A review of developments in pilot-plant testing and mo
for CO₂ capture from power generation sys

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Citation Report

#	Article	IF	Citations
1	Modelling and comparison of calcium looping and chemical solvent scrubbing retrofits for CO 2 capture from coal-fired power plant. International Journal of Greenhouse Gas Control, 2015, 42, 226-236.	4.6	53
2	Evaluation of a calcium looping CO2 capture plant retrofit to a coal-fired power plant. Computer Aided Chemical Engineering, 2016, 38, 2115-2120.	0.5	1
3	Ongoing Activity on CO2 Capture in the Power Sector: Review of the Demonstration Projects Worldwide. , 2016, , .		1
4	On the Multicycle Activity of Natural Limestone/Dolomite for Thermochemical Energy Storage of Concentrated Solar Power. Energy Technology, 2016, 4, 1013-1019.	3.8	95
5	Use of steel slag for CO2 capture under realistic calcium-looping conditions. RSC Advances, 2016, 6, 37656-37663.	3.6	28
6	CO2 abatement from the iron and steel industry using a combined Caâ€"Fe chemical loop. Applied Energy, 2016, 170, 345-352.	10.1	47
7	Comparison of probabilistic performance of calcium looping and chemical solvent scrubbing retrofits for CO2 capture from coal-fired power plant. Applied Energy, 2016, 172, 323-336.	10.1	34
8	Highly efficient CO₂capture with simultaneous iron and CaO recycling for the iron and steel industry. Green Chemistry, 2016, 18, 4022-4031.	9.0	47
9	Thermochemical energy storage of concentrated solar power by integration of the calcium looping process and a CO2 power cycle. Applied Energy, 2016, 173, 589-605.	10.1	241
10	Synthesis of Efficient CaO Sorbents for CO₂ Capture Using a Simple Organometallic Calcium-Based Carbon Template Route. Energy & Fuels, 2016, 30, 7543-7550.	5.1	33
11	Calcium looping sorbents for CO2 capture. Applied Energy, 2016, 180, 722-742.	10.1	257
12	Energy Consumption for CO₂ Capture by means of the Calcium Looping Process: A Comparative Analysis using Limestone, Dolomite, and Steel Slag. Energy Technology, 2016, 4, 1317-1327.	3.8	24
13	Waste Marble Powders as Promising Inexpensive Natural CaO-Based Sorbents for Post-Combustion CO₂ Capture. Industrial & Engineering Chemistry Research, 2016, 55, 7860-7872.	3.7	37
14	Influence of Ball Milling on CaO Crystal Growth During Limestone and Dolomite Calcination: Effect on CO₂ Capture at Calcium Looping Conditions. Crystal Growth and Design, 2016, 16, 7025-7036.	3.0	39
15	Effect of dolomite decomposition under CO₂ on its multicycle CO₂ capture behaviour under calcium looping conditions. Physical Chemistry Chemical Physics, 2016, 18, 16325-16336.	2.8	22
16	Review and research needs of Ca-Looping systems modelling for post-combustion CO2 capture applications. International Journal of Greenhouse Gas Control, 2016, 50, 271-304.	4.6	96
17	Enhanced CO₂ Chemisorption Properties of Li₄SO₄, Using a Water Hydrationâ€"Calcination Technique. Industrial & Engineering Chemistry Research, 2016, 55, 1142-1146.	3.7	27
18	Natural dolomite modified with carbon coating for cyclic high-temperature CO2 capture. Applied Energy, 2016, 165, 14-21.	10.1	66

#	Article	IF	Citations
19	A new integration model of the calcium looping technology into coal fired power plants for CO2 capture. Applied Energy, 2016, 169, 408-420.	10.1	53
20	Calcium looping with supercritical CO2 cycle for decarbonisation of coal-fired power plant. Energy, 2016, 102, 343-353.	8.8	64
21	Modelling of the calcination behaviour of a uniformly-distributed CuO/CaCO3 particle in Caâ€“Cu chemical looping. Applied Energy, 2016, 164, 400-410.	10.1	89
22	The Calcium-Looping technology for CO2 capture: On the important roles of energy integration and sorbent behavior. Applied Energy, 2016, 162, 787-807.	10.1	286
23	CO2 capture by calcium aluminate pellets in a small fluidized bed. Fuel Processing Technology, 2016, 142, 100-106.	7.2	33
24	Large-Scale Storage of Concentrated Solar Power from Industrial Waste. ACS Sustainable Chemistry and Engineering, 2017, 5, 2265-2272.	6.7	22
25	Techno-economic analysis of oxy-combustion coal-fired power plant with cryogenic oxygen storage. Applied Energy, 2017, 191, 193-203.	10.1	66
26	CO2 capture performance of Ca-Mg acetates at realistic Calcium Looping conditions. Fuel, 2017, 196, 497-507.	6.4	35
27	Selective strategy for solid sorbent replacement in CCS. Chemical Engineering Research and Design, 2017, 120, 82-91.	5.6	0
28	Limestone calcination under calcium-looping conditions for CO₂ capture and thermochemical energy storage in the presence of H₂O: an <i>in situ</i> XRD analysis. Physical Chemistry Chemical Physics, 2017, 19, 7587-7596.	2.8	35
29	Large-scale high-temperature solar energy storage using natural minerals. Solar Energy Materials and Solar Cells, 2017, 168, 14-21.	6.2	119
30	Material development and assessment of an energy storage concept based on the CaO-looping process. Solar Energy, 2017, 150, 298-309.	6.1	51
31	Carbon capture and storage technologies: present scenario and drivers of innovation. Current Opinion in Chemical Engineering, 2017, 17, 22-34.	7.8	80
32	High-Capacity Li₄SiO₄-Based CO₂ Sorbents via a Facile Hydrationâ€“NaCl Doping Technique. Energy & Fuels, 2017, 31, 6257-6265.	5.1	33
33	A Modified Random Pore Model for Carbonation Reaction of CaO-based Limestone with CO 2 in Different Calcination-carbonation Cycles. Energy Procedia, 2017, 105, 1924-1931.	1.8	18
34	Green Synthesis of Nanosilica from Coal Fly Ash and Its Stabilizing Effect on CaO Sorbents for CO₂ Capture. Environmental Science & Technology, 2017, 51, 7606-7615.	10.0	77
35	Calcium looping combustion for high-efficiency low-emission power generation. Journal of Cleaner Production, 2017, 161, 245-255.	9.3	35
36	Multicycle activity of natural CaCO 3 minerals for thermochemical energy storage in Concentrated Solar Power plants. Solar Energy, 2017, 153, 188-199.	6.1	112

