Rakesh Agrawal

List of Publications by Year
in descending order

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184	9,223	50170	43802
papers	citations	46 h-index	91 g-index

186	186	186	6762
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Analysis of enargite thin films synthesized from carbon-containing and novel carbon-free processing methods. Materials Science in Semiconductor Processing, 2022, 143, 106512.	1.9	2
2	Enabling fine-grain free 2-micron thick CISe/CIGSe film fabrication via a non-hydrazine based solution processing route. Materials Advances, 2022, 3, 3293-3302.	2.6	8
3	Toward Carbon Neutrality for Natural Gas Liquids Valorization from Shale Gas. Industrial & Engineering Chemistry Research, 2022, 61, 4469-4474.	1.8	2
4	Solution Processed Fabrication of Seâ€“Te Alloy Thin Films for Application in PV Devices. ACS Applied Energy Materials, 2022, 5, 3275-3281.	2.5	10
5	Extrinsic Doping of Inâ€Based Cu(In,Ga)(S,Se)₂â€Absorbers for Photovoltaic Applications. Advanced Energy Materials, 2022, 12, .	10.2	13
6	Systematic Analysis Reveals Thermal Separations Are Not Necessarily Most Energy Intensive. Joule, 2021, 5, 330-343.	11.7	20
7	Atomic Scale Structure of (Ag,Cu)2ZnSnSe4 and Cu2Zn(Sn,Ge)Se4 Kesterite Thin Films. Frontiers in Energy Research, 2021, 9, .	1.2	4
8	Synthesis and Characterization of Solution Processed Silver Indium Diselenide Thin Films. , 2021, , .		0
9	Novel use of dividing wall columns for intensification multicomponent batch distillations. Chemical Engineering and Processing: Process Intensification, 2021, 164, 108400.	1.8	6
10	BEOL Compatible Indium-Tin-Oxide Transistors: Switching of Ultrahigh-Density 2-D Electron Gas Over 0.8 Ã— 10¹⁴/cm² at Oxide/Oxide Interface by the Change of Ferroelectric Polarization. IEEE Transactions on Electron Devices, 2021, 68, 3195-3199.	1.6	20
11	A Simple Criterion for Feasibility of Heat Integration between Distillation Streams Based on Relative Volatilities. Industrial & Engineering Chemistry Research, 2021, 60, 10286-10302.	1.8	6
12	Methods to assess numerous distillation schemes for binary mixtures. Chemical Engineering Research and Design, 2021, 172, 1-20.	2.7	10
13	Solution Phase Growth and Ion Exchange in Microassemblies of Lead Chalcogenide Nanoparticles. ACS Omega, 2021, 6, 21350-21358.	1.6	5
14	Fast Determination of the Lignin Monomer Compositions of Genetic Variants of Poplar via Fast Pyrolysis/Atmospheric Pressure Chemical Ionization Mass Spectrometry. Journal of the American Society for Mass Spectrometry, 2021, 32, 2546-2551.	1.2	4
15	Alternative ordering of process hierarchy for more efficient and cost-effective valorization of shale resources. Cell Reports Physical Science, 2021, 2, 100581.	2.8	3
16	Optimal design of membrane cascades for gaseous and liquid mixtures via MINLP. Journal of Membrane Science, 2021, 636, 119514.	4.1	6
17	Alternative Processing Sequence for Process Simplification, Cost Reduction, and Enhanced Light Olefin Recovery from Shale Gas. ACS Sustainable Chemistry and Engineering, 2021, 9, 13893-13901.	3.2	9
18	Direct Synthesis of Sulfide-Capped Nanoparticles for Carbon-Free Solution-Processed Photovoltaics. ACS Applied Nano Materials, 2021, 4, 11466-11472.	2.4	3

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19	Nanosecond carrier lifetimes in solution-processed enargite (Cu3AsS4) thin films. Applied Physics Letters, 2020, 117, 162102.	1.5	8
