Aldo Steinfeld

List of Publications by Year
in descending order

462 papers	26,570 citations	4942 84 h-index	10127 140 g-index
483 all docs	483 docs citations	483 times ranked	11056 citing authors

#	Article	IF	Citations
1	High-Flux Solar-Driven Thermochemical Dissociation of CO ₂ and H ₂ O Using Nonstoichiometric Ceria. Science, 2010, 330, 1797-1801.	6.0	1,292
2	Solar thermochemical production of hydrogenâ€“â€“a review. Solar Energy, 2005, 78, 603-615.	2.9	1,144
3	Solar hydrogen production via a two-step water-splitting thermochemical cycle based on Zn/ZnO redox reactions. International Journal of Hydrogen Energy, 2002, 27, 611-619.	3.8	638
4	Concentrating solar thermal power and thermochemical fuels. Energy and Environmental Science, 2012, 5, 9234.	15.6	591
5	Syngas production by simultaneous splitting of H2O and CO₂via ceria redox reactions in a high-temperature solar reactor. Energy and Environmental Science, 2012, 5, 6098-6103.	15.6	393
6	Amine-Based Nanofibrillated Cellulose As Adsorbent for CO₂ Capture from Air. Environmental Science & Technology, 2011, 45, 9101-9108.	4.6	367
7	Solar thermochemical splitting of CO₂ into separate streams of CO and O₂ with high selectivity, stability, conversion, and efficiency. Energy and Environmental Science, 2017, 10, 1142-1149.	15.6	360
8	Solar Thermochemical CO₂ Splitting Utilizing a Reticulated Porous Ceria Redox System. Energy & Fuels, 2012, 26, 7051-7059.	2.5	331
9	Oxygen exchange materials for solar thermochemical splitting of H2O and CO2: a review. Materials Today, 2014, 17, 341-348.	8.3	322
10	Packed-bed thermal storage for concentrated solar power â€“ Pilot-scale demonstration and industrial-scale design. Solar Energy, 2012, 86, 3084-3098.	2.9	307
11	High-temperature thermal storage using a packed bed of rocks â€“ Heat transfer analysis and experimental validation. Applied Thermal Engineering, 2011, 31, 1798-1806.	3.0	306
12	Lanthanumâ€“Strontiumâ€“Manganese Perovskites as Redox Materials for Solar Thermochemical Splitting of H₂O and CO₂. Energy & Fuels, 2013, 27, 4250-4257.	2.5	306
13	Optimum aperture size and operating temperature of a solar cavity-receiver. Solar Energy, 1993, 50, 19-25.	2.9	223
14	Production of solar hydrogen by a novel, 2-step, water-splitting thermochemical cycle. Energy, 1995, 20, 325-330.	4.5	213
15	Thermodynamic Analysis of Cerium-Based Oxides for Solar Thermochemical Fuel Production. Energy & Fuels, 2012, 26, 1928-1936.	2.5	213
16	DESIGN ASPECTS OF SOLAR THERMOCHEMICAL ENGINEERINGâ€”A CASE STUDY: TWO-STEP WATER-SPLITTING CYCLE USING THE Fe3O4/FeO REDOX SYSTEM. Solar Energy, 1999, 65, 43-53.	2.9	211
17	CO2 capture from atmospheric air via consecutive CaO-carbonation and CaCO3-calcination cycles in a fluidized-bed solar reactor. Chemical Engineering Journal, 2009, 146, 244-248.	6.6	204
18	Solar-driven gasification of carbonaceous feedstockâ€”a review. Energy and Environmental Science, 2011, 4, 73-82.	15.6	204

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19	Review: Photochemical and Thermochemical Production of Solar Fuels from H₂O and CO₂ Using Metal Oxide Catalysts. Industrial & Engineering Chemistry Research, 2012, 51, 11828-11840.	1.8	203
20	Solar-processed metals as clean energy carriers and water-splitters. International Journal of Hydrogen Energy, 1998, 23, 767-774.	3.8	199
21	Separation of CO2 from air by temperature-vacuum swing adsorption using diamine-functionalized silica gel. Energy and Environmental Science, 2011, 4, 3584.	15.6	189