#	Article	IF	Citations
38	The Oxy-CaL process: A novel CO 2 capture system by integrating partial oxy-combustion with the Calcium-Looping process. Applied Energy, 2017, 196, 1-17.	10.1	39
39	Power cycles integration in concentrated solar power plants with energy storage based on calcium looping. Energy Conversion and Management, 2017, 149, 815-829.	9.2	129
40	Derivation of Kinetics and Design Parameters for a Carbonator Reactor in a Greenhouse Calcium Looping Process. Energy Technology, 2017, 5, 644-655.	3.8	1
41	High-efficiency negative-carbon emission power generation from integrated solid-oxide fuel cell and calciner. Applied Energy, 2017, 205, 1189-1201.	10.1	37
42	A study of metals promoted CaO-based CO 2 sorbents for high temperature application by combining experimental and DFT calculations. Journal of CO2 Utilization, 2017, 22, 155-163.	6.8	41
43	A review of developments in carbon dioxide storage. Applied Energy, 2017, 208, 1389-1419.	10.1	517
44	CaOâ€Based CO₂ Sorbents Effectively Stabilized by Metal Oxides. ChemPhysChem, 2017, 18, 3280-3285.	2.1	27
45	Ion Dynamics and CO₂ Absorption Properties of Nb-, Ta-, and Y-Doped Li₂ZrO₃ Studied by Solid-State NMR, Thermogravimetry, and First-Principles Calculations. Journal of Physical Chemistry C, 2017, 121, 21877-21886.	3.1	17
46	Economic feasibility of calcium looping under uncertainty. Applied Energy, 2017, 208, 691-702.	10.1	39
47	Modeling of carbonation reaction for CaO-based limestone with CO2 in multitudinous calcination-carbonation cycles. International Journal of Hydrogen Energy, 2017, 42, 19744-19754.	7.1	9
48	High-performance composite hollow fiber membrane for flue gas and air separations. Journal of Membrane Science, 2017, 541, 367-377.	8.2	118
49	Mechanochemical synthesis of COx-free hydrogen and methane fuel mixtures at room temperature from light metal hydrides and carbon dioxide. Applied Energy, 2017, 204, 741-748.	10.1	17
50	Sorption-enhanced water gas shift reaction for high-purity hydrogen production: Application of a Na-Mg double salt-based sorbent and the divided section packing concept. Applied Energy, 2017, 205, 316-322.	10.1	42
51	Techno-economic analysis of sorption-enhanced steam methane reforming in a fixed bed reactor network integrated with fuel cell. Journal of Power Sources, 2017, 364, 41-51.	7.8	49
52	Microporous coordination polymer with secondary amine functional groups for CO2 uptake and selectivity. Journal of Polymer Research, 2017, 24, 1.	2.4	4
53	Study on the interaction between CaO-based sorbents and coal ash in calcium looping process. Fuel Processing Technology, 2017, 156, 339-347.	7.2	37
54	Adsorption capture systems. , 2017, , 151-185.		8
55	Estimation of the carbonation reaction kinetic parameters for dilute methane and carbon dioxide conditions in a calcium looping process. Environmental Progress and Sustainable Energy, 2018, 37, 1312-1318.	2.3	3

