

Manuel Moliner

List of Publications by Year in descending order

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116
papers

10,197
citations

38720

50
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33869

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127
all docs

127
docs citations

127
times ranked

6868
citing authors

#	ARTICLE	IF	CITATIONS
1	Tin-containing zeolites are highly active catalysts for the isomerization of glucose in water. Proceedings of the National Academy of Sciences of the United States of America, 2010, 107, 6164-6168.	3.3	861
2	Mechanism of Glucose Isomerization Using a Solid Lewis Acid Catalyst in Water. Angewandte Chemie - International Edition, 2010, 49, 8954-8957.	7.2	612
3	One-Pot Synthesis of 5-(Hydroxymethyl)furfural from Carbohydrates using Tin-Beta Zeolite. ACS Catalysis, 2011, 1, 408-410.	5.5	607
4	The ITQ-37 mesoporous chiral zeolite. Nature, 2009, 458, 1154-1157.	13.7	526
5	High-throughput synthesis and catalytic properties of a molecular sieve with 18- and 10-member rings. Nature, 2006, 443, 842-845.	13.7	473
6	Metalloenzyme-like catalyzed isomerizations of sugars by Lewis acid zeolites. Proceedings of the National Academy of Sciences of the United States of America, 2012, 109, 9727-9732.	3.3	354
7	Reversible Transformation of Pt Nanoparticles into Single Atoms inside High-Silica Chabazite Zeolite. Journal of the American Chemical Society, 2016, 138, 15743-15750.	6.6	336
8	Multipore Zeolites: Synthesis and Catalytic Applications. Angewandte Chemie - International Edition, 2015, 54, 3560-3579.	7.2	296
9	Towards the Rational Design of Efficient Organic Structure-Directing Agents for Zeolite Synthesis. Angewandte Chemie - International Edition, 2013, 52, 13880-13889.	7.2	290
10	Synthesis Strategies for Preparing Useful Small Pore Zeolites and Zeotypes for Gas Separations and Catalysis. Chemistry of Materials, 2014, 26, 246-258.	3.2	267
11	Cu-SSZ-39, an active and hydrothermally stable catalyst for the selective catalytic reduction of NOx. Chemical Communications, 2012, 48, 8264.	2.2	213
12	Ab initio synthesis of zeolites for preestablished catalytic reactions. Science, 2017, 355, 1051-1054.	6.0	204
13	Structure and catalytic properties of the most complex intergrown zeolite ITQ-39 determined by electron crystallography. Nature Chemistry, 2012, 4, 188-194.	6.6	178
14	A Machine Learning Approach to Zeolite Synthesis Enabled by Automatic Literature Data Extraction. ACS Central Science, 2019, 5, 892-899.	5.3	176
15	State of the art of Lewis acid-containing zeolites: lessons from fine chemistry to new biomass transformation processes. Dalton Transactions, 2014, 43, 4197-4208.	1.6	168
16	Rational direct synthesis methodology of very active and hydrothermally stable Cu-SAPO-34 molecular sieves for the SCR of NOx. Applied Catalysis B: Environmental, 2012, 127, 273-280.	10.8	152
17	High yield synthesis of high-silica chabazite by combining the role of zeolite precursors and tetraethylammonium: SCR of NOx. Chemical Communications, 2015, 51, 9965-9968.	2.2	131
18	Effect of Cage Size on the Selective Conversion of Methanol to Light Olefins. ACS Catalysis, 2012, 2, 2490-2495.	5.5	128