22	Solar hydrogen production by thermal decomposition of natural gas using a vortex-flow reactor. International Journal of Hydrogen Energy, 2004, 29, 47-55.	3.8	187
23	A Novel 50kW 11,000 suns High-Flux Solar Simulator Based on an Array of Xenon Arc Lamps. Journal of Solar Energy Engineering, Transactions of the ASME, 2007, 129, 405-411.	1.1	186
24	A solar chemical reactor for co-production of zinc and synthesis gas. Energy, 1998, 23, 803-814.	4.5	182
25	Hydrogen production by steam-gasification of petroleum coke using concentrated solar powerâ€”II Reactor design, testing, and modeling. International Journal of Hydrogen Energy, 2006, 31, 797-811.	3.8	180
26	Tomography-based Monte Carlo determination of radiative properties of reticulate porous ceramics. Journal of Quantitative Spectroscopy and Radiative Transfer, 2007, 105, 180-197.	1.1	178
27	Kinetic analysis of the carbonation reactions for the capture of CO2 from air via the Ca(OH)2â€“CaCO3â€“CaO solar thermochemical cycle. Chemical Engineering Journal, 2007, 129, 75-83.	6.6	175
28	Thermochemical CO₂ splitting via redox cycling of ceria reticulated foam structures with dual-scale porosities. Physical Chemistry Chemical Physics, 2014, 16, 10503-10511.	1.3	171
29	Drop-in fuels from sunlight and air. Nature, 2022, 601, 63-68.	13.7	170
30	The production of zinc by thermal dissociation of zinc oxideâ€”solar chemical reactor design. Solar Energy, 1999, 67, 161-167.	2.9	169
31	Demonstration of the Entire Production Chain to Renewable Kerosene via Solar Thermochemical Splitting of H₂O and CO₂. Energy & Fuels, 2015, 29, 3241-3250.	2.5	167
32	Review of the Two-Step H2O/CO2-Splitting Solar Thermochemical Cycle Based on Zn/ZnO Redox Reactions. Materials, 2010, 3, 4922-4938.	1.3	166
33	The production of Zn from ZnO in a high-temperature solar decomposition quench processâ€”I. The scientific framework for the process. Chemical Engineering Science, 1998, 53, 2503-2517.	1.9	160
34	In situ formation and hydrolysis of Zn nanoparticles for H2H2 production by the 2-step ZnO/Zn water-splitting thermochemical cycle. International Journal of Hydrogen Energy, 2006, 31, 55-61.	3.8	158
35	Synthesis, Characterization, and Thermochemical Redox Performance of Hf⁴⁺, Zr⁴⁺, and Sc³⁺ Doped Ceria for Splitting CO₂. Journal of Physical Chemistry C, 2013, 117, 24104-24114.	1.5	153
36	Tomography based determination of permeability, Dupuitâ€“Forchheimer coefficient, and interfacial heat transfer coefficient in reticulate porous ceramics. International Journal of Heat and Fluid Flow, 2008, 29, 315-326.	1.1	150

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37	CO₂ Splitting via Two-Step Solar Thermochemical Cycles with Zn/ZnO and FeO/Fe₃O₄ Redox Reactions: Thermodynamic Analysis. Energy & Fuels, 2008, 22, 3544-3550.	2.5	149
38	High-temperature solar thermochemistry: Production of iron and synthesis gas by Fe3O4-reduction with methane. Energy, 1993, 18, 239-249.	4.5	140
39	Single-Component and Binary CO₂ and H₂O Adsorption of Amine-Functionalized Cellulose. Environmental Science & Technology, 2014, 48, 2497-2504.	4.6	138
40	Concurrent Separation of CO₂ and H₂O from Air by a Temperature-Vacuum Swing Adsorption/Desorption Cycle. Environmental Science & Technology, 2012, 46, 9191-9198.	4.6	137
41	Design of packed bed thermal energy storage systems for high-temperature industrial process heat. Applied Energy, 2015, 137, 812-822.	5.1	137
