Rajnish Kumar

List of Publications by Year
in descending order

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111 papers	7,850 citations	53660 45 h-index	49773 87 g-index
113 all docs	113 docs citations	113 times ranked	2781 citing authors

#	Article	IF	Citations
1	A review of clathrate hydrate nucleation, growth and decomposition studied using molecular dynamics simulation. Journal of Molecular Liquids, 2022, 348, 118025.	2.3	17
2	Solidified Hydrogen Storage (Solid-HyStore) via Clathrate Hydrates. Chemical Engineering Journal, 2022, 431, 133702.	6.6	21
3	Effect of sodium tripolyphosphate (STPP) and tetrasodium pyrophosphate (TSPP) on the formation kinetics of CO2 hydrate in bulk and porous media in the presence of pure water and seawater relevant for CO2 sequestration. International Journal of Greenhouse Gas Control, 2022, 114, 103564.	2.3	10
4	Effect of Methylamine, Amylamine, and Decylamine on the Formation and Dissociation Kinetics of CO₂ Hydrate Relevant for Carbon Dioxide Sequestration. Industrial & Engineering Chemistry Research, 2022, 61, 2672-2684.	1.8	17
5	Hydrate-Based Desalination Technology: A Sustainable Approach. Clean Energy Production Technologies, 2022, , 193-205.	0.3	0
6	Natural Gas Hydrates: Energy Locked in Cages. Clean Energy Production Technologies, 2022, , 155-171.	0.3	1
7	Gas Hydrate-Based Process for Desalination of Heavy Metal Ions from an Aqueous Solution: Kinetics and Rate of Recovery. ACS ES&T Water, 2021, 1, 134-144.	2.3	49
8	Kinetic and Morphology Study of Equimolar CO₂â€“CH₄ Hydrate Formation in the Presence of Cyclooctane and <scp>l</scp>-Tryptophan. Energy & Fuels, 2021, 35, 636-648.	2.5	15
9	Rhamonolipids produced by Pseudomonas aeruginosa promotes methane hydrates formation in fixed bed silica gel medium. Marine Geophysical Researches, 2021, 42, 1.	0.5	9
10	Combination of Silica Gel and Surfactin Promoting Methane Hydrate Formation. Journal of Energy Resources Technology, Transactions of the ASME, 2021, 143, .	1.4	2
11	Kinetics of Methane Hydrate Formation in the Presence of 1-Dodecyl-2-pyrrolidinone and Tetrahydrofuran in Pure Water. Industrial & Engineering Chemistry Research, 2021, 60, 7588-7598.	1.8	14
12	In Situ Characterization of Mixed CH₄â€“THF Hydrates Formed from Seawater: High-Pressure Calorimetric and Spectroscopic Analysis. Journal of Physical Chemistry C, 2021, 125, 16435-16443.	1.5	10
13	A Comprehensive Review on Well Completion Operations and Artificial Lift Techniques for Methane Gas Production from Natural Gas Hydrate Reservoirs. Energy & Fuels, 2021, 35, 11740-11760.	2.5	20
14	CO₂â€“CH₄ Hydrate Formation Using <scp>l</scp>-Tryptophan and Cyclooctane Employing a Conventional Stirred Tank Reactor. Energy & Fuels, 2021, 35, 13224-13239.	2.5	11
15	A systematic molecular investigation on Sodium Dodecyl Benzene Sulphonate (SDBS) as a Low Dosage Hydrate Inhibitor (LDHI) and the role of Benzene Ring in the structure. Journal of Molecular Liquids, 2021, 337, 116374.	2.3	19
16	Hydrogen Economy and Role of Hythane as a Bridging Solution: A Perspective Review. Energy & Fuels, 2021, 35, 15424-15454.	2.5	33
17	Hydrothermal liquefaction of municipal solid wastes for high quality bio-crude production using glycerol as co-solvent. Bioresource Technology, 2021, 339, 125537.	4.8	39
18	Separation of coal mine methane gas mixture via sII and sH hydrate formation. Fuel, 2021, 305, 121467.	3.4	23

