

Rajamani Gounder

List of Publications by Year in descending order

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84
papers

6,647
citations

76326
40
h-index

62596
80
g-index

90
all docs

90
docs citations

90
times ranked

3893
citing authors

#	ARTICLE	IF	CITATIONS
1	Effect of Nickel Active Site Density on the Deactivation of Ni-Beta Zeolite Catalysts during Ethene Dimerization. ACS Engineering Au, 2022, 2, 12-16.	5.1	8
2	Effects of Ethene Pressure on the Deactivation of Ni α -Zeolites During Ethene Oligomerization at Sub α -Ambient Temperatures. ChemCatChem, 2022, 14, .	3.7	6
3	Investigation of the modes of NO adsorption in Pd/H-CHA. Applied Catalysis B: Environmental, 2022, 304, 120992.	20.2	18
4	Kinetic Modeling of Ethene Oligomerization on Bifunctional Nickel and Acid β Zeolites. Industrial & Engineering Chemistry Research, 2022, 61, 3860-3876.	3.7	5
5	Quantifying Effects of Active Site Proximity on Rates of Methanol Dehydration to Dimethyl Ether over Chabazite Zeolites through Microkinetic Modeling. ACS Materials Au, 2022, 2, 163-175.	6.0	7
6	Kinetic and Thermodynamic Factors Influencing Palladium Nanoparticle Redispersion into Mononuclear Pd(II) Cations in Zeolite Supports. Journal of Physical Chemistry C, 2022, 126, 8337-8353.	3.1	12
7	Structural Interconversion between Agglomerated Palladium Domains and Mononuclear Pd(II) Cations in Chabazite Zeolites. Chemistry of Materials, 2021, 33, 1698-1713.	6.7	42
8	Propene oligomerization on Beta zeolites: Development of a microkinetic model and experimental validation. Journal of Catalysis, 2021, 395, 302-314.	6.2	7
9	Effects of Br α nsted acid site proximity in chabazite zeolites on OH infrared spectra and protolytic propane cracking kinetics. Journal of Catalysis, 2021, 395, 210-226.	6.2	27
10	Olefin oligomerization by main group Ga $^{3+}$ and Zn $^{2+}$ single site catalysts on SiO $_2$. Nature Communications, 2021, 12, 2322.	12.8	26
11	Demonstrating Concepts in Catalysis, Renewable Energy, and Chemical Safety with the Catalytic Oxidation of Hydrogen. Journal of Chemical Education, 2021, 98, 2036-2041.	2.3	4
12	Dynamic Interconversion of Metal Active Site Ensembles in Zeolite Catalysis. Annual Review of Chemical and Biomolecular Engineering, 2021, 12, 115-136.	6.8	12
13	Developing quantitative synthesis-structure-function relations for framework aluminum arrangement effects in zeolite acid catalysis. Journal of Catalysis, 2021, 399, 75-85.	6.2	17
14	Temperature dependence of Cu(I) oxidation and Cu(II) reduction kinetics in the selective catalytic reduction of NO $_x$ with NH $_3$ on Cu-chabazite zeolites. Journal of Catalysis, 2021, 404, 873-882.	6.2	12
15	Dioxygen Activation Kinetics over Distinct Cu Site Types in Cu-Chabazite Zeolites. ACS Catalysis, 2021, 11, 11873-11884.	11.2	27
16	Kinetic effects of molecular clustering and solvation by extended networks in zeolite acid catalysis. Chemical Science, 2021, 12, 4699-4708.	7.4	24
17	Effects of Treatment Conditions on Pd Speciation in CHA and Beta Zeolites for Passive NO $_x$ Adsorption. ACS Omega, 2021, 6, 29471-29482.	3.5	12
18	Molecular water provides a channel for communication between Br α nsted acid sites in solid catalysts. Chem Catalysis, 2021, 1, 968-970.	6.1	0