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19	Building Zeolites from Precrystallized Units: Nanoscale Architecture. <i>Angewandte Chemie - International Edition</i> , 2018, 57, 15330-15353.	7.2	126
20	Impact of Controlling the Site Distribution of Al Atoms on Catalytic Properties in Ferrierite-Type Zeolites. <i>Journal of Physical Chemistry C</i> , 2011, 115, 1096-1102.	1.5	114
21	Efficient One-Pot Preparation of Cu-SSZ-13 Materials using Cooperative OSDAs for their Catalytic Application in the SCR of NO _x . <i>ChemCatChem</i> , 2013, 5, 3316-3323.	1.8	114
22	Synthesis of reaction-adapted zeolites as methanol-to-olefins catalysts with mimics of reaction intermediates as organic structure-directing agents. <i>Nature Catalysis</i> , 2018, 1, 547-554.	16.1	111
23	Synthesis, characterization and reactivity of high hydrothermally stable Cu-SAPO-34 materials prepared by one-pot-processes. <i>Journal of Catalysis</i> , 2014, 314, 73-82.	3.1	106
24	Synthesis of an extra-large molecular sieve using proton sponges as organic structure-directing agents. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2013, 110, 3749-3754.	3.3	103
25	Efficient synthesis of the Cu-SSZ-39 catalyst for DeNO _x applications. <i>Chemical Communications</i> , 2015, 51, 11030-11033.	2.2	95
26	Machine Learning Applied to Zeolite Synthesis: The Missing Link for Realizing High-Throughput Discovery. <i>Accounts of Chemical Research</i> , 2019, 52, 2971-2980.	7.6	94
27	Rational Design and HT Techniques Allow the Synthesis of New IWR Zeolite Polymorphs. <i>Journal of the American Chemical Society</i> , 2006, 128, 4216-4217.	6.6	93
28	Synthesis and Characterization of the All-Silica Pure Polymorph C and an Enriched Polymorph B Intergrowth of Zeolite Beta. <i>Angewandte Chemie - International Edition</i> , 2006, 45, 8013-8015.	7.2	93
29	A priori control of zeolite phase competition and intergrowth with high-throughput simulations. <i>Science</i> , 2021, 374, 308-315.	6.0	90
30	A New Aluminosilicate Molecular Sieve with a System of Pores between Those of ZSM-5 and Beta Zeolite. <i>Journal of the American Chemical Society</i> , 2011, 133, 9497-9505.	6.6	86
31	Advances in the synthesis of titanosilicates: From the medium pore TS-1 zeolite to highly-accessible ordered materials. <i>Microporous and Mesoporous Materials</i> , 2014, 189, 31-40.	2.2	82
32	High-silica nanocrystalline Beta zeolites: efficient synthesis and catalytic application. <i>Chemical Science</i> , 2016, 7, 102-108.	3.7	82
33	Increasing stability and productivity of lipase enzyme by encapsulation in a porous organo-inorganic system. <i>Microporous and Mesoporous Materials</i> , 2009, 118, 334-340.	2.2	81
34	Application of artificial neural networks to high-throughput synthesis of zeolites. <i>Microporous and Mesoporous Materials</i> , 2005, 78, 73-81.	2.2	80
35	Synthesis and Structure of Polymorph B of Zeolite Beta. <i>Chemistry of Materials</i> , 2008, 20, 3218-3223.	3.2	80
36	Nanocrystalline SSZ-39 zeolite as an efficient catalyst for the methanol-to-olefin (MTO) process. <i>Chemical Communications</i> , 2016, 52, 6072-6075.	2.2	80