20	Indiumâ€“Tin-Oxide Transistors with One Nanometer Thick Channel and Ferroelectric Gating. ACS Nano, 2020, 14, 11542-11547.	7.3	75
21	Potassium Treatments for Solution-Processed Cu(In,Ga)(S,Se)₂ Solar Cells. ACS Applied Energy Materials, 2020, 3, 4821-4830.	2.5	19
22	Sustainable production of ammonia fertilizers from biomass. Biofuels, Bioproducts and Biorefining, 2020, 14, 725-733.	1.9	10
23	Hybrid Ligand Exchange of Cu(In,Ga)S₂ Nanoparticles for Carbon Impurity Removal in Solution-Processed Photovoltaics. Chemistry of Materials, 2020, 32, 5091-5103.	3.2	23
24	Misconceptions about efficiency and maturity of distillation. AICHE Journal, 2020, 66, e16294.	1.8	22
25	Classification and Comparison of Dividing Walls for Distillation Columns. Processes, 2020, 8, 699.	1.3	8
26	Synthesis and characterization of semiconducting sinnerite (Cu6As4S9) thin films. MRS Communications, 2020, 10, 188-193.	0.8	2
27	Analyzing and Tuning the Chalcogenâ€“Amineâ€“Thiol Complexes for Tailoring of Chalcogenide Syntheses. Inorganic Chemistry, 2020, 59, 8240-8250.	1.9	14
28	Sustainable Photovoltaics. Lecture Notes in Energy, 2020, , 25-85.	0.2	0
29	Investigating the Potential of Amine-Thiol Solvent System for High-Efficiency CuInSe2 Devices. , 2020, , .		1
30	Improving Solution Processed CIGSSe Devices Through Colloidal Nanoparticle Ligand Exchange. , 2020, , .		0
31	Investigating Chemistry of Metal Dissolution in Amineâ€“Thiol Mixtures and Exploiting It toward Benign Ink Formulation for Metal Chalcogenide Thin Films. Chemistry of Materials, 2019, 31, 5674-5682.	3.2	28
32	Global minimization of total exergy loss of multicomponent distillation configurations. AICHE Journal, 2019, 65, e16737.	1.8	9
33	Versatile Colloidal Syntheses of Metal Chalcogenide Nanoparticles from Elemental Precursors Using Amine-Thiol Chemistry. Chemistry of Materials, 2019, 31, 9087-9097.	3.2	34
34	Reaction pathways and optoelectronic characterization of single-phase Ag₂ZnSnS₄ nanoparticles. Journal of Materials Research, 2019, 34, 3810-3818.	1.2	8
35	110th Anniversary: Thermal Coupling via Heat Transfer: A Potential Route to Simple Distillation Configurations with Lower Heat Duty. Industrial & Engineering Chemistry Research, 2019, 58, 21671-21678.	1.8	9
36	Chemical engineering for a solar economy (2017 P. V. Danckwerts Lecture). Chemical Engineering Science, 2019, 210, 115215.	1.9	6

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37	Exploring the Reaction Mechanisms of Fast Pyrolysis of Xylan Model Compounds via Tandem Mass Spectrometry and Quantum Chemical Calculations. Journal of Physical Chemistry A, 2019, 123, 9149-9157.	1.1	12
38	A Cu₃PS₄ nanoparticle hole selective layer for efficient inverted perovskite solar cells. Journal of Materials Chemistry A, 2019, 7, 4604-4610.	5.2	29
39	Process intensification in multicomponent distillation: A review of recent advancements. Chemical Engineering Research and Design, 2019, 147, 122-145.	2.7	51
40	Liquid assisted grain growth in solution processed Cu(In,Ga)(S,Se)2. Solar Energy Materials and Solar Cells, 2019, 195, 12-23.	3.0	25
41	An MINLP formulation for the optimization of multicomponent distillation configurations. Computers and Chemical Engineering, 2019, 125, 13-30.	2.0	31