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19	Mechanistic studies of NH ₃ -assisted reduction of mononuclear Cu(II) cation sites in Cu-CHA zeolites. <i>Catalysis Science and Technology</i> , 2021, 11, 7932-7942.	4.1	5
20	Experimental and Theoretical Assessments of Aluminum Proximity in MFI Zeolites and Its Alteration by Organic and Inorganic Structure-Directing Agents. <i>Chemistry of Materials</i> , 2020, 32, 9277-9298.	6.7	55
21	Opportunities in Catalysis over Metal-Zeotypes Enabled by Descriptions of Active Centers Beyond Their Binding Site. <i>ACS Catalysis</i> , 2020, 10, 9476-9495.	11.2	34
22	Rigid Arrangements of Ionic Charge in Zeolite Frameworks Conferred by Specific Aluminum Distributions Preferentially Stabilize Alkanol Dehydration Transition States. <i>Angewandte Chemie - International Edition</i> , 2020, 59, 18686-18694.	13.8	29
23	Clustering of alkanols confined in chabazite zeolites: Kinetic implications for dehydration of methanol-ethanol mixtures. <i>Journal of Catalysis</i> , 2020, 390, 178-183.	6.2	12
24	Solvation and Mobilization of Copper Active Sites in Zeolites by Ammonia: Consequences for the Catalytic Reduction of Nitrogen Oxides. <i>Accounts of Chemical Research</i> , 2020, 53, 1881-1892.	15.6	78
25	Mechanistic insights into alkene chain growth reactions catalyzed by nickel active sites on ordered microporous and mesoporous supports. <i>Catalysis Science and Technology</i> , 2020, 10, 7101-7123.	4.1	31
26	Rigid Arrangements of Ionic Charge in Zeolite Frameworks Conferred by Specific Aluminum Distributions Preferentially Stabilize Alkanol Dehydration Transition States. <i>Angewandte Chemie</i> , 2020, 132, 18845-18853.	2.0	22
27	Tighter Confinement Increases Selectivity of <i>d</i> -Glucose Isomerization Toward <i>l</i> -Sorbose in Titanium Zeolites. <i>Angewandte Chemie</i> , 2020, 132, 19264-19269.	2.0	1
28	Quantification of Intraporous Hydrophilic Binding Sites in Lewis Acid Zeolites and Consequences for Sugar Isomerization Catalysis. <i>ACS Catalysis</i> , 2020, 10, 12197-12211.	11.2	34
29	Effects of dioxygen pressure on rates of NO _x selective catalytic reduction with NH ₃ on Cu-CHA zeolites. <i>Journal of Catalysis</i> , 2020, 389, 140-149.	6.2	44
30	Parallel Alkane Dehydrogenation Routes on Brønsted Acid and Reaction-Derived Carbonaceous Active Sites in Zeolites. <i>Journal of Physical Chemistry C</i> , 2020, 124, 15839-15855.	3.1	7
31	Combining Kinetics and <i>Operando</i> Spectroscopy to Interrogate the Mechanism and Active Site Requirements of NO _x Selective Catalytic Reduction with NH ₃ on Cu-Zeolites. <i>Journal of Physical Chemistry Letters</i> , 2020, 11, 5029-5036.	4.6	24
32	Tighter Confinement Increases Selectivity of <i>d</i> -Glucose Isomerization Toward <i>l</i> -Sorbose in Titanium Zeolites. <i>Angewandte Chemie - International Edition</i> , 2020, 59, 19102-19107.	13.8	13
33	Structure and solvation of confined water and water-ethanol clusters within microporous Brønsted acids and their effects on ethanol dehydration catalysis. <i>Chemical Science</i> , 2020, 11, 7102-7122.	7.4	68
34	Cooperative and Competitive Occlusion of Organic and Inorganic Structure-Directing Agents within Chabazite Zeolites Influences Their Aluminum Arrangement. <i>Journal of the American Chemical Society</i> , 2020, 142, 4807-4819.	13.7	97
35	Initiating a research-focused academic career in chemical engineering: Perspectives from faculty at different career stages. <i>AIChE Journal</i> , 2020, 66, e16927.	3.6	1
36	Microkinetic Model of Propylene Oligomerization on Brønsted Acidic Zeolites at Low Conversion. <i>ACS Catalysis</i> , 2019, 9, 8996-9008.	11.2	31