#	Article	IF	Citations
56	Carbonation of Limestone Derived CaO for Thermochemical Energy Storage: From Kinetics to Process Integration in Concentrating Solar Plants. ACS Sustainable Chemistry and Engineering, 2018, 6, 6404-6417.	6.7	93
57	Integrated CO₂ Capture and Conversion as an Efficient Process for Fuels from Greenhouse Gases. ACS Catalysis, 2018, 8, 2815-2823.	11.2	168
58	<i>In Situ</i> XRD and Dynamic Nuclear Polarization Surface Enhanced NMR Spectroscopy Unravel the Deactivation Mechanism of CaO-Based, Ca₃Al₂O₆-Stabilized CO₂ Sorbents. Chemistry of Materials, 2018, 30, 1344-1352.	6.7	40
59	Carbon doping of hexagonal boron nitride porous materials toward CO₂ capture. Journal of Materials Chemistry A, 2018, 6, 1832-1839.	10.3	131
60	Techno-economic feasibility assessment of CO2 capture from coal-fired power plants using molecularly imprinted polymer. Fuel, 2018, 214, 512-520.	6.4	26
61	Characterization of calcium looping sorbents with a novel twin bed reactor. Fuel Processing Technology, 2018, 172, 49-54.	7.2	7
62	Kinetics and Design Parameter Determination for a Calciner Reactor in Unique Conditions of a Novel Greenhouse Calcium Looping Process. Energy & Fuels, 2018, 32, 33-43.	5.1	6
63	Modelling of sorption-enhanced steam methane reforming in a fixed bed reactor network integrated with fuel cell. Applied Energy, 2018, 210, 1-15.	10.1	46
64	Nitrogen-rich hyper-crosslinked polymers for low-pressure CO2 capture. Chemical Engineering Journal, 2018, 334, 2004-2013.	12.7	53
65	Effect of milling mechanism on the CO2 capture performance of limestone in the Calcium Looping process. Chemical Engineering Journal, 2018, 346, 549-556.	12.7	35
66	Combined heat and power generation with lime production for direct air capture. Energy Conversion and Management, 2018, 160, 455-466.	9.2	33
67	Screening and Characterization of Ternary Oxides for High-Temperature Carbon Capture. Chemistry of Materials, 2018, 30, 2535-2543.	6.7	21
68	CO2-adsorption promoted CH4-desorption onto low-rank coal vitrinite by density functional theory including dispersion correction (DFT-D3). Fuel, 2018, 219, 259-269.	6.4	32
69	Carbon capture and storage (CCS): the way forward. Energy and Environmental Science, 2018, 11, 1062-1176.	30.8	2,378
70	Optimal environment-friendly economic restructuring: the United Statesâ€“China cooperation case study. Economic Change and Restructuring, 2018, 51, 189-220.	5.0	7
71	An experimental characterization of Calcium Looping integrated with concentrated solar power. Chemical Engineering Journal, 2018, 331, 794-802.	12.7	65
72	Calcium-Looping performance of mechanically modified Al2O3-CaO composites for energy storage and CO2 capture. Chemical Engineering Journal, 2018, 334, 2343-2355.	12.7	138
73	A critical assessment of the testing conditions of CaO-based CO2 sorbents. Chemical Engineering Journal, 2018, 336, 544-549.	12.7	47

#	Article	IF	Citations
74	Technical and economic feasibility evaluation of calcium looping with no CO2 recirculation. Chemical Engineering Journal, 2018, 335, 763-773.	12.7	32
75	Structure Design of Low-Temperature Regenerative Hyperbranched Polyamine Adsorbent for CO₂ Capture. Langmuir, 2018, 34, 14169-14179.	3.5	14
76	CO₂ capture and attrition performance of competitive ecoâ€friendly calciumâ€based pellets in fluidized bed. , 2018, 8, 1124-1133.		8
77	Role of calcium looping conditions on the performance of natural and synthetic Ca-based materials for energy storage. Journal of CO2 Utilization, 2018, 28, 374-384.	6.8	110
78	Inherent potential of steelmaking to contribute to decarbonisation targets via industrial carbon capture and storage. Nature Communications, 2018, 9, 4422.	12.8	78
79	From post-combustion carbon capture to sorption-enhanced hydrogen production: A state-of-the-art review of carbonate looping process feasibility. Energy Conversion and Management, 2018, 177, 428-452.	9.2	59
80	Feasibility of CaO/CuO/NiO sorption-enhanced steam methane reforming integrated with solid-oxide fuel cell for near-zero-CO2 emissions cogeneration system. Applied Energy, 2018, 230, 241-256.	10.1	24
81	Two-dimensional nitrides as highly efficient potential candidates for CO₂ capture and activation. Physical Chemistry Chemical Physics, 2018, 20, 17117-17124.	2.8	55
82	Performance of synthetic CaO-based sorbent pellets for CO2 capture and kinetic analysis. Fuel, 2018, 232, 205-214.	6.4	35
83	Assessment of the operability of a 20 MWth calcium looping demonstration plant by advanced process modelling. International Journal of Greenhouse Gas Control, 2018, 75, 224-234.	4.6	9
84	A facile Solvent/Nonsolvent Preparation of Sinteringâ€Resistant MgO/CaO Composites for Highâ€Temperature CO₂ Capture. Energy Technology, 2018, 6, 2469-2478.	3.8	24
85	Optimization of the structural characteristics of CaO and its effective stabilization yield high-capacity CO2 sorbents. Nature Communications, 2018, 9, 2408.	12.8	167
86	A study on the CO2 capture and attrition performance of construction and demolition waste. Fuel, 2018, 222, 232-242.	6.4	14
87	Measuring attrition properties of calcium looping materials in a 30â€¯kW pilot plant. Powder Technology, 2018, 336, 273-281.	4.2	21
88	CO₂ Capture Performance of Portland Cementâ€Based Carbide Slag and the Enhancement of Its CO₂ Capture Capacity. Chemical Engineering and Technology, 2018, 41, 1577-1586.	1.5	9
89	On a carbon-negative energy production scheme via a quadruple fluidized bed gasifier. Energy Conversion and Management, 2018, 171, 326-338.	9.2	8
90	Competitive adsorption of CO2/N2/CH4 onto coal vitrinite macromolecular: Effects of electrostatic interactions and oxygen functionalities. Fuel, 2019, 235, 23-38.	6.4	109
91	Low-energy-consumption and environmentally friendly CO2 capture via blending alcohols into amine solution. Applied Energy, 2019, 254, 113696.	10.1	39