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19	High-Pressure Rheology of Methane Hydrate Sediment Slurry Using a Modified Couette Geometry. Industrial & Engineering Chemistry Research, 2020, 59, 4079-4092.	1.8	12
20	Morphology and dynamics of self-assembled structures in mixed surfactant systems (SDSÂ+ÂCAPB) in the context of methane hydrate growth. Journal of Molecular Liquids, 2020, 319, 114296.	2.3	10
21	Comprehensive Review on Exploration and Drilling Techniques for Natural Gas Hydrate Reservoirs. Energy & Fuels, 2020, 34, 11813-11839.	2.5	76
22	Seawater based mixed methane-THF hydrate formation at ambient temperature conditions. Applied Energy, 2020, 271, 115158.	5.1	29
23	In Operando Generation and Storage of Hydrogen by Coupling Monolithically Integrated Photoelectrochemical Cell with Clathrate Hydrates Molecular Storage. ACS Applied Energy Materials, 2020, 3, 6834-6844.	2.5	7
24	Effect of Cyclooctane and <scp>l</scp>-Tryptophan on Hydrate Formation from an Equimolar CO₂â€“CH₄ Gas Mixture Employing a Horizontal-Tray Packed Bed Reactor. Energy & Fuels, 2020, 34, 9840-9851.	2.5	23
25	Rapid methane storage via sII hydrates at ambient temperature. Applied Energy, 2020, 269, 115142.	5.1	49
26	Macro and Molecular Level Insights on Gas Hydrate Growth in the Presence of Hofmeister Salts. Industrial & Engineering Chemistry Research, 2020, 59, 20591-20600.	1.8	16
27	A comparison of different water models for melting point calculation of methane hydrate using molecular dynamics simulations. Chemical Physics, 2019, 516, 6-14.	0.9	25
28	Reply to Choukroun et al.: IR and TPD data suggest the formation of clathrate hydrates in laboratory experiments simulating ISM. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 14409-14410.	3.3	5
29	Methane recovery from marine gas hydrates: A bench scale study in presence of low dosage benign additives. Applied Energy, 2019, 253, 113566.	5.1	26
30	Investigation of the kinetics of mixed methane hydrate formation kinetics in saline and seawater. Applied Energy, 2019, 253, 113515.	5.1	23
31	Carbon Dioxide Capture from Flue Gas Using Tri-Sodium Phosphate as an Effective Sorbent. Energies, 2019, 12, 2889.	1.6	6
32	Kinetic promotion of mixed methane-THF hydrate by additives: Opportune to energy storage. Energy Procedia, 2019, 158, 5287-5292.	1.8	12
33	Methane hydrate dissociation in the presence of novel benign additives. Energy Procedia, 2019, 158, 5856-5865.	1.8	0
34	Investigation on the effect of oxalic acid, succinic acid and aspartic acid on the gas hydrate formation kinetics. Chinese Journal of Chemical Engineering, 2019, 27, 2148-2156.	1.7	14
35	Sodium Dodecyl Sulfate Preferentially Promotes Enclathration of Methane in Mixed Methane-Tetrahydrofuran Hydrates. IScience, 2019, 14, 136-146.	1.9	23
36	Molecular dynamics study on growth of carbon dioxide and methane hydrate from a seed crystal. Chinese Journal of Chemical Engineering, 2019, 27, 2074-2080.	1.7	20