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37	Synthesis methodology, stability, acidity, and catalytic behavior of the 18Å–10 member ring pores ITQ-33 zeolite. <i>Journal of Catalysis</i> , 2008, 254, 101-109.	3.1	78
38	A New Mapping/Exploration Approach for HT Synthesis of Zeolites. <i>Chemistry of Materials</i> , 2006, 18, 3287-3296.	3.2	76
39	Synthesis Design and Structure of a Multipore Zeolite with Interconnected 12- and 10-MR Channels. <i>Journal of the American Chemical Society</i> , 2012, 134, 6473-6478.	6.6	75
40	Direct synthesis design of Cu-SAPO-18, a very efficient catalyst for the SCR of NO _x . <i>Journal of Catalysis</i> , 2014, 319, 36-43.	3.1	74
41	Cage-based small-pore catalysts for NH ₃ -SCR prepared by combining bulky organic structure directing agents with modified zeolites as reagents. <i>Applied Catalysis B: Environmental</i> , 2017, 217, 125-136.	10.8	73
42	Cu-zeolite catalysts for NO _x removal by selective catalytic reduction with NH ₃ and coupled to NO storage/reduction monolith in diesel engine exhaust aftertreatment systems. <i>Applied Catalysis B: Environmental</i> , 2016, 187, 419-427.	10.8	71
43	Integrating high-throughput characterization into combinatorial heterogeneous catalysis: unsupervised construction of quantitative structure/property relationship models. <i>Journal of Catalysis</i> , 2005, 232, 335-341.	3.1	67
44	Discovery of a new catalytically active and selective zeolite (ITQ-30) by high-throughput synthesis techniques. <i>Journal of Catalysis</i> , 2006, 241, 312-318.	3.1	67
45	From metal-supported oxides to well-defined metal site zeolites: the next generation of passive NO _x adsorbers for low-temperature control of emissions from diesel engines. <i>Reaction Chemistry and Engineering</i> , 2019, 4, 223-234.	1.9	64
46	Synthesis of the Ti ^{IV} Silicate Form of BEC Polymorph of β -Zeolite Assisted by Molecular Modeling. <i>Journal of Physical Chemistry C</i> , 2008, 112, 19547-19554.	1.5	58
47	Making Nanosized CHA Zeolites with Controlled Al Distribution for Optimizing Methanol-to-Olefin Performance. <i>Chemistry - A European Journal</i> , 2018, 24, 14631-14635.	1.7	57
48	Discovering Relationships between OSDAs and Zeolites through Data Mining and Generative Neural Networks. <i>ACS Central Science</i> , 2021, 7, 858-867.	5.3	57
49	Improving the catalytic performance of SAPO-18 for the methanol-to-olefins (MTO) reaction by controlling the Si distribution and crystal size. <i>Catalysis Science and Technology</i> , 2016, 6, 2796-2806.	2.1	55
50	Impact of Zeolite Framework Composition and Flexibility on Methanol-to-Olefins Selectivity: Confinement or Diffusion?. <i>Angewandte Chemie - International Edition</i> , 2020, 59, 19708-19715.	7.2	52
51	Metal-containing zeolites as efficient catalysts for the transformation of highly valuable chiral biomass-derived products. <i>Green Chemistry</i> , 2013, 15, 2101.	4.6	51
52	Chemical and Structural Parameter Connecting Cavity Architecture, Confined Hydrocarbon Pool Species, and MTO Product Selectivity in Small-Pore Cage-Based Zeolites. <i>ACS Catalysis</i> , 2019, 9, 11542-11551.	5.5	51
53	Trapping of Metal Atoms and Metal Clusters by Chabazite under Severe Redox Stress. <i>ACS Catalysis</i> , 2018, 8, 9520-9528.	5.5	50
54	Zeolite Synthesis Modelling with Support Vector Machines: A Combinatorial Approach. <i>Combinatorial Chemistry and High Throughput Screening</i> , 2007, 10, 13-24.	0.6	49