#	Article	IF	Citations
92	Conceptual Design for Integrating Lithium-Based Carbon Capture Looping Systems into Natural Gas Combined Cycle Power Plants. Industrial & Engineering Chemistry Research, 2019, 58, 14975-14990.	3.7	5
93	Tensile strength and compressibility of fine <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" altimg="si187.svg"><mml:mrow><mml:msub><mml:mrow><mml:mi mathvariant="normal">CaCO</mml:mi></mml:mrow><mml:mrow><mml:mn>3</mml:mn></mml:mrow></mml:msub></mml:mrow> powders. Effect of nanosilica addition.. Chemical Engineering Journal, 2019, 378, 122166.	12.7	12
94	CO₂ Capture Performance of Gluconic Acid Modified Limestone-Dolomite Mixtures under Realistic Conditions. Energy & Fuels, 2019, 33, 7550-7560.	5.1	16
95	The Calcium-Looping (CaCO3/CaO) process for thermochemical energy storage in Concentrating Solar Power plants. Renewable and Sustainable Energy Reviews, 2019, 113, 109252.	16.4	180
96	<i>110th Anniversary</i>: Carbon Dioxide and Chemical Looping: Current Research Trends. Industrial & Engineering Chemistry Research, 2019, 58, 16235-16257.	3.7	39
97	Mechanochemical reactions of alkali borohydride with CO2 under ambient temperature. Journal of Solid State Chemistry, 2019, 277, 828-832.	2.9	11
98	Long-Term Cointegration Relationship between Chinaâ€™s Wind Power Development and Carbon Emissions. Sustainability, 2019, 11, 4625.	3.2	5
99	Continuous CO₂ Capture Performance of K₂CO₃/Al₂O₃ Sorbents in a Novel Integrated Bubbling-Transport Fluidized Reactor. Industrial & Engineering Chemistry Research, 2019, 58, 19733-19740.	3.7	13
100	Kinetics of Solid-Gas Reactions and Their Application to Carbonate Looping Systems. Energies, 2019, 12, 2981.	3.1	69
101	Demonstration of a kW-scale solid oxide fuel cell-calciner for power generation and production of calcined materials. Applied Energy, 2019, 255, 113731.	10.1	6
102	Novel low cost Li4SiO4-based sorbent with naturally occurring wollastonite as Si-source for cyclic CO2 capture. Chemical Engineering Journal, 2019, 374, 328-337.	12.7	34
103	Effect of Seawater, Aluminate Cement, and Alumina-Rich Spinel on Pelletized CaO-Based Sorbents for Calcium Looping. Industrial & Engineering Chemistry Research, 2019, 58, 11910-11919.	3.7	8
104	Highly efficient and durable metal-organic framework material derived Ca-based solid sorbents for CO2 capture. Chemical Engineering Journal, 2019, 372, 1028-1037.	12.7	41
105	Effects of N and S Functionalities on Binary Gas Co-adsorption on a Coal Macromolecule. Energy & Fuels, 2019, 33, 3934-3946.	5.1	25
106	Tailoring Synthetic Solâ€“Gel CaO Sorbents with High Reactivity or High Stability for Ca-Looping CO₂ Capture. Industrial & Engineering Chemistry Research, 2019, 58, 8484-8494.	3.7	24
107	Improved capture of carbon dioxide and methane via adding micropores within porous boron nitride fibers. Journal of Materials Science, 2019, 54, 10168-10178.	3.7	10
108	Kinetics Modeling, Development, and Comparison for the Reaction of Calcium Oxide with Steam. Energy & Fuels, 2019, 33, 5505-5517.	5.1	5
109	Performance analysis of a double calcium loopingâ€integrated biomassâ€fired power plant: Exploring a carbon reduction opportunity. International Journal of Energy Research, 2019, 43, 5301-5318.	4.5	12

#	Article	IF	Citations
110	Structural and kinetic analysis of CO2 sorption on NaNO2-promoted MgO at moderate temperatures. Chemical Engineering Journal, 2019, 372, 886-895.	12.7	37
111	Synthesis of highly effective stabilized CaO sorbents <i>via</i> a sacrificial N-doped carbon nanosheet template. Journal of Materials Chemistry A, 2019, 7, 9173-9182.	10.3	35
112	Calcium-looping reforming of methane realizes in situ CO ₂ utilization with improved energy efficiency. Science Advances, 2019, 5, eaav5077.	10.3	153
113	Fundamental studies of carbon capture using CaO-based materials. Journal of Materials Chemistry A, 2019, 7, 9977-9987.	10.3	50
114	Techno-economic feasibility assessment of calcium looping combustion using commercial technology appraisal tools. Journal of Cleaner Production, 2019, 219, 540-551.	9.3	54
115	Calcination kinetics of cement raw meals under various CO₂ concentrations. Reaction Chemistry and Engineering, 2019, 4, 2129-2140.	3.7	15
116	Outlook of carbon capture technology and challenges. Science of the Total Environment, 2019, 657, 56-72.	8.0	281
117	Development of Alkali Nitrateâ€Containing Li₄SiO₄ for Highâ€Temperature CO₂ Capture. Energy Technology, 2019, 7, 325-332.	3.8	11
118	Accurate Control of Cage-Like CaO Hollow Microspheres for Enhanced CO₂ Capture in Calcium Looping via a Template-Assisted Synthesis Approach. Environmental Science & Technology, 2019, 53, 2249-2259.	10.0	109
119	Post-Combustion Carbon Capture and Storage in Industry. Energy, Environment, and Sustainability, 2019, , 39-53.	1.0	4
120	Investigation of the dynamic evolution of the CO2 carrying capacity of solids with time in La Pereda 1.7 MWth calcium looping pilot plant. International Journal of Greenhouse Gas Control, 2020, 92, 102856.	4.6	9
121	Cross effect between temperature and consolidation on the flow behavior of granular materials in thermal energy storage systems. Powder Technology, 2020, 363, 135-145.	4.2	14
122	Synergistic Enhanced Caâ€"Fe Chemical Looping Reforming Process for Integrated CO₂ Capture and Conversion. Industrial & Engineering Chemistry Research, 2020, 59, 1298-1307.	3.7	23
123	Modeling the deactivation of CaO-based sorbents during multiple Ca-looping cycles for CO2 post-combustion capture. Computers and Chemical Engineering, 2020, 134, 106679.	3.8	16
124	Combustion of solid recovered fuels within the calcium looping process â€" Experimental demonstration at 1 MWth scale. Experimental Thermal and Fluid Science, 2020, 113, 110023.	2.7	21
125	Toward a Mechanistic Understanding and Optimization of Molten Alkali Metal Borates (A_{<i>x</i>}B_{1â€"<i>x</i>}O_{1.5â€"<i>x</i>}) for High-Temperature CO₂ Capture. Chemistry of Materials, 2020, 32, 348-359.	6.7	21
126	Role of particle size on the cohesive behavior of limestone powders at high temperature. Chemical Engineering Journal, 2020, 391, 123520.	12.7	8
127	Developments in calcium/chemical looping and metal oxide redox cycles for high-temperature thermochemical energy storage: A review. Fuel Processing Technology, 2020, 199, 106280.	7.2	95

