture. Energy Conversion and Management, 2021, 247, 114712.	4.4	18

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19	Mapping the operating performance of a novel internally circulating fluidized bed reactor applied to chemical looping combustion. <i>Fuel Processing Technology</i> , 2020, 197, 106183.	3.7	15
20	Sorbents screening for post-combustion CO ₂ capture via combined temperature and pressure swing adsorption. <i>Chemical Engineering Journal</i> , 2020, 380, 122201.	6.6	55
21	Flexible power and hydrogen production: Finding synergy between CCS and variable renewables. <i>Energy</i> , 2020, 192, 116671.	4.5	37
22	Integration of gas switching combustion and membrane reactors for exceeding 50% efficiency in flexible IGCC plants with near-zero CO ₂ emissions. <i>Energy Conversion and Management: X</i> , 2020, 7, 100050.	0.9	2
23	Experimental demonstration of pressurized chemical looping combustion in an internally circulating reactor for power production with integrated CO ₂ capture. <i>Chemical Engineering Journal</i> , 2020, 401, 125974.	6.6	11
24	Efficient Production of Clean Power and Hydrogen Through Synergistic Integration of Chemical Looping Combustion and Reforming. <i>Energies</i> , 2020, 13, 3443.	1.6	5
25	Economic assessment of the swing adsorption reactor cluster for CO ₂ capture from cement production. <i>Journal of Cleaner Production</i> , 2020, 275, 123024.	4.6	32
26	Demonstration of the Novel Swing Adsorption Reactor Cluster Concept in a Multistage Fluidized Bed with Heat-Transfer Surfaces for Postcombustion CO ₂ Capture. <i>Industrial & Engineering Chemistry Research</i> , 2020, 59, 22281-22291.	1.8	16
27	Hydrogen production by water splitting using gas switching technology. <i>Powder Technology</i> , 2020, 370, 48-63.	2.1	5
28	Integration of gas switching combustion in a humid air turbine cycle for flexible power production from solid fuels with near-zero emissions of CO ₂ and other pollutants. <i>International Journal of Energy Research</i> , 2020, 44, 7299-7322.	2.2	5
29	Integration of chemical looping combustion for cost-effective CO ₂ capture from state-of-the-art natural gas combined cycles. <i>Energy Conversion and Management: X</i> , 2020, 7, 100044.	0.9	17
30	Exergy Analysis of Gas Switching Chemical Looping IGCC Plants. <i>Energies</i> , 2020, 13, 544.	1.6	6
31	Efficient hydrogen production with CO ₂ capture using gas switching reforming. <i>Energy</i> , 2019, 185, 372-385.	4.5	50
32	Efficiency Improvement of Chemical Looping Combustion Combined Cycle Power Plants. <i>Energy Technology</i> , 2019, 7, 1900567.	1.8	16
33	Gas Switching Reforming (GSR) for syngas production with integrated CO ₂ capture using iron-based oxygen carriers. <i>International Journal of Greenhouse Gas Control</i> , 2019, 81, 170-180.	2.3	20
34	Gas switching reforming for flexible power and hydrogen production to balance variable renewables. <i>Renewable and Sustainable Energy Reviews</i> , 2019, 110, 207-219.	8.2	39
35	On the choice of closure complexity in anisotropic drag closures for filtered Two Fluid Models. <i>Chemical Engineering Science</i> , 2019, 207, 379-396.	1.9	37
36	The potential of chemical looping combustion using the gas switching concept to eliminate the energy penalty of CO ₂ capture. <i>International Journal of Greenhouse Gas Control</i> , 2019, 83, 265-281.	2.3	25