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55	Iron-Containing SSZ-39 (AEI) Zeolite: An Active and Stable High-Temperature NH ₃ -SCR Catalyst. <i>ChemCatChem</i> , 2017, 9, 1754-1757.	1.8	49
56	Combining high-throughput experimentation, advanced data modeling and fundamental knowledge to develop catalysts for the epoxidation of large olefins and fatty esters. <i>Journal of Catalysis</i> , 2008, 258, 25-34.	3.1	47
57	Fe-Containing Zeolites for NH ₃ -SCR of NO _x : Effect of Structure, Synthesis Procedure, and Chemical Composition on Catalytic Performance and Stability. <i>Chemistry - A European Journal</i> , 2017, 23, 13404-13414.	1.7	44
58	Efficient Oligomerization of Pentene into Liquid Fuels on Nanocrystalline Beta Zeolites. <i>ACS Catalysis</i> , 2017, 7, 6170-6178.	5.5	43
59	Tailoring Lewis/Brønsted acid properties of MOF nodes via hydrothermal and solvothermal synthesis: simple approach with exceptional catalytic implications. <i>Chemical Science</i> , 2021, 12, 10106-10115.	3.7	40
60	Simple organic structure directing agents for synthesizing nanocrystalline zeolites. <i>Chemical Science</i> , 2017, 8, 8138-8149.	3.7	38
61	Deactivation and regeneration studies on Pd-containing medium pore zeolites as passive NO _x adsorbers (PNAs) in cold-start applications. <i>Microporous and Mesoporous Materials</i> , 2020, 302, 110222.	2.2	38
62	Design of a Full-Profile-Matching Solution for High-Throughput Analysis of Multiphase Samples Through Powder X-ray Diffraction. <i>Chemistry - A European Journal</i> , 2009, 15, 4258-4269.	1.7	36
63	Synthesis of Expanded Titanosilicate MWW-Related Materials from a Pure Silica Precursor. <i>Chemistry of Materials</i> , 2012, 24, 4371-4375.	3.2	34
64	A reliable methodology for high throughput identification of a mixture of crystallographic phases from powder X-ray diffraction data. <i>CrystEngComm</i> , 2008, 10, 1321.	1.3	33
65	Self-Assembled Aromatic Molecules as Efficient Organic Structure Directing Agents to Synthesize the Silicoaluminophosphate SAPO-42 with Isolated Si Species. <i>Chemistry of Materials</i> , 2015, 27, 2981-2989.	3.2	33
66	DoE framework for catalyst development based on soft computing techniques. <i>Computers and Chemical Engineering</i> , 2009, 33, 225-238.	2.0	29
67	In-Situ-Generated Active Hf-hydride in Zeolites for the Tandem N-Alkylation of Amines with Benzyl Alcohol. <i>ACS Catalysis</i> , 2021, 11, 8049-8061.	5.5	29
68	Synthesis of micro- and mesoporous molecular sieves at room temperature and neutral pH catalyzed by functional analogues of silicatein. <i>Chemical Communications</i> , 2006, , 3137-3139.	2.2	27
69	Direct Synthesis of Functional Zeolitic Materials. <i>ISRN Materials Science</i> , 2012, 2012, 1-24.	1.0	27
70	Modeling of EPR Parameters for Cu(II): Application to the Selective Reduction of NO _x Catalyzed by Cu-Zeolites. <i>Topics in Catalysis</i> , 2018, 61, 810-832.	1.3	26
71	Prediction of ITQ-21 Zeolite Phase Crystallinity: Parametric Versus Non-parametric Strategies. <i>QSAR and Combinatorial Science</i> , 2007, 26, 255-272.	1.5	25
72	Production of aromatics from biomass by computer-aided selection of the zeolite catalyst. <i>Green Chemistry</i> , 2020, 22, 5123-5131.	4.6	25