42	Global optimization of multicomponent distillation configurations: Global minimization of total cost for multicomponent mixture separations. Computers and Chemical Engineering, 2019, 126, 249-262.	2.0	26
43	Lead Chalcogenide Nanoparticles and Their Size-Controlled Self-Assemblies for Thermoelectric and Photovoltaic Applications. ACS Applied Nano Materials, 2019, 2, 1242-1252.	2.4	22
44	A Novel Approach to Amine-Thiol Molecular Precursors for Fabrication of High Efficiency Thin Film CISSe/CIGSSe Devices. , 2019, , .		0
45	Slot Die Coating of CIGS Nanoparticle Inks for Scalable Solution Processed Photovoltaics. , 2019, , .		1
46	Optoelectronic Characterization of Emerging Solar Absorber Cu₃AsS₄. , 2019, , .		3
47	Sustainable co-production of food and solar power to relax land-use constraints. Nature Sustainability, 2019, 2, 972-980.	11.5	45
48	Minimum energy of multicomponent distillation systems using minimum additional heat and mass integration sections. AICHE Journal, 2018, 64, 3410-3418.	1.8	14
49	Toward supplying food, energy, and water demand: Integrated solar desalination process synthesis with power and hydrogen coproduction. Resources, Conservation and Recycling, 2018, 133, 331-342.	5.3	34
50	A systematic method to synthesize all dividing wall columns for nâ€component separation: Part II. AICHE Journal, 2018, 64, 660-672.	1.8	23
51	A systematic method to synthesize all dividing wall columns for nâ€component separationâ€”Part I. AICHE Journal, 2018, 64, 649-659.	1.8	29
52	Pure phase synthesis of Cu3PS4 and Cu6PS5Cl for semiconductor applications. RSC Advances, 2018, 8, 34094-34101.	1.7	5
53	Modulation spectroscopy characterization of Cu based chalcopyrites and kesterites. , 2018, , .		0
54	Valorization of Shale Gas Condensate to Liquid Hydrocarbons through Catalytic Dehydrogenation and Oligomerization. Processes, 2018, 6, 139.	1.3	46

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55	Role of annealing atmosphere on the crystal structure and composition of tetrahedriteâ€“tennantite alloy nanoparticles. Journal of Materials Chemistry C, 2018, 6, 10538-10546.	2.7	6
56	Short-Cut Methods versus Rigorous Methods for Performance-Evaluation of Distillation Configurations. Industrial & Engineering Chemistry Research, 2018, 57, 7726-7731.	1.8	26
57	Optimal Multicomponent Distillation Column Sequencing: Software and Case Studies. Computer Aided Chemical Engineering, 2018, 44, 223-228.	0.3	3
58	Land Availability, Utilization, and Intensification for a Solar Powered Economy. Computer Aided Chemical Engineering, 2018, 44, 1915-1920.	0.3	0
59	Strategy to synthesize integrated solar energy coproduction processes with optimal process intensification. Case study: Efficient solar thermal hydrogen production. Computers and Chemical Engineering, 2017, 105, 328-347.	2.0	14
60	Synthesis of efficient solar thermal power cycles for baseload power supply. Energy Conversion and Management, 2017, 133, 486-497.	4.4	20
61	Synthesis and Characterization of Cu₃(Sb_{1â€“x}As_x)S₄ Semiconducting Nanocrystal Alloys with Tunable Properties for Optoelectronic Device Applications. Chemistry of Materials, 2017, 29, 573-578.	3.2	22
62	Identifying the Real Minority Carrier Lifetime in Nonideal Semiconductors: A Case Study of Kesterite Materials. Advanced Energy Materials, 2017, 7, 1700167.	10.2	106