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37	Consequences of exchange-site heterogeneity and dynamics on the UV-visible spectrum of Cu-exchanged SSZ-13. <i>Chemical Science</i> , 2019, 10, 2373-2384.	7.4	80
38	Defect-Mediated Ordering of Condensed Water Structures in Microporous Zeolites. <i>Angewandte Chemie</i> , 2019, 131, 16574-16578.	2.0	11
39	Defect-Mediated Ordering of Condensed Water Structures in Microporous Zeolites. <i>Angewandte Chemie - International Edition</i> , 2019, 58, 16422-16426.	13.8	38
40	Distinct Catalytic Reactivity of Sn Substituted in Framework Locations and at Defect Grain Boundaries in Sn-Zeolites. <i>ACS Catalysis</i> , 2019, 9, 6146-6168.	11.2	52
41	Influence of the <i>N</i> , <i>N</i> , <i>N</i> -Trimethyl-1-adamantyl Ammonium Structure-Directing Agent on Al Substitution in SSZ-13 Zeolite. <i>Journal of Physical Chemistry C</i> , 2019, 123, 17454-17458.	3.1	20
42	Influence of Tetrapropylammonium and Ethylenediamine Structure-Directing Agents on the Framework Al Distribution in α -MFI Zeolites. <i>Industrial & Engineering Chemistry Research</i> , 2019, 58, 11849-11860.	3.7	24
43	Automotive NO _x abatement using zeolite-based technologies. <i>Reaction Chemistry and Engineering</i> , 2019, 4, 966-968.	3.7	14
44	Deactivation of Sn-Beta zeolites caused by structural transformation of hydrophobic to hydrophilic micropores during aqueous-phase glucose isomerization. <i>Catalysis Science and Technology</i> , 2019, 9, 1654-1668.	4.1	40
45	Mechanistic origins of the high-pressure inhibition of methanol dehydration rates in small-pore acidic zeolites. <i>Journal of Catalysis</i> , 2019, 380, 161-177.	6.2	40
46	Cooperative Effects between Hydrophilic Pores and Solvents: Catalytic Consequences of Hydrogen Bonding on Alkene Epoxidation in Zeolites. <i>Journal of the American Chemical Society</i> , 2019, 141, 7302-7319.	13.7	142
47	Spectroscopic and kinetic responses of Cu-SSZ-13 to SO ₂ exposure and implications for NO _x selective catalytic reduction. <i>Applied Catalysis A: General</i> , 2019, 574, 122-131.	4.3	48
48	Ammonia Titration Methods To Quantify Brønsted Acid Sites in Zeolites Substituted with Aluminum and Boron Heteroatoms. <i>Industrial & Engineering Chemistry Research</i> , 2018, 57, 6673-6683.	3.7	11
49	Consideration of the Aluminum Distribution in Zeolites in Theoretical and Experimental Catalysis Research. <i>ACS Catalysis</i> , 2018, 8, 770-784.	11.2	161
50	First-Principles Comparison of Proton and Divalent Copper Cation Exchange Energy Landscapes in SSZ-13 Zeolite. <i>Journal of Physical Chemistry C</i> , 2018, 122, 23564-23573.	3.1	35
51	Dominant Role of Entropy in Stabilizing Sugar Isomerization Transition States within Hydrophobic Zeolite Pores. <i>Journal of the American Chemical Society</i> , 2018, 140, 14244-14266.	13.7	83
52	Evidence for the Coordination-Insertion Mechanism of Ethene Dimerization at Nickel Cations Exchanged onto Beta Molecular Sieves. <i>ACS Catalysis</i> , 2018, 8, 11407-11422.	11.2	66
53	Influence of confining environment polarity on ethanol dehydration catalysis by Lewis acid zeolites. <i>Journal of Catalysis</i> , 2018, 365, 213-226.	6.2	44
54	First principles, microkinetic, and experimental analysis of Lewis acid site speciation during ethanol dehydration on Sn-Beta zeolites. <i>Journal of Catalysis</i> , 2018, 365, 261-276.	6.2	49