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37	Performance enhancement of hydrothermal liquefaction for strategic and sustainable valorization of de-oiled yeast biomass into green bio-crude. Journal of Cleaner Production, 2019, 227, 292-301.	4.6	38
38	Direct use of seawater for rapid methane storage via clathrate (sII) hydrates. Applied Energy, 2019, 235, 21-30.	5.1	48
39	Clathrate hydrates in interstellar environment. Proceedings of the National Academy of Sciences of the United States of America, 2019, 116, 1526-1531.	3.3	44
40	Molecular level investigations and stability analysis of mixed methane-tetrahydrofuran hydrates: Implications to energy storage. Fuel, 2019, 236, 1505-1511.	3.4	50
41	Molecular Insights About Gas Hydrate Formation. Springer Proceedings in Physics, 2019, , 311-322.	0.1	7
42	Molecular View of CO2 Capture by Polyethylenimine: Role of Structural and Dynamical Heterogeneity. Langmuir, 2018, 34, 5138-5148.	1.6	18
43	Hydrate phase equilibrium data of mixed methane-tetrahydrofuran hydrates in saline water. Journal of Chemical Thermodynamics, 2018, 117, 2-8.	1.0	50
44	Kinetic promotion of methane hydrate formation by combining anionic and silicone surfactants: Scalability promise of methane storage due to prevention of foam formation. Journal of Chemical Thermodynamics, 2018, 117, 248-255.	1.0	52
45	Alleviation of Foam Formation in a Surfactant Driven Gas Hydrate System: Insights via a Detailed Morphological Study. ACS Applied Energy Materials, 2018, 1, 6899-6911.	2.5	64
46	Formation and Dissociation Kinetics in Simulated Hydrate Bearing Reservoir. Current Environmental Engineering, 2018, 5, 78-85.	0.6	2
47	Energy recovery from simulated clayey gas hydrate reservoir using depressurization by constant rate gas release, thermal stimulation and their combinations. Applied Energy, 2018, 225, 755-768.	5.1	117
48	Effect of Sodium Dodecyl Sulfate Surfactant on Methane Hydrate Formation: A Molecular Dynamics Study. Journal of Physical Chemistry B, 2018, 122, 6536-6542.	1.2	47
49	Gas Hydrates. Encyclopedia of Earth Sciences Series, 2018, , 535-541.	0.1	3
50	Effects of Micellization on Growth Kinetics of Methane Hydrate. Industrial & Engineering Chemistry Research, 2017, 56, 3687-3698.	1.8	36
51	Molecular Dynamics Simulation and Experimental Study on the Growth of Methane Hydrate in Presence of Methanol and Sodium Chloride. Energy Procedia, 2017, 105, 5026-5033.	1.8	16
52	An innovative approach to enhance methane hydrate formation kinetics with leucine for energy storage application. Applied Energy, 2017, 188, 190-199.	5.1	180
53	The Biosurfactant Surfactin as a Kinetic Promoter for Methane Hydrate Formation. Energy Procedia, 2017, 105, 5011-5017.	1.8	18
54	Effect of shape of protrusions and roughness on the hydrophilicity of a surface. Chemical Physics Letters, 2017, 685, 34-39.	1.2	10

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55	Experimental Investigation To Elucidate Why Tetrahydrofuran Rapidly Promotes Methane Hydrate Formation Kinetics: Applicable to Energy Storage. Journal of Physical Chemistry C, 2016, 120, 29062-29068.	1.5	57
56	Effect of the amino acid l-histidine on methane hydrate growth kinetics. Journal of Natural Gas Science and Engineering, 2016, 35, 1453-1462.	2.1	114
57	Crystallization kinetics for carbon dioxide gas hydrate in fixed bed and stirred tank reactor. Korean Journal of Chemical Engineering, 2016, 33, 1922-1930.	1.2	15
58	Effect of polyvinylpyrrolidone at methane hydrate-liquid water interface. Application in flow assurance and natural gas hydrate exploitation. Fuel, 2016, 186, 613-622.	3.4	35
59	Effect of additives on formation and decomposition kinetics of methane clathrate hydrates: Application in energy storage and transportation. Canadian Journal of Chemical Engineering, 2016, 94, 2160-2167.	0.9	30
60	Biosurfactant as a Promoter of Methane Hydrate Formation: Thermodynamic and Kinetic Studies. Scientific Reports, 2016, 6, 20893.	1.6	64
61	Enhanced clathrate hydrate formation kinetics at near ambient temperatures and moderate pressures: Application to natural gas storage. Fuel, 2016, 182, 907-919.	3.4	173
62	Role of Rhamnolipid: A Biosurfactant in Methane Gas Hydrate Formation Kinetics. Springer Proceedings in Energy, 2016, , 333-343.	0.2	1
63	Impact of H₂S Impurity on Carbon Dioxide Hydrate Formation Kinetics in Fixed Bed Arrangements. Industrial & Engineering Chemistry Research, 2016, 55, 7964-7972.	1.8	15
64	Rapid methane hydrate formation to develop a cost effective large scale energy storage system. Chemical Engineering Journal, 2016, 290, 161-173.	6.6	261
65	Influence of Lowâ€Đosage Hydrate Inhibitors on Methane Clathrate Hydrate Formation and Dissociation Kinetics. Energy Technology, 2015, 3, 717-725.	1.8	50
66	A molecular dynamics study of model SI clathrate hydrates: the effect of guest size and guestâ€“water interaction on decomposition kinetics. Physical Chemistry Chemical Physics, 2015, 17, 9509-9518.	1.3	28
67	Carbon Dioxide Sequestration: Influence of Porous Media on Hydrate Formation Kinetics. ACS Sustainable Chemistry and Engineering, 2015, 3, 1205-1214.	3.2	130
68	Role of Surfactants in Promoting Gas Hydrate Formation. Industrial & Engineering Chemistry Research, 2015, 54, 12217-12232.	1.8	326
69	Methane hydrate formation in a test sediment of sand and clay at various levels of water saturation. Canadian Journal of Chemistry, 2015, 93, 874-881.	0.6	91
70	Role of Metallic Packing and Kinetic Promoter in Designing a Hydrate-Based Gas Separation Process. Energy & Fuels, 2015, 29, 4463-4471.	2.5	41
71	A review of the hydrate based gas separation (HBGS) process forÂcarbon dioxide pre-combustion capture. Energy, 2015, 85, 261-279.	4.5	481
72	Enhanced carbon dioxide hydrate formation kinetics in a fixed bed reactor filled with metallic packing. Chemical Engineering Science, 2015, 122, 78-85.	1.9	80