63	Directing solar photons to sustainably meet food, energy, and water needs. Scientific Reports, 2017, 7, 3133.	1.6	25
64	Metastable defect response in CZTSSe from admittance spectroscopy. Applied Physics Letters, 2017, 111, 142105.	1.5	15
65	Improving efficiencies of Cu2ZnSnS4 nanoparticle based solar cells on flexible glass substrates. Thin Solid Films, 2017, 642, 110-116.	0.8	27
66	Initial Products and Reaction Mechanisms for Fast Pyrolysis of Synthetic Gâ€Lignin Oligomers with Î²â€Oâ€4 Linkages via Onâ€Line Mass Spectrometry and Quantum Chemical Calculations. ChemistrySelect, 2017, 2, 7185-7193.	0.7	12
67	Speciation of CuCl and CuCl₂ Thiol-Amine Solutions and Characterization of Resulting Films: Implications for Semiconductor Device Fabrication. Inorganic Chemistry, 2017, 56, 14396-14407.	1.9	30
68	Solution-processed copper arsenic sulfide thin films for photovoltaic applications. Journal of Materials Chemistry C, 2017, 5, 6913-6916.	2.7	14
69	Fabrication of Copper Arsenic Sulfide Thin Films from Nanoparticles for Application in Solar Cells. , 2017, , .		2
70	Thermal coupling links to liquidâ€only transfer streams: An enumeration method for new FTC dividing wall columns. AIChE Journal, 2016, 62, 1200-1211.	1.8	24
71	Generalized quantum efficiency analysis for non-ideal solar cells: Case of Cu2ZnSnSe4. Journal of Applied Physics, 2016, 119, .	1.1	78
72	Inkjet printed Cu(In,Ga)S2 nanoparticles for low-cost solar cells. Journal of Nanoparticle Research, 2016, 18, 1.	0.8	21

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73	The importance of band tail recombination on current collection and open-circuit voltage in CZTSSe solar cells. Applied Physics Letters, 2016, 109, 021102.	1.5	37
74	Solution-processed sulfur depleted Cu(In, Ga)Se₂ solar cells synthesized from a monoamineâ€“dithiol solvent mixture. Journal of Materials Chemistry A, 2016, 4, 7390-7397.	5.2	57
75	Controlled Grain Growth for High Performance Nanoparticle-Based Kesterite Solar Cells. Chemistry of Materials, 2016, 28, 7703-7714.	3.2	78
76	A direct solution deposition approach to CdTe thin films. Journal of Materials Chemistry C, 2016, 4, 9167-9171.	2.7	18
77	High-pressure vapor-phase hydrodeoxygenation of lignin-derived oxygenates to hydrocarbons by a PtMo bimetallic catalyst: Product selectivity, reaction pathway, and structural characterization. Journal of Catalysis, 2016, 344, 535-552.	3.1	58
78	Global optimization of multicomponent distillation configurations: 2. Enumeration based global minimization algorithm. AICHE Journal, 2016, 62, 2071-2086.	1.8	55
79	Solution-based synthesis and characterization of earth abundant Cu₃(As,Sb)Se₄ nanocrystal alloys: towards scalable room-temperature thermoelectric devices. Journal of Materials Chemistry A, 2016, 4, 2198-2204.	5.2	17
80	A commentary on the US policies for efficient large scale renewable energy storage systems: Focus on carbon storage cycles. Energy Policy, 2016, 88, 477-484.	4.2	28
81	Metalâ€“metal chalcogenide molecular precursors to binary, ternary, and quaternary metal chalcogenide thin films for electronic devices. Chemical Communications, 2016, 52, 5007-5010.	2.2	59
82	Optoelectronic and material properties of nanocrystal-based CZTSe absorbers with Ag-alloying. Solar Energy Materials and Solar Cells, 2016, 145, 342-348.	3.0	119