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55	Structural and kinetic changes to small-pore Cu-zeolites after hydrothermal aging treatments and selective catalytic reduction of NO _x with ammonia. Reaction Chemistry and Engineering, 2017, 2, 168-179.	3.7	54
56	Molecular Structure and Confining Environment of Sn Sites in Single-Site Chabazite Zeolites. Chemistry of Materials, 2017, 29, 8824-8837.	6.7	44
57	Introducing Catalytic Diversity into Single-Site Chabazite Zeolites of Fixed Composition via Synthetic Control of Active Site Proximity. ACS Catalysis, 2017, 7, 6663-6674.	11.2	117
58	Dynamic multinuclear sites formed by mobilized copper ions in NO _x selective catalytic reduction. Science, 2017, 357, 898-903.	12.6	667
59	A transmission infrared cell design for temperature-controlled adsorption and reactivity studies on heterogeneous catalysts. Review of Scientific Instruments, 2016, 87, 103101.	1.3	20
60	Catalysis in a Cage: Condition-Dependent Speciation and Dynamics of Exchanged Cu Cations in SSZ-13 Zeolites. Journal of the American Chemical Society, 2016, 138, 6028-6048.	13.7	588
61	Using a Hands-On Hydrogen Peroxide Decomposition Activity To Teach Catalysis Concepts to K-12 Students. Journal of Chemical Education, 2016, 93, 1406-1410.	2.3	7
62	Controlled insertion of tin atoms into zeolite framework vacancies and consequences for glucose isomerization catalysis. Journal of Catalysis, 2016, 344, 108-120.	6.2	86
63	Identifying Sn Site Heterogeneities Prevalent Among Sn-Beta Zeolites. Helvetica Chimica Acta, 2016, 99, 916-927.	1.6	44
64	Titration and quantification of open and closed Lewis acid sites in Sn-Beta zeolites that catalyze glucose isomerization. Journal of Catalysis, 2016, 335, 141-154.	6.2	223
65	Controlling the Isolation and Pairing of Aluminum in Chabazite Zeolites Using Mixtures of Organic and Inorganic Structure-Directing Agents. Chemistry of Materials, 2016, 28, 2236-2247.	6.7	240
66	Solid State NMR Characterization of Sn-Beta Zeolites that Catalyze Glucose Isomerization and Epimerization. Topics in Catalysis, 2015, 58, 435-440.	2.8	40
67	The Dynamic Nature of Brønsted Acid Sites in Cu-Zeolites During NO _x Selective Catalytic Reduction: Quantification by Gas-Phase Ammonia Titration. Topics in Catalysis, 2015, 58, 424-434.	2.8	91
68	Isolation of the Copper Redox Steps in the Standard Selective Catalytic Reduction on Cu-SSZ-13. Angewandte Chemie - International Edition, 2014, 53, 11828-11833.	13.8	305
69	Methods for NH ₃ titration of Brønsted acid sites in Cu-zeolites that catalyze the selective catalytic reduction of NO _x with NH ₃ . Journal of Catalysis, 2014, 312, 26-36.	6.2	103
70	Hydrophobic microporous and mesoporous oxides as Brønsted and Lewis acid catalysts for biomass conversion in liquid water. Catalysis Science and Technology, 2014, 4, 2877-2886.	4.1	94
71	Challenges of and Insights into Acid-Catalyzed Transformations of Sugars. Journal of Physical Chemistry C, 2014, 118, 22815-22833.	3.1	88
72	Active Sites in Sn-Beta for Glucose Isomerization to Fructose and Epimerization to Mannose. ACS Catalysis, 2014, 4, 2288-2297.	11.2	254

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73	Beyond shape selective catalysis with zeolites: Hydrophobic void spaces in zeolites enable catalysis in liquid water. <i>AIChE Journal</i> , 2013, 59, 3349-3358.	3.6	120
74	Monosaccharide and disaccharide isomerization over Lewis acid sites in hydrophobic and hydrophilic molecular sieves. <i>Journal of Catalysis</i> , 2013, 308, 176-188.	6.2	150
75	The catalytic diversity of zeolites: confinement and solvation effects within voids of molecular dimensions. <i>Chemical Communications</i> , 2013, 49, 3491.	4.1	219
76	Titanium-Beta Zeolites Catalyze the Stereospecific Isomerization of α -Glucose to β -Sorbitol via Intramolecular C5-C1 Hydride Shift. <i>ACS Catalysis</i> , 2013, 3, 1469-1476.	11.2	60
77	Framework and Extraframework Tin Sites in Zeolite Beta React Glucose Differently. <i>ACS Catalysis</i> , 2012, 2, 2705-2713.	11.2	274
78	The Roles of Entropy and Enthalpy in Stabilizing Ion-Pairs at Transition States in Zeolite Acid Catalysis. <i>Accounts of Chemical Research</i> , 2012, 45, 229-238.	15.6	197
79	Solvation and acid strength effects on catalysis by faujasite zeolites. <i>Journal of Catalysis</i> , 2012, 286, 214-223.	6.2	127
80	Catalytic hydrogenation of alkenes on acidic zeolites: Mechanistic connections to monomolecular alkane dehydrogenation reactions. <i>Journal of Catalysis</i> , 2011, 277, 36-45.	6.2	63
81	Catalytic Alkylation Routes via Carbonium-Ion-Like Transition States on Acidic Zeolites. <i>ChemCatChem</i> , 2011, 3, 1134-1138.	3.7	8
82	Effects of Partial Confinement on the Specificity of Monomolecular Alkane Reactions for Acid Sites in Side Pockets of Mordenite. <i>Angewandte Chemie - International Edition</i> , 2010, 49, 808-811.	13.8	105
83	Catalytic Consequences of Spatial Constraints and Acid Site Location for Monomolecular Alkane Activation on Zeolites. <i>Journal of the American Chemical Society</i> , 2009, 131, 1958-1971.	13.7	277
84	Entropy considerations in monomolecular cracking of alkanes on acidic zeolites. <i>Journal of Catalysis</i> , 2008, 253, 221-224.	6.2	112