#	Article	IF	Citations
128	Mechanistic Understanding of CaOâ€Based Sorbents for Highâ€Temperature CO₂ Capture: Advanced Characterization and Prospects. ChemSusChem, 2020, 13, 6259-6272.	6.8	38
129	Thermochemical conversion routes of hydrogen production from organic biomass: processes, challenges and limitations. Biomass Conversion and Biorefinery, 2023, 13, 8509-8534.	4.6	16
130	The potential of molten metal oxide sorbents for carbon capture at high temperature: Conceptual design. Applied Energy, 2020, 280, 116016.	10.1	15
131	Supercritical CO2 cycle for coal-fired power plant based on calcium looping combustion. Thermal Science and Engineering Progress, 2020, 20, 100723.	2.7	8
132	Enhancement of CaOâ€based sorbent for CO₂ capture through doping with seawater. , 2020, 10, 878-883.		6
133	In situ XRD analysis of dolomite calcination under CO2 in a humid environment. CrystEngComm, 2020, 22, 6502-6516.	2.6	7
134	Understanding Material Compatibility in CO2 Capture Systems Using Molten Alkali Metal Borates. ACS Applied Materials & Interfaces, 2020, 12, 51468-51477.	8.0	10
135	Review on the Development of Sorbents for Calcium Looping. Energy & Fuels, 2020, 34, 7806-7836.	5.1	117
136	Density Functional Theory Study on CO₂ Adsorption by Ce-Promoted CaO in the Presence of Steam. Energy & Fuels, 2020, 34, 6197-6208.	5.1	31
137	Ultrafast scale-up synthesis of calcium rod/layer MOFs and luminescence detection of water in organic solvents. Materials Advances, 2020, 1, 689-697.	5.4	2
139	Simulation of tar-free biomass syngas enhancement in a calcium looping operation using Aspen Plus built-in fluidized bed model. International Journal of Greenhouse Gas Control, 2020, 99, 103096.	4.6	8
140	Thermal Integration of a Flexible Calcium Looping CO₂ Capture System in an Existing Back-Up Coal Power Plant. ACS Omega, 2020, 5, 4844-4852.	3.5	10
141	Prospects for bioenergy with carbon capture & storage (BECCS) in the United States pulp and paper industry. Energy and Environmental Science, 2020, 13, 2243-2261.	30.8	25
142	Performance evaluation of an integrated redesigned coal fired power plant with CO2 capture by calcium looping process. Applied Thermal Engineering, 2020, 170, 115027.	6.0	12
143	Development of robust CaO-based sorbents from blast furnace slag for calcium looping CO2 capture. Chemical Engineering Journal, 2020, 387, 124140.	12.7	62
144	Chemical looping beyond combustion â€“ a perspective. Energy and Environmental Science, 2020, 13, 772-804.	30.8	325
145	In Situ Cu-Loaded Porous Boron Nitride Nanofiber as an Efficient Adsorbent for CO₂ Capture. ACS Sustainable Chemistry and Engineering, 2020, 8, 7454-7462.	6.7	30
147	Synergy of red mud oxygen carrier with MgO and NiO for enhanced chemical-looping combustion. Energy, 2020, 197, 117202.	8.8	36

#	Article	IF	Citations
148	Bench-Scale Demonstration of Molten Alkali Metal Borates for High-Temperature CO₂ Capture. Industrial & Engineering Chemistry Research, 2020, 59, 8937-8945.	3.7	14
149	Advanced power cycles for coal-fired power plants based on calcium looping combustion: A techno-economic feasibility assessment. Applied Energy, 2020, 269, 114954.	10.1	23
150	Effect of steam addition during carbonation, calcination or hydration on re-activation of CaO sorbent for CO2 capture. Journal of CO2 Utilization, 2020, 39, 101167.	6.8	35
151	Modelling of a fluidized bed carbonator reactor for post-combustion CO2 capture considering bed hydrodynamics and sorbent characteristics. Chemical Engineering Journal, 2021, 406, 126762.	12.7	16
152	Low concentration CO2 capture in fluidized beds of Ca(OH)2 as affected by storage humidity. Chemical Engineering Journal, 2021, 407, 127179.	12.7	9
153	Novel synthesis of tailored Li4SiO4-based microspheres for ultrafast CO2 adsorption. Fuel Processing Technology, 2021, 213, 106675.	7.2	9
154	Hydrogen production from absorption-enhanced steam gasification of Enteromorpha prolifera and its char using Ce-doped CaO material. Fuel, 2021, 287, 119554.	6.4	26
155	Multi-objective optimisation and guidelines for the design of dispatchable hybrid solar power plants with thermochemical energy storage. Applied Energy, 2021, 282, 116257.	10.1	23
156	Heterojunction-redox catalysts of Fe_xCo_yMg₁₀CaO for high-temperature CO₂ capture and <i>in situ</i> conversion in the context of green manufacturing. Energy and Environmental Science, 2021, 14, 2291-2301.	30.8	86
157	Template-Free Synthesis of Hollow CaO/Ca₂SiO₄ Nanoparticle as a Cyclically Stable High-Capacity CO₂ Sorbent. ACS Sustainable Chemistry and Engineering, 2021, 9, 2171-2179.	6.7	32
158	Efficient NO reduction by carbon-deposited CaO in the carbonation step of calcium looping for the CO₂ capture. Reaction Chemistry and Engineering, 2021, 6, 1829-1844.	3.7	8
159	Scaling-up the Calcium-Looping Process for CO₂ Capture and Energy Storage. KONA Powder and Particle Journal, 2021, 38, 189-208.	1.7	37
160	Techno-Economic Analyses of the CaO/CaCO3 Post-Combustion CO2 Capture From NGCC Power Plants. Frontiers in Chemical Engineering, 2021, 2, .	2.7	6
161	Textile-Based Triboelectric Nanogenerators for Wearable Self-Powered Microsystems. Micromachines, 2021, 12, 158.	2.9	31
162	Steam Reactivation of Biotemplated CaO-Based Pellets for Cyclic CO₂ Capture. Energy & Fuels, 2021, 35, 6056-6067.	5.1	11
163	High-temperature CO2 adsorption by one-step fabricated Nd-doped Li4SiO4 pellets. Chemical Engineering Journal, 2021, 410, 128346.	12.7	21
164	Sorbents for the Capture of CO₂ and Other Acid Gases: A Review. Industrial & Engineering Chemistry Research, 2021, 60, 9313-9346.	3.7	55
165	Thermodynamic and economic analysis of a new 600 MWe coal-fired power plant integrated with CaO-based carbon capture system. International Journal of Greenhouse Gas Control, 2021, 109, 103386.	4.6	8