83	An in situ phosphorus source for the synthesis of Cu₃P and the subsequent conversion to Cu₃PS₄nanoparticle clusters. Journal of Materials Research, 2015, 30, 3710-3716.	1.2	10
84	Mass Spectrometric Studies of Fast Pyrolysis of Cellulose. European Journal of Mass Spectrometry, 2015, 21, 321-326.	0.5	10
85	Integrated Solar Thermal Hydrogen and Power Coproduction Process for Continuous Power Supply and Production of Chemicals. Computer Aided Chemical Engineering, 2015, 37, 2291-2296.	0.3	5
86	Round-the-clock power supply and a sustainable economy via synergistic integration of solar thermal power and hydrogen processes. Proceedings of the National Academy of Sciences of the United States of America, 2015, 112, 15821-15826.	3.3	14
87	A New Framework for Combining a Condenser and Reboiler in a Configuration To Consolidate Distillation Columns. Industrial & Engineering Chemistry Research, 2015, 54, 10449-10464.	1.8	8
88	Synthesis and characterization of 15% efficient CIGSSe solar cells from nanoparticle inks. Progress in Photovoltaics: Research and Applications, 2015, 23, 1550-1556.	4.4	105
89	Fast Pyrolysis of ¹³C-Labeled Cellobioses: Gaining Insights into the Mechanisms of Fast Pyrolysis of Carbohydrates. Journal of Organic Chemistry, 2015, 80, 1909-1914.	1.7	37
90	A Versatile Solution Route to Efficient Cu₂ZnSn(S,Se)₄ Thin-Film Solar Cells. Chemistry of Materials, 2015, 27, 2114-2120.	3.2	80

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91	The role of interparticle heterogeneities in the selenization pathway of Cuâ€“Znâ€“Snâ€“S nanoparticle thin films: a real-time study. Journal of Materials Chemistry C, 2015, 3, 7128-7134.	2.7	21
92	Synthesis and Characterization of Copper Arsenic Sulfide Nanocrystals from Earth Abundant Elements for Solar Energy Conversion. Chemistry of Materials, 2015, 27, 2290-2293.	3.2	21
93	Solution-based synthesis and purification of zinc tin phosphide nanowires. Nanoscale, 2015, 7, 19317-19323.	2.8	5
94	A synergistic biorefinery based on catalytic conversion of lignin prior to cellulose starting from lignocellulosic biomass. Green Chemistry, 2015, 17, 1492-1499.	4.6	370
95	Improved performance of Geâ€alloyed CZTGeSSe thinâ€film solar cells through control of elemental losses. Progress in Photovoltaics: Research and Applications, 2015, 23, 376-384.	4.4	186
96	9.0% efficient Cu₂ZnSn(S,Se)₄ solar cells from selenized nanoparticle inks. Progress in Photovoltaics: Research and Applications, 2015, 23, 654-659.	4.4	205
97	Oxygen removal from intact biomass to produce liquid fuel range hydrocarbons via fast-hydropyrolysis and vapor-phase catalytic hydrodeoxygenation. Green Chemistry, 2015, 17, 178-183.	4.6	83
98	Tailoring Biomass for Biochemical, Chemical or Thermochemical Catalytic Conversion. FASEB Journal, 2015, 29, 485.3.	0.2	0
99	Synergistic Biomass and Natural Gas Conversion to Liquid Fuel with Reduced CO2 Emissions. Computer Aided Chemical Engineering, 2014, , 525-530.	0.3	5
100	Generalized current-voltage analysis and efficiency limitations in non-ideal solar cells: Case of Cu2ZnSn(SxSe1â^'x)4 and Cu2Zn(SnyGe1â^'y)(SxSe1â^'x)4. Journal of Applied Physics, 2014, 115, .	1.1	65
101	Thermal coupling links to liquidâ€only transfer streams: A path for new dividing wall columns. AIChE Journal, 2014, 60, 2949-2961.	1.8	51
102	Synthesis of augmented biofuel processes using solar energy. AIChE Journal, 2014, 60, 2533-2545.	1.8	12