42	Experimental investigation of a packed-bed solar reactor for the steam-gasification of carbonaceous feedstocks. Fuel Processing Technology, 2009, 90, 360-366.	3.7	136
43	A Receiver-Reactor for the Solar Thermal Dissociation of Zinc Oxide. Journal of Solar Energy Engineering, Transactions of the ASME, 2008, 130, .	1.1	134
44	Fast and Reversible Direct CO₂ Capture from Air onto All-Polymer Nanofibrillated Celluloseâ€"Polyethylenimine Foams. Environmental Science & Technology, 2015, 49, 3167-3174.	4.6	129
45	Oxygen nonstoichiometry, defect equilibria, and thermodynamic characterization of LaMnO3 perovskites with Ca/Sr A-site and Al B-site doping. Acta Materialia, 2016, 103, 700-710.	3.8	128
46	Solar thermal production of zinc and syngas via combined ZnO-reduction and CH4-reforming processes. International Journal of Hydrogen Energy, 1995, 20, 793-804.	3.8	127
47	Solar thermal cracking of methane in a particle-flow reactor for the co-production of hydrogen and carbon. International Journal of Hydrogen Energy, 2009, 34, 7676-7685.	3.8	127
48	The solar thermal gasification of coal â€" energy conversion efficiency and CO2 mitigation potential. Energy, 2003, 28, 441-456.	4.5	124
49	CO2 capture from air and co-production of H2 via the Ca(OH)2â€"CaCO3 cycle using concentrated solar powerâ€"Thermodynamic analysis. Energy, 2006, 31, 1715-1725.	4.5	122
50	Solar-Driven Thermochemical Splitting of CO2 and In Situ Separation of CO and O2 across a Ceria Redox Membrane Reactor. Joule, 2017, 1, 146-154.	11.7	120
51	Diffusion of Oxygen in Ceria at Elevated Temperatures and Its Application to H₂O/CO₂ Splitting Thermochemical Redox Cycles. Journal of Physical Chemistry C, 2014, 118, 5216-5225.	1.5	119
52	Tomography-Based Heat and Mass Transfer Characterization of Reticulate Porous Ceramics for High-Temperature Processing. Journal of Heat Transfer, 2010, 132, .	1.2	118
53	Heliostat field layout optimization for high-temperature solar thermochemical processing. Solar Energy, 2011, 85, 334-343.	2.9	118
54	Thermogravimetric analysis of the ZnO/Zn water splitting cycle. Thermochimica Acta, 2000, 359, 69-75.	1.2	116

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55	Lanthanum Manganite Perovskites with Ca/Sr Aâ€site and Al Bâ€site Doping as Effective Oxygen Exchange Materials for Solar Thermochemical Fuel Production. Energy Technology, 2015, 3, 1130-1142.	1.8	116
56	Solar Syngas Production via H₂O/CO₂-Splitting Thermochemical Cycles with Zn/ZnO and FeO/Fe₃O₄ Redox Reactions. Chemistry of Materials, 2010, 22, 851-859.	3.2	114
57	Kinetics of CO₂ Reduction over Nonstoichiometric Ceria. Journal of Physical Chemistry C, 2015, 119, 16452-16461.	1.5	114
58	Heat transfer model of a solar receiver-reactor for the thermal dissociation of ZnOâ€”Experimental validation at 10kW and scale-up to 1MW. Chemical Engineering Journal, 2009, 150, 502-508.	6.6	113
59	Pilot-scale demonstration of advanced adiabatic compressed air energy storage, Part 1: Plant description and tests with sensible thermal-energy storage. Journal of Energy Storage, 2018, 17, 129-139.	3.9	113
60	Stability of Amine-Functionalized Cellulose during Temperature-Vacuum-Swing Cycling for CO₂ Capture from Air. Environmental Science & Technology, 2013, 47, 10063-10070.	4.6	111
61	Experimental investigation of the thermal and mechanical stability of rocks for high-temperature thermal-energy storage. Applied Energy, 2017, 203, 373-389.	5.1	111