#	Article	IF	Citations
166	Experimental and density functional theory study of the synergistic effect between steam and SO2 on CO2 capture of calcium-based sorbents. Fuel, 2021, 295, 120634.	6.4	14
167	Calcination under low CO2 pressure enhances the calcium Looping performance of limestone for thermochemical energy storage. Chemical Engineering Journal, 2021, 417, 127922.	12.7	24
168	CO₂ Capture at Medium to High Temperature Using Solid Oxide-Based Sorbents: Fundamental Aspects, Mechanistic Insights, and Recent Advances. Chemical Reviews, 2021, 121, 12681-12745.	47.7	177
169	Inhibitory Effect of Na and Al on the Sintering Phenomenon of Calcium-Based Sorbents during Calcium Looping. Energy & Fuels, 2021, 35, 13871-13876.	5.1	4
170	A novel calcium loopingâ€“integrated <scp>NGCC</scp> power plant configuration for carbon capture and utilizationâ€”Comprehensive performance analysis. International Journal of Energy Research, 2022, 46, 900-922.	4.5	5
171	Thermochemical energy storage system development utilising limestone. Chemical Engineering Journal Advances, 2021, 8, 100168.	5.2	14
172	The Sevilla Powder Tester: A Tool for Measuring the Flow Properties of Cohesive Powders at High Temperatures. KONA Powder and Particle Journal, 2022, 39, 29-44.	1.7	1
173	The Calcium Looping process for energy storage: Insights from in situ XRD analysis. Chemical Engineering Journal, 2022, 429, 132244.	12.7	27
174	Fluidization and reaction behavior in chemical looping gasification of lignite. Sustainable Energy and Fuels, 2021, 5, 3656-3665.	4.9	6
175	Industrial carbon dioxide capture and utilization: state of the art and future challenges. Chemical Society Reviews, 2020, 49, 8584-8686.	38.1	610
176	Investigation of Process Parameters Influence on Municipal Solid Waste Gasification with CO2 Capture via Process Simulation Approach. International Journal of Renewable Energy Development, 2021, 10, 1-10.	2.4	13
177	Investigation on the Removal of Carbon Dioxide Exhausted from Industrial Units in a Lab-Scale Fluidized Bed Reactor. Bulletin of Chemical Reaction Engineering and Catalysis, 2020, 15, 579-590.	1.1	2
178	Effect of loading strategy between promoter and calcium oxide on CO2 capture performance for metalâ€“organic framework derived sorbents. Chemical Engineering Journal, 2022, 431, 133855.	12.7	2
179	Techno-economic analysis of a 660 MWe supercritical coal power plant in India retrofitted with calcium looping (CaL) based CO2 capture system. International Journal of Greenhouse Gas Control, 2021, 112, 103522.	4.6	6
180	Overlooked pitfalls in CaO carbonation kinetics studies nearby equilibrium: Instrumental effects on calculated kinetic rate constants. AEJ - Alexandria Engineering Journal, 2022, 61, 6129-6138.	6.4	1
181	Modeling and multi-objective optimization of microalgae biomass production and CO2 biofixation using hybrid intelligence approaches. Renewable and Sustainable Energy Reviews, 2022, 157, 112016.	16.4	22
182	Theoretical approaches in hot CO2 capture using modified CaO-based sorbents: Review. Journal of CO2 Utilization, 2022, 57, 101875.	6.8	8
184	Fractal-like random pore model applied to CO2 capture by CaO sorbent. Chemical Engineering Science, 2022, 254, 117649.	3.8	2