103	Compositional Inhomogeneity of Multinary Semiconductor Nanoparticles: A Case Study of Cu₂ZnSnS₄. Chemistry of Materials, 2014, 26, 6955-6962.	3.2	26
104	Characterization of nanocrystal-ink based CZTSSe and CIGSSe solar cells using voltage-dependent admittance spectroscopy. , 2014, , .		4
105	Continuous power supply from a baseload renewable power plant. Applied Energy, 2014, 122, 83-93.	5.1	41
106	Modified basic distillation configurations with intermediate sections for energy savings. AIChE Journal, 2014, 60, 1091-1097.	1.8	5
107	Cu2ZnSn(S,Se)4 solar cells from inks of heterogeneous Cuâ€“Znâ€“Snâ€“S nanocrystals. Solar Energy Materials and Solar Cells, 2014, 123, 189-196.	3.0	34
108	Kesterite Cu₂ZnSn(S,Se)₄ Absorbers Converted from Metastable, Wurtzite-Derived Cu₂ZnSnS₄ Nanoparticles. Chemistry of Materials, 2014, 26, 3530-3534.	3.2	53

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109	High-pressure fast-pyrolysis, fast-hydropyrolysis and catalytic hydrodeoxygenation of cellulose: production of liquid fuel from biomass. Green Chemistry, 2014, 16, 792.	4.6	96
110	From shale gas to renewable energy based transportation solutions. Energy Policy, 2014, 67, 499-507.	4.2	12
111	Continuous baseload renewable power using chemical refrigeration cycles. Computers and Chemical Engineering, 2014, 71, 591-601.	2.0	1
112	Synthesis of (CuInS2)0.5(ZnS)0.5 Alloy Nanocrystals and Their Use for the Fabrication of Solar Cells via Selenization. Chemistry of Materials, 2014, 26, 4060-4063.	3.2	17
113	Conceptual Design of Zeotropic Distillation Processes. , 2014, , 271-303.		6
114	Limiting and achievable efficiencies for solar thermal hydrogen production. International Journal of Hydrogen Energy, 2014, 39, 62-75.	3.8	16
115	Uninterrupted renewable power through chemical storage cycles. Current Opinion in Chemical Engineering, 2014, 5, 29-36.	3.8	16
116	Global optimization of multicomponent distillation configurations: 1. Need for a reliable global optimization algorithm. AICHE Journal, 2013, 59, 971-981.	1.8	25
117	Ink formulation and lowâ€temperature incorporation of sodium to yield 12% efficient Cu(In,Ga)(S,Se)₂ solar cells from sulfide nanocrystal inks. Progress in Photovoltaics: Research and Applications, 2013, 21, 64-71.	4.4	206
118	Sun-to-Fuel Assessment of Routes for Fixing CO₂ as Liquid Fuel. Industrial & Engineering Chemistry Research, 2013, 52, 5136-5144.	1.8	50
119	Real-time observation of Cu2ZnSn(S,Se)4 solar cell absorber layer formation from nanoparticle precursors. Physical Chemistry Chemical Physics, 2013, 15, 18281.	1.3	86
120	High efficiency Cu<inf>2</inf>ZnSnS<inf>4</inf> nanocrystal ink solar cells through improved nanoparticle synthesis and selenization. , 2013, , .		2
121	New multicomponent distillation configurations with simultaneous heat and mass integration. AICHE Journal, 2013, 59, 272-282.	1.8	23
122	Universal statistics of parasitic shunt formation in solar cells, and its implications for cell to module efficiency gap. Energy and Environmental Science, 2013, 6, 782.	15.6	32
123	On-Line Mass Spectrometric Methods for the Determination of the Primary Products of Fast Pyrolysis of Carbohydrates and for Their Gas-Phase Manipulation. Analytical Chemistry, 2013, 85, 10927-10934.	3.2	41
124	GWh Level Renewable Energy Storage and Supply using Liquid CO2. Computer Aided Chemical Engineering, 2013, 32, 415-420.	0.3	2