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73	Selective active site placement in Lewis acid zeolites and implications for catalysis of oxygenated compounds. <i>Chemical Science</i> , 2020, 11, 10225-10235.	3.7	23
74	Design and Synthesis of the Active Site Environment in Zeolite Catalysts for Selectively Manipulating Mechanistic Pathways. <i>Journal of the American Chemical Society</i> , 2021, 143, 10718-10726.	6.6	23
75	Coordinatively Unsaturated Hf-MOF-808 Prepared via Hydrothermal Synthesis as a Bifunctional Catalyst for the Tandem <i>N</i> -Alkylation of Amines with Benzyl Alcohol. <i>ACS Sustainable Chemistry and Engineering</i> , 2021, 9, 15793-15806.	3.2	23
76	Direct synthesis of a titanasilicate molecular sieve containing large and medium pores in its structure. <i>Microporous and Mesoporous Materials</i> , 2012, 164, 44-48.	2.2	22
77	Unusually Low Heat of Adsorption of CO ₂ on AlPO and SAPO Molecular Sieves. <i>Frontiers in Chemistry</i> , 2020, 8, 588712.	1.8	21
78	Single-Site vs. Cluster Catalysis in High Temperature Oxidations. <i>Angewandte Chemie - International Edition</i> , 2021, 60, 15954-15962.	7.2	21
79	Biodiesel production by immobilized lipase on zeolites and related materials. <i>Studies in Surface Science and Catalysis</i> , 2008, 174, 1011-1016.	1.5	20
80	Biomimetic synthesis of microporous and mesoporous materials at room temperature and neutral pH, with application in electronics, controlled release of chemicals, and catalysis. <i>New Journal of Chemistry</i> , 2008, 32, 1338.	1.4	20
81	Conceptual similarities between zeolites and artificial enzymes. <i>Chemical Science</i> , 2019, 10, 8009-8015.	3.7	20
82	Metalloenzyme-Inspired Ce-MOF Catalyst for Oxidative Halogenation Reactions. <i>ACS Applied Materials & Interfaces</i> , 2021, 13, 31021-31030.	4.0	20
83	Synthesis of the Small Pore Silicoaluminophosphate STA-6 by Using Supramolecular Self-Assembled Organic Structure Directing Agents. <i>Chemistry of Materials</i> , 2014, 26, 4346-4353.	3.2	19
84	Unraveling the Reaction Mechanism and Active Sites of Metal-Organic Frameworks for Glucose Transformations in Water: Experimental and Theoretical Studies. <i>ACS Sustainable Chemistry and Engineering</i> , 2020, 8, 16143-16155.	3.2	19
85	Design of Zeolites with Specific Architectures Using Self-Assembled Aromatic Organic Structure Directing Agents. <i>Topics in Catalysis</i> , 2015, 58, 502-512.	1.3	18
86	Increasing the stability of the Ge-containing extra-large pore ITQ-33 zeolite by post-synthetic acid treatments. <i>Microporous and Mesoporous Materials</i> , 2018, 267, 35-42.	2.2	18
87	The Limits of the Confinement Effect Associated to Cage Topology on the Control of the MTO Selectivity. <i>ChemCatChem</i> , 2021, 13, 1578-1586.	1.8	18
88	NH ₃ -SCR catalysts for heavy-duty diesel vehicles: Preparation of CHA-type zeolites with low-cost templates. <i>Applied Catalysis B: Environmental</i> , 2022, 303, 120928.	10.8	18
89	Tunable CHA/AEI Zeolite Intergrowths with A Priori Biselective Organic Structure-Directing Agents: Controlling Enrichment and Implications for Selective Catalytic Reduction of NO _x . <i>Angewandte Chemie - International Edition</i> , 2022, 61, .	7.2	18
90	CO ₂ hydrogenation using bifunctional catalysts based on K-promoted iron oxide and zeolite: influence of the zeolite structure and crystal size. <i>Catalysis Science and Technology</i> , 2020, 10, 5648-5658.	2.1	15