#	Article	IF	Citations
185	Direct Synthesis of a Regenerative CaOâ€"Fe₃O₄â€"SiO₂ Composite Adsorbent from Converter Slag for CO₂ Capture Applications. ACS Sustainable Chemistry and Engineering, 2022, 10, 372-381.	6.7	14
186	Carbon capture for decarbonisation of energy-intensive industries: a comparative review of techno-economic feasibility of solid looping cycles. Frontiers of Chemical Science and Engineering, 2022, 16, 1291-1317.	4.4	11
187	A 4E analysis of a novel coupling process of syngas purification and CO2 capture, transcritical CO2 power and absorption refrigeration. Chemical Engineering Journal, 2022, 445, 136757.	12.7	10
188	Techno-Economic Analysis of Integrated Carbon Capture and Utilisation Compared with Carbon Capture and Utilisation. SSRN Electronic Journal, 0, , .	0.4	0
189	Calcium looping carbon capture: Progress and prospects. Canadian Journal of Chemical Engineering, 2022, 100, 2140-2171.	1.7	16
190	Hydride-based thermal energy storage. Progress in Energy, 2022, 4, 032008.	10.9	14
191	Evaluation of Mgo- and Cazro3-Promoted Cao-Based Pellets Produced Via Solution Combustion Synthesis. SSRN Electronic Journal, 0, , .	0.4	0
192	Multiple activation mechanisms of CaO-based sorbents promoted by pre-sintering-hydration. Journal of Environmental Chemical Engineering, 2022, 10, 108216.	6.7	2
193	Progress in reducing calcination reaction temperature of Calcium-Looping CO2 capture technology: A critical review. Chemical Engineering Journal, 2022, 450, 137952.	12.7	41
194	Evaluation of MgO- and CaZrO3-promoted CaO-based pellets produced via solution combustion synthesis. Chemical Engineering Journal, 2022, 450, 138274.	12.7	12
195	Effect of uncertainty in sorbent characteristic on technoâ€economic feasibility of carbonate looping for decarbonisation of coalâ€fired power plant. International Journal of Energy Research, 2022, 46, 17441-17454.	4.5	1
196	Recent advances on the modeling and optimization of CO2 capture processes. Computers and Chemical Engineering, 2022, 165, 107938.	3.8	9
197	Full-loop CFD simulation of lignite Chemical Looping Gasification with phosphogypsum as oxygen carrier using a circulating fluidized bed. Energy, 2023, 262, 125451.	8.8	6
198	Techno-economic analysis of integrated carbon capture and utilisation compared with carbon capture and utilisation with syngas production. Fuel, 2023, 332, 125972.	6.4	17
199	Yolkâ€"shell-type CaO-based sorbents for CO₂capture: assessing the role of nanostructuring for the stabilization of the cyclic CO₂uptake. Nanoscale, 2022, 14, 16816-16828.	5.6	5
200	Development of Power-to-X Catalytic Processes for CO2 Valorisation: From the Molecular Level to the Reactor Architecture. Chemistry, 2022, 4, 1250-1280.	2.2	3
201	Calcium-looping based energy conversion and storage for carbon neutrality â€"the way forward. , 2022, 1, .		5
202	Recent progress in calcium looping integrated with chemical looping combustion (CaL-CLC) using bifunctional CaO/CuO composites for CO2 capture: A state-of-the-art review. Fuel, 2023, 334, 126630.	6.4	18

#	Article	IF	Citations
203	One step upcycling CO2 from flue gas into CO using natural stone in an integrated CO2 capture and utilisation system. Carbon Capture Science & Technology, 2022, 5, 100078.	10.4	15
204	Integration of carbon capture technologies in blast furnace based steel making: A comprehensive and systematic review. Fuel, 2023, 336, 127074.	6.4	23
205	Uncovering the CO₂ Capture Mechanism of NaNO₃-Promoted MgO by ¹⁸O Isotope Labeling. Jacs Au, 2022, 2, 2731-2741.	7.9	7
206	Recent progress in the fabrication and processing of triboelectric yarns. , 2023, 2, 63-89.		1
207	Review of Carbonate-Based Systems for Thermochemical Energy Storage for Concentrating Solar Power Applications: State-of-the-Art and Outlook. Energy & Fuels, 2023, 37, 1777-1808.	5.1	23
208	A novel method to greener carbon material for CO2 adsorption. Applied Surface Science Advances, 2023, 13, 100363.	6.8	4
209	Industrial carbon dioxide capture and utilization. , 2023, , 231-278.		0
210	CO₂ Adsorption on a CaOâ€"Ca₁₂Al₁₄O₃₃ Composite Synthesized from a Blast Furnace Slag and its Regenerative Ability. ISIJ International, 2023, 63, 190-196.	1.4	2
211	A techno-economic assessment of the reutilisation of municipal solid waste incineration ash for CO2 capture from incineration flue gases by calcium looping. Chemical Engineering Journal, 2023, 464, 142567.	12.7	10
212	Cu-based oxygen carriers for chemical looping processes: Opportunities and challenges. Fuel, 2023, 342, 127828.	6.4	23
213	Efficient direct solar-driven thermochemical energy storage of (AlMgFeMn)O CaCO3 pellets in a fluidized bed reactor. Energy Conversion and Management, 2023, 285, 116990.	9.2	14
214	The Ca-Cu looping process using natural CO2 sorbents in a packed bed: Operation strategies to accommodate activity decay. Chemical Engineering Science, 2023, 273, 118659.	3.8	1
215	Countercurrent moving bed carbonator for CO2 capture in decoupled calcium looping systems. Chemical Engineering Journal, 2023, 461, 141956.	12.7	4
216	Synergistic promotions between CO2 capture and in-situ conversion on Ni-CaO composite catalyst. Nature Communications, 2023, 14, .	12.8	41
217	One-step fabrication of size-controllable, biowaste-templated Li4SiO4 spherical pellets via freeze-drying method for cyclic CO2 capture. Chemical Engineering Journal, 2023, 462, 142297.	12.7	5
218	Decrease in the Adsorption Capacity of Adsorbents in the High-Temperature Carbonate Loop Process for CO2 Capture. Crystals, 2023, 13, 559.	2.2	0
219	Experimental analysis on calcination and carbonation process in calcium looping for CO2 capture: study case of cement plants in Indonesia. Clean Energy, 2023, 7, 313-327.	3.2	1
220	Structure of Na Species in Promoted CaOâ€Based Sorbents and Their Effect on the Rate and Extent of the CO₂ Uptake. Advanced Functional Materials, 2023, 33, .	14.9	0