125	Analysis of temperature-dependent current-voltage characteristics for CIGSSe and CZTSSe thin film solar cells from nanocrystal inks. , 2013, , .		6
126	Device comparison of champion nanocrystal-ink based CZTSSe and CIGSSe solar cells: Capacitance spectroscopy. , 2013, , .		8

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127	Grain growth enhancement of selenide CIGSe nanoparticles to densified films using copper selenides. , 2012, , .		5
128	Reverse stress metastability of shunt current in CIGS solar cells. , 2012, , .		4
129	Influence of Ge doping on defect distributions of Cu<inf>2</inf>Zn(Sn<inf>x</inf> Ge<inf>1−x</inf>) (S<inf>y</inf> Se<inf>1−y</inf>) fabricated by nanocrystal ink deposition with selenization. , 2012, , .		1
130	Device limitations and light-soaking effects in CZTSSe and CZTGeSSe. , 2012, , .		6
131	Enhancing the performance of CZTSSe solar cells with Ge alloying. Solar Energy Materials and Solar Cells, 2012, 105, 132-136.	3.0	188
132	A synthesis method for multicomponent distillation sequences with fewer columns. AICHE Journal, 2012, 58, 2479-2494.	1.8	36
133	Economic analysis of novel synergistic biofuel (H2Bioil) processes. Biomass Conversion and Biorefinery, 2012, 2, 141-148.	2.9	21
134	Chemical liquid deposition of CuInSe2 and CuIn(S,Se)2 films for solar cells. Thin Solid Films, 2012, 520, 5431-5437.	0.8	9
135	Energy Efficiency Limitations of the Conventional Heat Integrated Distillation Column (HIDiC) Configuration for Binary Distillation. Industrial & Engineering Chemistry Research, 2011, 50, 119-130.	1.8	70
136	Are All Thermal Coupling Links between Multicomponent Distillation Columns Useful from an Energy Perspective?. Industrial & Engineering Chemistry Research, 2011, 50, 1770-1777.	1.8	25
137	A generalized and robust method for efficient thin film photovoltaic devices from multinary sulfide nanocrystal inks. , 2011, , .		7
138	Earth Abundant Element Cu₂Zn(Sn_{1â˜'x}Ge_x)S₄ Nanocrystals for Tunable Band Gap Solar Cells: 6.8% Efficient Device Fabrication. Chemistry of Materials, 2011, 23, 2626-2629.	3.2	316
139	Formation Pathway of CuInSe₂ Nanocrystals for Solar Cells. Journal of the American Chemical Society, 2011, 133, 17239-17247.	6.6	94
140	Energy Systems Analysis for a Renewable Transportation Sector. Computer Aided Chemical Engineering, 2011, , 1889-1893.	0.3	0
141	CuIn(S,Se)2thin film solar cells from nanocrystal inks: Effect of nanocrystal precursors. Thin Solid Films, 2011, 520, 523-528.	0.8	25
142	A matrix method for multicomponent distillation sequences. AICHE Journal, 2010, 56, 1759-1775.	1.8	92
143	Chemical engineering in a solar energyâ€driven sustainable future. AICHE Journal, 2010, 56, 2762-2768.	1.8	17
144	Design of membrane cascades for gas separation. Journal of Membrane Science, 2010, 364, 263-277.	4.1	33

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145	Synthesis of distillation configurations: I. Characteristics of a good search space. Computers and Chemical Engineering, 2010, 34, 73-83.	2.0	80
146	Synthesis of distillation configurations. II: A search formulation for basic configurations. Computers and Chemical Engineering, 2010, 34, 84-95.	2.0	63
147	Solar cells via selenization of CuInS<inf>2</inf> nanocrystals: Effect of synthesis precursor. , 2010, , .		0