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73	Impact of experimental pressure and temperature on semiclathrate hydrate formation for pre-combustion capture of CO2 using tetra-n-butyl ammonium nitrate. Energy, 2014, 78, 458-464.	4.5	29
74	The Impact of Pressure and Temperature on Tetra-n-butyl Ammonium Bromide Semi-clathrate Process for Carbon Dioxide Capture. Energy Procedia, 2014, 61, 1780-1783.	1.8	8
75	Enhanced kinetics for the clathrate process in a fixed bed reactor in the presence of liquid promoters for pre-combustion carbon dioxide capture. Energy, 2014, 70, 664-673.	4.5	61
76	Hydrogen storage in clathrate hydrates: Current state of the art and future directions. Applied Energy, 2014, 122, 112-132.	5.1	337
77	Unusual behavior of propane as a co-guest during hydrate formation in silica sand: Potential application to seawater desalination and carbon dioxide capture. Chemical Engineering Science, 2014, 117, 342-351.	1.9	131
78	Impact of Fly Ash Impurity on the Hydrate-Based Gas Separation Process for Carbon Dioxide Capture from a Flue Gas Mixture. Industrial & Engineering Chemistry Research, 2014, 53, 9849-9859.	1.8	40
79	Thermodynamic and Kinetic Verification of Tetra-n-butyl Ammonium Nitrate (TBANO₃) as a Promoter for the Clathrate Process Applicable to Precombustion Carbon Dioxide Capture. Environmental Science & Technology, 2014, 48, 3550-3558.	4.6	67
80	Systematic Evaluation of Tetra-n-butyl Ammonium Bromide (TBAB) for Carbon Dioxide Capture Employing the Clathrate Process. Industrial & Engineering Chemistry Research, 2014, 53, 4878-4887.	1.8	104
81	Effects of Biosurfactants on Gas Hydrates. Journal of Petroleum & Environmental Biotechnology, 2014, 5, .	0.3	13
82	HBGS (hydrate based gas separation) process for carbon dioxide capture employing an unstirred reactor with cyclopentane. Energy, 2013, 63, 252-259.	4.5	125
83	A New Porous Material to Enhance the Kinetics of Clathrate Process: Application to Precombustion Carbon Dioxide Capture. Environmental Science & Technology, 2013, 47, 13191-13198.	4.6	91
84	Hydrate phase equilibrium of ternary gas mixtures containing carbon dioxide, hydrogen and propane. Journal of Chemical Thermodynamics, 2013, 61, 58-63.	1.0	67
85	Lowâ€Pressure Synthesis and Characterization of Hydrogenâ€Filled Iceâ€…Ic. Angewandte Chemie - International Edition, 2013, 52, 1531-1534.	7.2	16
86	Medium pressure hydrate based gas separation (HBGS) process for pre-combustion capture of carbon dioxide employing a novel fixed bed reactor. International Journal of Greenhouse Gas Control, 2013, 17, 206-214.	2.3	107
87	Morphology of Carbon Dioxideâ€“Hydrogenâ€“Cyclopentane Hydrates with or without Sodium Dodecyl Sulfate. Crystal Growth and Design, 2013, 13, 2047-2059.	1.4	86
88	Pre-combustion capture of carbon dioxide in a fixed bed reactor using the clathrate hydrate process. Energy, 2013, 50, 364-373.	4.5	222
89	Heat Transfer Calculations for Decomposition of Structure I Methane Hydrates by Molecular Dynamics Simulation. Journal of Physical Chemistry C, 2013, 117, 12172-12182.	1.5	36
90	Influence of contact medium and surfactants on carbon dioxide clathrate hydrate kinetics. Fuel, 2013, 105, 664-671.	3.4	214