#	Article	IF	Citations
221	Computational model of a Calcium-looping fluidized bed calcination reactor with imposed concentrated solar irradiance. Solar Energy, 2023, 258, 72-87.	6.1	4
222	Chemical looping: a technology platform for upcycling low-grade industrial resources. Discover Chemical Engineering, 2023, 3, .	2.2	3
223	Hydrogen production through two-stage sorption-enhanced biomass gasification: process design and thermodynamic analysis. International Journal of Hydrogen Energy, 2023, 48, 38602-38616.	7.1	1
224	Effect of Mg/Al Oxides Supports on CaO Sorbents Prepared by Wetâ€Mixing Synthesis for CO₂ Capture. Chemical Engineering and Technology, 0, , .	1.5	0
225	Efficient in situ conversion of captured CO2 into fuels enabled by direct solar driven multifunctional calcium looping. Renewable and Sustainable Energy Reviews, 2023, 183, 113484.	16.4	2
226	Catalytic calcium-looping gasification of biochar with in situ CO2 utilization with improved energy efficiency. Chemical Engineering Journal, 2023, 472, 144857.	12.7	2
227	Calcium looping for CO2 capture, H2 and electricity coproduction in coal fired power plants. Computer Aided Chemical Engineering, 2023, , 2977-2982.	0.5	0
228	Low-temperature conversion of CaO-captured CO₂ to CH₄ over a greenly prepared Ni/CaO/Al₂O₃ composite under static pressure conditions. Reaction Chemistry and Engineering, 2023, 8, 2632-2640.	3.7	1
230	Biogas upgrading through calcium looping: Experimental validation and study of CO2 capture. Biomass and Bioenergy, 2023, 176, 106918.	5.7	1
231	Comparative analysis of CO2 capture technologies using amine absorption and calcium looping integrated with natural gas combined cycle power plant. Energy, 2023, 284, 128599.	8.8	9
232	Ongoing activity on CO2 capture in the power sector: Review of the demonstration projects worldwide. , 2016, , 564-580.		0
233	Proof of Concept of a Novel Solidâ€“Solid Heat Exchanger Based on a Double L-Valve Concept. Energies, 2023, 16, 6156.	3.1	0
234	Optimization of an improved calcium-looping process for thermochemical energy storage in concentrating solar power plants. Journal of Energy Storage, 2023, 72, 108199.	8.1	2
235	Accurate descriptions of molecule-surface interactions for understanding CO2 capture by MgO-based sorbents in wet conditions. Carbon Capture Science & Technology, 2023, 9, 100148.	10.4	2
236	Strategies to improve CaO absorption cycle stability and progress of catalysts in Ca-based DFMs for integrated CO2 capture-conversion: A critical review. Journal of Environmental Chemical Engineering, 2023, 11, 111047.	6.7	3
237	Bioenergy with carbon capture, storage and utilization: Potential technologies to mitigate climate change. Biomass and Bioenergy, 2023, 177, 106941.	5.7	1
239	Influence of Long-Term CaO Storage Conditions on the Calcium Looping Thermochemical Reactivity. Energy & Fuels, 0, , .	5.1	0
240	Conventional and optimized testing facilities of calcium looping process for CO2 capture: A systematic review. Fuel, 2024, 358, 130337.	6.4	0

#	Article	IF	Citations
241	A comprehensive review of carbon capture science and technologies. Carbon Capture Science & Technology, 2023, , 100178.	10.4	2
243	Potassium-Promoted Limestone for Preferential Direct Hydrogenation of Carbonates in Integrated CO₂ Capture and Utilization. Jacs Au, 0, , .	7.9	0
244	Carbon Dioxide Sequestration Methodothologiesâ€”A Review. American Journal of Climate Change, 2023, 12, 579-627.	0.9	0
245	A Comprehensive Review on Carbon Dioxide Sequestration Methods. Energies, 2023, 16, 7971.	3.1	0
246	Life cycle energy-carbon-water footprint assessment of an existing coal power plant retrofitted with calcium looping (CaL) based CCS system. International Journal of Greenhouse Gas Control, 2023, 130, 104015.	4.6	0
247	Magnesium calcites for CO2 capture and thermochemical energy storage using the calcium-looping process. Environmental Research, 2024, 246, 118119.	7.5	0
248	Calcium looping for combined CO2 capture and thermochemical energy storage. , 2024, , 119-162.		0
249	Highly stable FeNiMnCaO catalyst for integrated CO2 capture and hydrogenation to CO. Chemical Engineering Journal, 2024, 482, 148948.	12.7	0
251	Photoinduced enhanced CO2 capture performance on carbon-doped boron nitride adsorbent. Separation and Purification Technology, 2024, 339, 126685.	7.9	0
252	Techno-economic assessment of retrofitting indirect-heated calcium looping using coal and biomass as fuels into an existing cement plant for CO2 capture. , 2024, 123, 205236.		0
253	A comprehensive review of semi-clathrate hydrates for CO2 capture: Characterizations, mechanism and role of promoters. Carbon Capture Science & Technology, 2024, 12, 100217.	10.4	0
254	Coupled kinetic and hydrodynamic model for a carbonator reactor of calcium looping process: Sulfur dioxide effect. Chemical Engineering Research and Design, 2024, 185, 1205-1218.	5.6	0