62	DIRECT SOLAR THERMAL DISSOCIATION OF ZINC OXIDE: CONDENSATION AND CRYSTALLISATION OF ZINC IN THE PRESENCE OF OXYGEN. Solar Energy, 1999, 65, 59-69.	2.9	110
63	CO₂Splitting via Two-Step Solar Thermochemical Cycles with Zn/ZnO and FeO/Fe₃O₄Redox Reactions II: Kinetic Analysis. Energy & Fuels, 2009, 23, 2832-2839.	2.5	110
64	Solar thermal hybrids for combustion power plant: A growing opportunity. Progress in Energy and Combustion Science, 2018, 64, 4-28.	15.8	110
65	A 300kW Solar Chemical Pilot Plant for the Carbothermic Production of Zinc. Journal of Solar Energy Engineering, Transactions of the ASME, 2007, 129, 190-196.	1.1	109
66	Stabilization of the outflow temperature of a packed-bed thermal energy storage by combining rocks with phase change materials. Applied Thermal Engineering, 2014, 70, 316-320.	3.0	108
67	Solar syngas production from CO2 and H2O in a two-step thermochemical cycle via Zn/ZnO redox reactions: Thermodynamic cycle analysis. International Journal of Hydrogen Energy, 2011, 36, 12141-12147.	3.8	107
68	Experimental and numerical investigation of combined sensibleâ€“latent heat for thermal energy storage at 575Â°C and above. Solar Energy, 2015, 114, 77-90.	2.9	107
69	Solar-driven biochar gasification in a particle-flow reactor. Chemical Engineering and Processing: Process Intensification, 2009, 48, 1279-1287.	1.8	106
70	Oxygen nonstoichiometry and thermodynamic characterization of Zr doped ceria in the 1573â€“1773 K temperature range. Physical Chemistry Chemical Physics, 2015, 17, 7813-7822.	1.3	105
71	Hydrogen production by steam-gasification of petroleum coke using concentrated solar power?I. Thermodynamic and kinetic analyses. International Journal of Hydrogen Energy, 2005, 30, 605-618.	3.8	104
72	Metals, nitrides, and carbides via solar carbothermal reduction of metal oxides. Energy, 1995, 20, 695-704.	4.5	103

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73	Ammonia Production via a Two-Step Al2O3/AlN Thermochemical Cycle. 1. Thermodynamic, Environmental, and Economic Analyses. Industrial & Engineering Chemistry Research, 2007, 46, 2042-2046.	1.8	103
74	A robotic walker that provides guidance. , 0, , .		101
75	Dry Reforming of Methane Using a Solar-Thermal Aerosol Flow Reactor. Industrial & Engineering Chemistry Research, 2004, 43, 5489-5495.	1.8	101
76	Solar-Driven Coal Gasification in a Thermally Irradiated Packed-Bed Reactor. Energy & Fuels, 2008, 22, 2043-2052.	2.5	100
77	Economic evaluation of the industrial solar production of lime. Energy Conversion and Management, 2005, 46, 905-926.	4.4	98
78	A cavity-receiver containing a tubular absorber for high-temperature thermochemical processing using concentrated solar energy. International Journal of Thermal Sciences, 2008, 47, 1496-1503.	2.6	98
79	A New High-Flux Solar Furnace for High-Temperature Thermochemical Research. Journal of Solar Energy Engineering, Transactions of the ASME, 1999, 121, 77-80.	1.1	96
80	Potential improvements in the optical and thermal efficiencies of parabolic trough concentrators. Solar Energy, 2014, 107, 398-414.	2.9	95
81	Physico-chemical changes in Ca, Sr and Al-doped Laâ€“Mnâ€“O perovskites upon thermochemical splitting of CO₂via redox cycling. Physical Chemistry Chemical Physics, 2015, 17, 6629-6634.	1.3	94
82	Hydrogen production by steam-gasification of petroleum coke using concentrated solar powerâ€”III. Reactor experimentation with slurry feeding. International Journal of Hydrogen Energy, 2007, 32, 992-996.	3.8	93