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91	Direct synthesis of the aluminosilicate form of the small pore CDO zeolite with novel OSDAs and the expanded polymorphs. <i>Microporous and Mesoporous Materials</i> , 2017, 246, 147-157.	2.2	14
92	Synthese von Zeolithen aus vorkristallisierten Bausteinen: Architektur im Nanomaßstab. <i>Angewandte Chemie</i> , 2018, 130, 15554-15578.	1.6	14
93	Nanosized MCM-22 zeolite using simple non-surfactant organic growth modifiers: synthesis and catalytic applications. <i>Chemical Communications</i> , 2018, 54, 9989-9992.	2.2	14
94	A Career in Catalysis: Avelino Corma. <i>ACS Catalysis</i> , 2022, 12, 7054-7123.	5.5	14
95	Rigid/Flexible Organic Structure Directing Agents for Directing the Synthesis of Multipore Zeolites: A Computational Approach. <i>Journal of Physical Chemistry C</i> , 2015, 119, 7711-7720.	1.5	13
96	Hybrid Organic-Inorganic Solids That Show Shape Selectivity. <i>Chemistry of Materials</i> , 2010, 22, 2646-2652.	3.2	12
97	Data-Driven Design of Biselective Templates for Intergrowth Zeolites. <i>Journal of Physical Chemistry Letters</i> , 2021, 12, 10689-10694.	2.1	12
98	Monomers That Form Conducting Polymers as Structure-Directing Agents: Synthesis of Microporous Molecular Sieves Encapsulating Poly(phenylenevinylene). <i>Chemistry - A European Journal</i> , 2007, 13, 8733-8738.	1.7	11
99	Synthesis of Al-MTW with low Si/Al ratios by combining organic and inorganic structure directing agents. <i>New Journal of Chemistry</i> , 2016, 40, 4140-4145.	1.4	11
100	Impact of Zeolite Framework Composition and Flexibility on Methanol-to-Olefins Selectivity: Confinement or Diffusion?. <i>Angewandte Chemie</i> , 2020, 132, 19876-19883.	1.6	11
101	ITQ-39 zeolite, an efficient catalyst for the conversion of low value naphtha fractions into diesel fuel: The role of pore size on molecular diffusion and reactivity. <i>Journal of Catalysis</i> , 2016, 333, 127-138.	3.1	10
102	Optimal Operating Conditions of Coupled Sequential NOx Storage/Reduction and Cu/CHA Selective Catalytic Reduction Monoliths. <i>Topics in Catalysis</i> , 2017, 60, 30-39.	1.3	8
103	Supra-molecular assembly of aromatic proton sponges to direct the crystallization of extra-large-pore zeotypes. <i>Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences</i> , 2014, 470, 20140107.	1.0	7
104	General Aspects on Structure and Reactivity of Framework and Extra-framework Metals in Zeolite Materials. <i>Structure and Bonding</i> , 2018, , 53-90.	1.0	7
105	Single-Site vs. Cluster Catalysis in High Temperature Oxidations. <i>Angewandte Chemie</i> , 2021, 133, 16090-16098.	1.6	5
106	Repurposing Templates for Zeolite Synthesis from Simulations and Data Mining. <i>Chemistry of Materials</i> , 2022, 34, 5366-5376.	3.2	5
107	Experimental energetics of large and extra-large pore zeolites: Pure silica beta polymorph C (BEC) and Ge-containing ITQ-33. <i>Microporous and Mesoporous Materials</i> , 2014, 187, 77-81.	2.2	4
108	Synthesis of highly stable metal-containing extra-large-pore molecular sieves. <i>Philosophical Transactions Series A, Mathematical, Physical, and Engineering Sciences</i> , 2016, 374, 20150075.	1.6	4

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109	Zeolite structure determination using electron crystallography. <i>Studies in Surface Science and Catalysis</i> , 2008, 174, 799-804.	1.5	3
110	Synthesis and structure of polymorph B of Beta zeolite. <i>Studies in Surface Science and Catalysis</i> , 2008, 174, 233-236.	1.5	3
111	Role of Supramolecular Chemistry During Templating Phenomenon in Zeolite Synthesis. <i>Structure and Bonding</i> , 2017, , 139-177.	1.0	3
112	Ge-Based Hybrid Composites from Ge-Rich Zeolites as Highly Conductive and Stable Electronic Materials. <i>Chemistry of Materials</i> , 2019, 31, 7723-7731.	3.2	3
113	Synthesis methodology, acidity and catalytic behaviour of the 18 Å– 10 member ring pores ITQ-33 zeolite. <i>Studies in Surface Science and Catalysis</i> , 2008, 174, 155-160.	1.5	2
114	Discovery of a new catalytically active and selective zeolite (ITQ-30) by high-throughput synthesis techniques. <i>Studies in Surface Science and Catalysis</i> , 2007, , 322-329.	1.5	1
115	Biomimetic synthesis of micro and mesoporous molecular sieves at room temperature and neutral pH. <i>Studies in Surface Science and Catalysis</i> , 2007, 170, 145-150.	1.5	1
116	Tunable CHA/AEI Zeolite Intergrowths with A Priori Biselective Organic Structureâ€Directing Agents: Controlling Enrichment and Implications for Selective Catalytic Reduction of NOx. <i>Angewandte Chemie</i> , 0, , .	1.6	1