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37	The swing adsorption reactor cluster for post-combustion CO ₂ capture from cement plants. <i>Journal of Cleaner Production</i> , 2019, 223, 692-703.	4.6	52
38	The oxygen production pre-combustion (OPPC) IGCC plant for efficient power production with CO ₂ capture. <i>Energy Conversion and Management</i> , 2019, 201, 112109.	4.4	16
39	Simulation-Based Design and Economic Evaluation of a Novel Internally Circulating Fluidized Bed Reactor for Power Production with Integrated CO ₂ Capture. <i>Processes</i> , 2019, 7, 723.	1.3	7
40	The effect of sorbent regeneration enthalpy on the performance of the novel Swing Adsorption Reactor Cluster (SARC) for post-combustion CO ₂ capture. <i>Chemical Engineering Journal</i> , 2019, 377, 119810.	6.6	11
41	Gas switching reforming (GSR) for power generation with CO ₂ capture: Process efficiency improvement studies. <i>Energy</i> , 2019, 167, 757-765.	4.5	16
42	Economic assessment of membrane-assisted autothermal reforming for cost effective hydrogen production with CO ₂ capture. <i>International Journal of Hydrogen Energy</i> , 2019, 44, 3492-3510.	3.8	34
43	The swing adsorption reactor cluster (SARC) for post combustion CO ₂ capture: Experimental proof-of-principle. <i>Chemical Engineering Journal</i> , 2019, 377, 120145.	6.6	12
44	Internally circulating fluidized-bed reactor for syngas production using chemical looping reforming. <i>Chemical Engineering Journal</i> , 2019, 377, 120076.	6.6	30
45	Hydrodynamic validation study of filtered Two Fluid Models. <i>Chemical Engineering Science</i> , 2018, 182, 93-107.	1.9	28
46	Techno-economic assessment of membrane-assisted gas switching reforming for pure H ₂ production with CO ₂ capture. <i>International Journal of Greenhouse Gas Control</i> , 2018, 72, 163-174.	2.3	27
47	Integration of chemical looping oxygen production and chemical looping combustion in integrated gasification combined cycles. <i>Fuel</i> , 2018, 220, 725-743.	3.4	24
48	Techno-economic assessment of the novel gas switching reforming (GSR) concept for gas-fired power production with integrated CO ₂ capture. <i>International Journal of Hydrogen Energy</i> , 2018, 43, 8754-8769.	3.8	22
49	The effect of gas addition on bubble dynamics in a fluidized bed with flat vertical membranes. <i>Chemical Engineering Journal</i> , 2018, 344, 71-85.	6.6	6
50	Hydrogen production with integrated CO ₂ capture in a membrane assisted gas switching reforming reactor: Proof-of-Concept. <i>International Journal of Hydrogen Energy</i> , 2018, 43, 6177-6190.	3.8	39
51	Economic assessment of chemical looping oxygen production and chemical looping combustion in integrated gasification combined cycles. <i>International Journal of Greenhouse Gas Control</i> , 2018, 78, 354-363.	2.3	16
52	Verification of Heat and Mass Transfer Closures in Industrial Scale Packed Bed Reactor Simulations. <i>Energies</i> , 2018, 11, 805.	1.6	1
53	Closure Development for Multi-Scale Fluidized Bed Reactor Models: A Case Study. <i>Computer Aided Chemical Engineering</i> , 2018, 43, 247-252.	0.3	1
54	A pressurized Gas Switching Combustion reactor: Autothermal operation with a CaMnO ₃ -based oxygen carrier. <i>Chemical Engineering Research and Design</i> , 2018, 137, 20-32.	2.7	10

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55	Development and verification of anisotropic solids stress closures for filtered Two Fluid Models. Chemical Engineering Science, 2018, 192, 906-929.	1.9	24
56	Development and verification of anisotropic drag closures for filtered Two Fluid Models. Chemical Engineering Science, 2018, 192, 930-954.	1.9	50
57	Optimization of a Gas Switching Combustion process through advanced heat management strategies. Applied Energy, 2017, 185, 1459-1470.	5.1	17
58	Experimental investigation on the generic effects of gas permeation through flat vertical membranes. Powder Technology, 2017, 316, 207-217.	2.1	5
59	Heat transfer to a gas from densely packed beds of monodisperse spherical particles. Chemical Engineering Journal, 2017, 314, 27-37.	6.6	71
60	Modelling study of two chemical looping reforming reactor configurations: looping vs. switching. Powder Technology, 2017, 316, 599-613.	2.1	22
61	Hydrogen production with integrated CO ₂ capture in a novel gas switching reforming reactor: Proof-of-concept. International Journal of Hydrogen Energy, 2017, 42, 14367-14379.	3.8	45
62	Heat transfer to a gas from densely packed beds of cylindrical particles. Chemical Engineering Science, 2017, 172, 1-12.	1.9	58
63	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
64	The sensitivity of filtered Two Fluid Model to the underlying resolved simulation setup. Powder Technology, 2017, 316, 265-277.	2.1	23
65	The Internally Circulating Reactor (ICR) Concept Applied to Pressurized Chemical Looping Processes. Energy Procedia, 2017, 114, 446-457.	1.8	7
66	Simplified Model Description of a CLOP Reactor for System Simulation and Analysis. Energy Procedia, 2017, 114, 429-435.	1.8	1
67	COMPOSITE: A Concept for High Efficiency Power Production with Integrated CO ₂ Capture from Solid Fuels. Energy Procedia, 2017, 114, 539-550.	1.8	3
68	A Novel Swing Adsorption Reactor Cluster (SARC) for Cost Effective Post-combustion CO ₂ Capture: A Thermodynamic Assessment. Energy Procedia, 2017, 114, 2488-2496.	1.8	2
69	Autothermal operation of a pressurized Gas Switching Combustion with ilmenite ore. International Journal of Greenhouse Gas Control, 2017, 63, 175-183.	2.3	21
70	Economic assessment of packed bed chemical looping combustion and suitable benchmarks. International Journal of Greenhouse Gas Control, 2017, 64, 223-233.	2.3	20
71	Detecting densified zone formation in membrane-assisted fluidized bed reactors through pressure measurements. Chemical Engineering Journal, 2017, 308, 1154-1164.	6.6	11
72	1D modelling of membrane-assisted chemical looping reforming. Energy Procedia, 2017, 136, 277-282.	1.8	2