83	A 1kWe thermoelectric stack for geothermal power generation â€“ Modeling and geometrical optimization. Applied Energy, 2012, 99, 379-385.	5.1	93
84	Carbothermal reduction of alumina: Thermochemical equilibrium calculations and experimental investigation. Energy, 2007, 32, 2420-2427.	4.5	91
85	Design Principles of Perovskites for Thermochemical Oxygen Separation. ChemSusChem, 2015, 8, 1966-1971.	3.6	89
86	Rational design of metal nitride redox materials for solar-driven ammonia synthesis. Interface Focus, 2015, 5, 20140084.	1.5	88
87	The solar thermal decarbonization of natural gas. International Journal of Hydrogen Energy, 2001, 26, 1023-1033.	3.8	87
88	Feasibility of Na-based thermochemical cycles for the capture of CO2 from airâ€”Thermodynamic and thermogravimetric analyses. Chemical Engineering Journal, 2008, 140, 62-70.	6.6	87
89	Kinetic investigation of the thermal decomposition of CH4 by direct irradiation of a vortex-flow laden with carbon particles. International Journal of Hydrogen Energy, 2004, 29, 627-633.	3.8	86
90	Hydrogen production by steam-gasification of carbonaceous materials using concentrated solar energy â€“ V. Reactor modeling, optimization, and scale-up. International Journal of Hydrogen Energy, 2008, 33, 5484-5492.	3.8	86

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91	Heat and mass transfer of temperatureâ€“vacuum swing desorption for CO2 capture from air. Chemical Engineering Journal, 2016, 283, 1329-1338.	6.6	86
92	Experimental Investigation of the Solar Carbothermic Reduction of ZnO Using a Two-cavity Solar Reactor. Journal of Solar Energy Engineering, Transactions of the ASME, 2004, 126, 633-637.	1.1	85
93	Comparing the solar-to-fuel energy conversion efficiency of ceria and perovskite based thermochemical redox cycles for splitting H2O and CO2. International Journal of Hydrogen Energy, 2018, 43, 18814-18831.	3.8	85
94	A New 75 kW High-Flux Solar Simulator for High-Temperature Thermal and Thermochemical Research. Journal of Solar Energy Engineering, Transactions of the ASME, 2003, 125, 117-120.	1.1	82
95	Heat transfer and fluid flow analysis of a 4kW solar thermochemical reactor for ceria redox cycling. Chemical Engineering Science, 2015, 137, 373-383.	1.9	81
96	Analysis of industrial-scale high-temperature combined sensible/latent thermal energy storage. Applied Thermal Engineering, 2016, 101, 657-668.	3.0	78
97	Reticulated porous ceria undergoing thermochemical reduction with high-flux irradiation. International Journal of Heat and Mass Transfer, 2017, 107, 439-449.	2.5	78
98	Purification of metallurgical grade silicon by a solar process. Solar Energy Materials and Solar Cells, 2006, 90, 2099-2106.	3.0	76
99	A novel beam-down, gravity-fed, solar thermochemical receiver/reactor for direct solid particle decomposition: Design, modeling, and experimentation. International Journal of Hydrogen Energy, 2012, 37, 16871-16887.	3.8	76
100	Thermal Reduction of Ceria within an Aerosol Reactor for H₂O and CO₂ Splitting. Industrial & Engineering Chemistry Research, 2014, 53, 2175-2182.	1.8	75
101	Reflections on the design of solar thermal chemical reactors: thoughts in transformation. Energy, 2004, 29, 727-744.	4.5	74
102	Solar Carbothermal Reduction of ZnO:Â Shrinking Packed-Bed Reactor Modeling and Experimental Validation. Industrial & Engineering Chemistry Research, 2004, 43, 7981-7988.	1.8	74