148	Solar Energy to Biofuels. Annual Review of Chemical and Biomolecular Engineering, 2010, 1, 343-364.	3.3	49
149	Fabrication of 7.2% Efficient CZTSSe Solar Cells Using CZTS Nanocrystals. Journal of the American Chemical Society, 2010, 132, 17384-17386.	6.6	903
150	Estimation of Liquid Fuel Yields from Biomass. Environmental Science & Technology, 2010, 44, 5298-5305.	4.6	77
151	Selenization of copper indium gallium disulfide nanocrystal films for thin film solar cells. , 2009, , .		5
152	Synergistic routes to liquid fuel for a petroleumâ€deprived future. AICHE Journal, 2009, 55, 1898-1905.	1.8	61
153	Synergy in the hybrid thermochemicalâ€“biological processes for liquid fuel production. Computers and Chemical Engineering, 2009, 33, 2012-2017.	2.0	15
154	Sulfide Nanocrystal Inks for Dense Cu(In_{1â^'x}Ga_x)(S_{1â^'y}Se_y)₂ Absorber Films and Their Photovoltaic Performance. Nano Letters, 2009, 9, 3060-3065.	4.5	378
155	Synthesis of Cu₂ZnSnS₄ Nanocrystal Ink and Its Use for Solar Cells. Journal of the American Chemical Society, 2009, 131, 11672-11673.	6.6	723
156	Development of CuInSe₂ Nanocrystal and Nanoring Inks for Low-Cost Solar Cells. Nano Letters, 2008, 8, 2982-2987.	4.5	545
157	Sustainable fuel for the transportation sector. Proceedings of the National Academy of Sciences of the United States of America, 2007, 104, 4828-4833.	3.3	200
158	Hydrogen economy - an opportunity for chemical engineers?. AICHE Journal, 2005, 51, 1582-1589.	1.8	45
159	Synthesis of multicomponent distillation column configurations. AICHE Journal, 2003, 49, 379-401.	1.8	106
160	Multicomponent Distillation Columns with Partitions and Multiple Reboilers and Condensers. Industrial & Engineering Chemistry Research, 2001, 40, 4258-4266.	1.8	48
161	Separations: Perspective of a process developer/designer. AICHE Journal, 2001, 47, 967-971.	1.8	24
162	Multicomponent thermally coupled systems of distillation columns at minimum reflux. AICHE Journal, 2001, 47, 2713-2724.	1.8	50

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163	Thermally coupled distillation with reduced number of intercolumn vapor transfers. AICHE Journal, 2000, 46, 2198-2210.	1.8	91
164	Multieffect distillation for thermally coupled configurations. AICHE Journal, 2000, 46, 2211-2224.	1.8	39
165	New thermally coupled schemes for ternary distillation. AICHE Journal, 1999, 45, 485-496.	1.8	85
166	Thermodynamically Efficient Systems for Ternary Distillation. Industrial & Engineering Chemistry Research, 1999, 38, 2065-2074.	1.8	22
167	Improved direct and indirect systems of columns for ternary distillation. AICHE Journal, 1998, 44, 823-830.	1.8	16
168	Efficient use of an intermediate reboiler or condenser in a binary distillation. AICHE Journal, 1998, 44, 1303-1315.	1.8	34
169	Intermediate reboiler and condenser arrangement for binary distillation columns. AICHE Journal, 1998, 44, 1316-1324.	1.8	32
170	More operable arrangements of fully thermally coupled distillation columns. AICHE Journal, 1998, 44, 2565-2568.	1.8	106
171	Are Thermally Coupled Distillation Columns Always Thermodynamically More Efficient for Ternary Distillations?. Industrial & Engineering Chemistry Research, 1998, 37, 3444-3454.	1.8	132
172	Optimal thermodynamic feed conditions for distillation of ideal binary mixtures. AICHE Journal, 1997, 43, 2984-2996.	1.8	47
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