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91	Ammonia clathrate hydrates as new solid phases for Titan, Enceladus, and other planetary systems. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 14785-14790.	3.3	99
92	Multiple H₂ Occupancy of Cages of Clathrate Hydrate under Mild Conditions. Journal of the American Chemical Society, 2012, 134, 9160-9162.	6.6	75
93	A new apparatus to enhance the rate of gas hydrate formation: Application to capture of carbon dioxide. International Journal of Greenhouse Gas Control, 2010, 4, 630-637.	2.3	255
94	Capture of carbon dioxide from flue or fuel gas mixtures by clathrate crystallization in a silica gel column. International Journal of Greenhouse Gas Control, 2010, 4, 478-485.	2.3	162
95	Structure and composition of CO₂/H₂ and CO₂/H₂/C₃H₈ hydrate in relation to simultaneous CO₂ capture and H₂ production. AIChE Journal, 2009, 55, 1584-1594.	1.8	131
96	Tuning the Composition of Guest Molecules in Clathrate Hydrates: NMR Identification and Its Significance to Gas Storage. Chemistry - an Asian Journal, 2009, 4, 1266-1274.	1.7	65
97	Application of the ATR-IR Spectroscopic Technique to the Characterization of Hydrates Formed by CO₂, CO₂/H₂ and CO₂/H₂/C₃H₈. Journal of Physical Chemistry A, 2009, 113, 6308-6313.	1.1	68
98	Two-Stage Clathrate Hydrate/Membrane Process for Precombustion Capture of Carbon Dioxide and Hydrogen. Journal of Environmental Engineering, ASCE, 2009, 135, 411-417.	0.7	92
99	Structure and kinetics of gas hydrates from methane/ethane/propane mixtures relevant to the design of natural gas hydrate storage and transport facilities. AIChE Journal, 2008, 54, 2132-2144.	1.8	151
100	Kinetic inhibitor effects on methane/propane clathrate hydrate-crystal growth at the gas/water and water/n-heptane interfaces. Journal of Crystal Growth, 2008, 310, 1154-1166.	0.7	68
101	Gas hydrate formation from hydrogen/carbon dioxide and nitrogen/carbon dioxide gas mixtures. Chemical Engineering Science, 2007, 62, 4268-4276.	1.9	329
102	The clathrate hydrate process for post and pre-combustion capture of carbon dioxide. Journal of Hazardous Materials, 2007, 149, 625-629.	6.5	467
103	Pre and Post Combustion Capture of Carbon Dioxide via Hydrate Formation. , 2006, , .		4
104	Incipient hydrate phase equilibrium for gas mixtures containing hydrogen, carbon dioxide and propane. Fluid Phase Equilibria, 2006, 244, 167-171.	1.4	117
105	Effect of the chain length of the acid on the enzymatic synthesis of flavors in supercritical carbon dioxide. Biochemical Engineering Journal, 2005, 23, 199-202.	1.8	43
106	Synthesis of biodiesel in supercritical fluids. Fuel, 2004, 83, 2029-2033.	3.4	334
107	Enzymatic Synthesis of Ethyl Palmitate in Supercritical Carbon Dioxide. Industrial & Engineering Chemistry Research, 2004, 43, 1568-1573.	1.8	70
108	Synthesis of Octyl Palmitate in Various Supercritical Fluids. Industrial & Engineering Chemistry Research, 2004, 43, 7697-7701.	1.8	24

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109	Dissolution of sulphur particles byThiobacillus ferrooxidans: Substrate for unattached cells. Biotechnology and Bioengineering, 1993, 41, 612-616.	1.7	35
110	Modeling Growth Kinetics of Methane Hydrate in Stirred Tank Batch Reactors. ACS Engineering Au, 0, , .	2.3	10
111	Rapid Methane Storage in Seawater Via Clathrate Hydrates. SSRN Electronic Journal, 0, , .	0.4	0