103	Kinetics of the thermal dissociation of ZnO exposed to concentrated solar irradiation using a solarâ€driven thermogravimeter in the 1800â€“2100 K range. AICHE Journal, 2009, 55, 1497-1504.	1.8	74
104	Pore-level engineering of macroporous media for increased performance of solar-driven thermochemical fuel processing. International Journal of Heat and Mass Transfer, 2014, 78, 688-698.	2.5	73
105	Principles of doping ceria for the solar thermochemical redox splitting of H₂O and CO₂. Journal of Materials Chemistry A, 2017, 5, 15578-15590.	5.2	73
106	Syngas Production by Thermochemical Gasification of Carbonaceous Waste Materials in a 150 kW_{th} Packed-Bed Solar Reactor. Energy & Fuels, 2013, 27, 4770-4776.	2.5	72
107	Numerical and experimental study of gasâ€“particle radiative heat exchange in a fluidized-bed reactor for steam-gasification of coal. Chemical Engineering Science, 2007, 62, 599-607.	1.9	71
108	Solar hydrogen production via a two-step thermochemical process based on MgO/Mg redox reactionsâ€”Thermodynamic and kinetic analyses. International Journal of Hydrogen Energy, 2008, 33, 2880-2890.	3.8	71

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109	Solar Thermochemical Process Technology. , 2003, , 237-256.		70
110	CO2Sequestration by Direct Gasâ^'Solid Carbonation of Air Pollution Control (APC) Residues. Energy & Fuels, 2006, 20, 1933-1940.	2.5	68
111	Solar Syngas Production from H₂O and CO₂ via Two-Step Thermochemical Cycles Based on Zn/ZnO and FeO/Fe₃O₄ Redox Reactions: Kinetic Analysis. Energy & Fuels, 2010, 24, 2716-2722.	2.5	68
112	Production of filamentous carbon and hydrogen by solarthermal catalytic cracking of methane. Chemical Engineering Science, 1997, 52, 3599-3603.	1.9	67
113	Tomographic Characterization of a Semitransparent-Particle Packed Bed and Determination of its Thermal Radiative Properties. Journal of Heat Transfer, 2009, 131, .	1.2	67
114	Steam-Gasification of Coal in a Fluidized-Bed/Packed-Bed Reactor Exposed to Concentrated Thermal RadiationModeling and Experimental Validation. Industrial & Engineering Chemistry Research, 2005, 44, 3852-3861.	1.8	66
115	Ammonia Production via a Two-Step Al2O3/AlN Thermochemical Cycle. 2. Kinetic Analysis. Industrial & Engineering Chemistry Research, 2007, 46, 2047-2053.	1.8	66
116	Transient heat transfer in a directly-irradiated solar chemical reactor for the thermal dissociation of ZnO. Applied Thermal Engineering, 2008, 28, 524-531.	3.0	66
117	H2O-splitting thermochemical cycle based on ZnO/Zn-redox: Quenching the effluents from the ZnO dissociation. Chemical Engineering Science, 2008, 63, 217-227.	1.9	66
118	Review of Heat Transfer Research for Solar Thermochemical Applications. Journal of Thermal Science and Engineering Applications, 2013, 5, .	0.8	66
119	Thermodynamic analysis of the co-production of zinc and synthesis gas using solar process heat. Energy, 1996, 21, 205-222.	4.5	65
120	Kinetic investigation on steam gasification of charcoal under direct high-flux irradiation. Chemical Engineering Science, 2003, 58, 5111-5119.	1.9	65
121	Radiative transfer in a solar chemical reactor for the co-production of hydrogen and carbon by thermal decomposition of methane. Chemical Engineering Science, 2004, 59, 5771-5778.	1.9	64
122	Development Steps for Parabolic Trough Solar Power Technologies With Maximum Impact on Cost Reduction. Journal of Solar Energy Engineering, Transactions of the ASME, 2007, 129, 371-377.	1.1	64