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73	Multiscale modelling of packed bed chemical looping reforming. Energy Procedia, 2017, 136, 349-355.	1.8	5
74	Multiscale Modeling of a Packed Bed Chemical Looping Reforming (PBCLR) Reactor. Energies, 2017, 10, 2056.	1.6	4
75	Innovative Internally Circulating Reactor Concept for Chemical Looping-Based CO ₂ Capture Processes: Hydrodynamic Investigation. Chemical Engineering and Technology, 2016, 39, 1413-1424.	0.9	19
76	Gas Switching as a Practical Alternative for Scaleup of Chemical Looping Combustion. Energy Technology, 2016, 4, 1286-1298.	1.8	16
77	Evaluation of wall friction models for riser flow. Powder Technology, 2016, 303, 156-167.	2.1	20
78	Experimental demonstration of control strategies for a Gas Switching Combustion reactor for power production with integrated CO ₂ capture. Chemical Engineering Research and Design, 2016, 111, 342-352.	2.7	4
79	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
80	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
81	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
82	Heat Management in Gas Switching Combustion for Power Production with Integrated CO ₂ Capture. Energy Procedia, 2015, 75, 2215-2220.	1.8	3
83	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
84	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
85	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
86	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
87	The generality of the standard 2D TFM approach in predicting bubbling fluidized bed hydrodynamics. Powder Technology, 2013, 235, 735-746.	2.1	54
88	Experimental Demonstration of a Novel Gas Switching Combustion Reactor for Power Production with Integrated CO ₂ Capture. Industrial & Engineering Chemistry Research, 2013, 52, 14241-14250.	1.8	44
89	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
90	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

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91	Numerical Investigations to Quantify the Effect of Horizontal Membranes on the Performance of a Fluidized Bed Reactor. <i>International Journal of Chemical Reactor Engineering</i> , 2012, 10, .	0.6	0
92	Design strategy for a Chemical Looping Combustion system using process simulation and Computational Fluid Dynamics. <i>Progress in Computational Fluid Dynamics</i> , 2012, 12, 80.	0.1	3
93	An assessment of the ability of computational fluid dynamic models to predict reactive gas–solid flows in a fluidized bed. <i>Powder Technology</i> , 2012, 215-216, 15-25.	2.1	27
94	Performance evaluation of a complete Lagrangian KTGF approach for dilute granular flow modelling. <i>Powder Technology</i> , 2012, 226, 43-52.	2.1	44
95	Comparison of phenomenological and fundamental modelling approaches for predicting fluidized bed reactor performance. <i>Powder Technology</i> , 2012, 228, 69-83.	2.1	3
96	Effect of Change in Fluidizing Gas on Riser Hydrodynamics and Evaluation of Scaling Laws. <i>Industrial & Engineering Chemistry Research</i> , 2011, 50, 4697-4706.	1.8	18
97	A fine resolution parametric study on the numerical simulation of gas–solid flows in a periodic riser section. <i>Powder Technology</i> , 2011, 205, 103-111.	2.1	40
98	On the effect of cluster resolution in riser flows on momentum and reaction kinetic interaction. <i>Powder Technology</i> , 2011, 210, 6-17.	2.1	38
99	CFD modeling of plume and free surface behavior resulting from a sub-sea gas release. <i>Applied Ocean Research</i> , 2009, 31, 220-225.	1.8	61
100	Use of $\text{CaMn}_{0.875}\text{Ti}_{0.125}\text{O}_3$ as Oxygen Carrier in Chemical-Looping with Oxygen Uncoupling. <i>Energy & Fuels</i> , 2009, 23, 5276-5283.	2.5	151