123	Tomography-Based Determination of the Effective Thermal Conductivity of Fluid-Saturated Reticulate Porous Ceramics. Journal of Heat Transfer, 2008, 130, .	1.2	64
124	Three-Dimensional Optical and Thermal Numerical Model of Solar Tubular Receivers in Parabolic Trough Concentrators. Journal of Solar Energy Engineering, Transactions of the ASME, 2012, 134, .	1.1	64
125	Tunable thermodynamic activity of La_xSr_{1â^'x}Mn_yAl_{1â^'y}O_{3â^'Î´}(0 â‰¤ x â‰¤ 1, 0 â‰¤ y â‰¤ 1) perovskites for solar thermochemical fuel synthesis. Journal of Materials Chemistry A, 2017, 5, 4172-4182.	5.2	64
126	Experimental Investigation of an Atmospheric-Open Cyclone Solar Reactor for Solid-Gas Thermochemical Reactions. Journal of Solar Energy Engineering, Transactions of the ASME, 1992, 114, 171-174.	1.1	63

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127	Hydrogen production via the solar thermal decarbonization of fossil fuels. Solar Energy, 2006, 80, 1333-1337.	2.9	63
128	Heat Transfer Analysis of a Novel Pressurized Air Receiver for Concentrated Solar Power via Combined Cycles. Journal of Thermal Science and Engineering Applications, 2009, 1, .	0.8	63
129	Optical design and experimental characterization of a solar concentrating dish system for fuel production via thermochemical redox cycles. Solar Energy, 2018, 170, 568-575.	2.9	63
130	Experimental and Numerical Analyses of a Pressurized Air Receiver for Solar-Driven Gas Turbines. Journal of Solar Energy Engineering, Transactions of the ASME, 2012, 134, .	1.1	62
131	An air-based corrugated cavity-receiver for solar parabolic trough concentrators. Applied Energy, 2015, 138, 337-345.	5.1	61
132	A pressurized high-flux solar reactor for the efficient thermochemical gasification of carbonaceous feedstock. Fuel, 2017, 193, 432-443.	3.4	61
133	Pilot-scale demonstration of advanced adiabatic compressed air energy storage, Part 2: Tests with combined sensible/latent thermal-energy storage. Journal of Energy Storage, 2018, 17, 140-152.	3.9	61
134	CO2 capture from air via CaO-carbonation using a solar-driven fluidized bed reactorâ€"Effect of temperature and water vapor concentration. Chemical Engineering Journal, 2009, 155, 867-873.	6.6	60
135	Effective Heat and Mass Transport Properties of Anisotropic Porous Ceria for Solar Thermochemical Fuel Generation. Materials, 2012, 5, 192-209.	1.3	60
136	Tomographyâ€Based Multiscale Analyses of the 3D Geometrical Morphology of Reticulated Porous Ceramics. Journal of the American Ceramic Society, 2008, 91, 2659-2665.	1.9	59
137	Theoretical and experimental investigation of the carbothermic reduction of Fe2O3 using solar energy. Energy, 1991, 16, 1011-1019.	4.5	58
138	Pilot Scale Demonstration of a 100-kWth Solar Thermochemical Plant for the Thermal Dissociation of ZnO. Journal of Solar Energy Engineering, Transactions of the ASME, 2014, 136, .	1.1	58
139	Hydrolysis rate of submicron Zn particles for solar H2 synthesis. International Journal of Hydrogen Energy, 2009, 34, 1166-1175.	3.8	57
140	Kinetics of Mn₂O₃â€“Mn₃O₄ and Mn₃O₄â€“MnO Redox Reactions Performed under Concentrated Thermal Radiative Flux. Energy & Fuels, 2013, 27, 4884-4890.	2.5	57
141	H2 production by steam-quenching of Zn vapor in a hot-wall aerosol flow reactor. Chemical Engineering Science, 2009, 64, 1095-1101.	1.9	55
142	Experimental Investigation of a Vortex-Flow Solar Chemical Reactor for the Combined ZnO-Reduction and CH4-Reforming*. Journal of Solar Energy Engineering, Transactions of the ASME, 2001, 123, 237-243.	1.1	54
143	Performance of compound parabolic concentrators with polygonal apertures. Solar Energy, 2013, 95, 308-318.	2.9	54
144	Co-synthesis of H2and ZnO by in-situ Zn aerosol formation and hydrolysis. AICHE Journal, 2006, 52, 3297-3303.	1.8	53

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145	Solar gasification of carbonaceous waste feedstocks in a packedâ€bed reactorâ€”Dynamic modeling and experimental validation. AICHE Journal, 2011, 57, 3522-3533.	1.8	53
146	The effect of the gasâ€“solid contacting pattern in a high-temperature thermochemical energy storage on the performance of a concentrated solar power plant. Energy and Environmental Science, 2016, 9, 1375-1389.	15.6	53
147	H2 production by Zn hydrolysis in a hot-wall aerosol reactor. AICHE Journal, 2005, 51, 1966-1970.	1.8	52
148	Vacuum Carbothermic Reduction of Al₂O₃, BeO, MgO-CaO, TiO₂, ZrO₂, HfO₂Â+ÂZrO₂, SiO₂, SiO₂Â+ÂFe₂O₃, and GeO₂to the Metals. A Thermodynamic Study. Mineral Processing and Extractive Metallurgy Review, 2011, 32, 247-266.	2.6	52
149	Design Principles for Metal Oxide Redox Materials for Solarâ€Driven Isothermal Fuel Production. Advanced Energy Materials, 2015, 5, 1401082.	10.2	52
150	Fuel saving, carbon dioxide emission avoidance, and syngas production by tri-reforming of flue gases from coal- and gas-fired power stations, and by the carbothermic reduction of iron oxide. Energy, 2006, 31, 3171-3185.	4.5	51
151	Dynamics and control of solar thermochemical reactors. Chemical Engineering Journal, 2009, 145, 362-370.	6.6	51
152	Life cycle assessment of the conventional and solar thermal production of zinc and synthesis gas. Energy, 2000, 25, 395-409.	4.5	50
153	Operational Performance of a 5-kW Solar Chemical Reactor for the Co-Production of Zinc and Syngas. Journal of Solar Energy Engineering, Transactions of the ASME, 2003, 125, 124-126.	1.1	49
154	Modeling of a novel high-temperature solar chemical reactor. Chemical Engineering Science, 1996, 51, 3181-3186.	1.9	48
155	Heterogeneous thermochemical decomposition under direct irradiation. International Journal of Heat and Mass Transfer, 2004, 47, 1907-1916.	2.5	48
156	Thermoneutral tri-reforming of flue gases from coal- and gas-fired power stations. Catalysis Today, 2006, 115, 170-178.	2.2	48
157	Band-approximated radiative heat transfer analysis of a solar chemical reactor for the thermal dissociation of zinc oxide. Solar Energy, 2007, 81, 1285-1294.	2.9	48
158	Heat and mass transfer analysis of a suspension of reacting particles subjected to concentrated solar radiation â€“ Application to the steam-gasification of carbonaceous materials. International Journal of Heat and Mass Transfer, 2009, 52, 385-395.	2.5	48
159	Solar Aluminum Production by Vacuum Carbothermal Reduction of Aluminaâ€”Thermodynamic and Experimental Analyses. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2011, 42, 254-260.	1.0	48
160	Carbon Dioxide Reforming of Methane using an Isothermal Redox Membrane Reactor. Energy Technology, 2015, 3, 784-789.	1.8	48
161	Constrained multi-objective optimization of thermocline packed-bed thermal-energy storage. Applied Energy, 2018, 216, 694-708.	5.1	48
162	Solar Fuels and Materials. , 2004, , 623-637.		47

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