Jiri Dedecek

List of Publications by Year
in descending order

117 papers	7,226 citations	41258 49 h-index	56606 83 g-index
125 all docs	125 docs citations	125 times ranked	4138 citing authors

#	Article	IF	Citations
1	Siting and Distribution of Framework Aluminium Atoms in Silicon-Rich Zeolites and Impact on Catalysis. Catalysis Reviews - Science and Engineering, 2012, 54, 135-223.	5.7	357
2	Coordination of Cu Ions in High-Silica Zeolite Matrixes. Cu+ Photoluminescence, IR of NO Adsorbed on Cu2+, and Cu2+ ESR Study. The Journal of Physical Chemistry, 1995, 99, 16327-16337.	2.9	254
3	Aluminum Siting in Siliconâ€Rich Zeolite Frameworks: A Combined Highâ€Resolution ²⁷Alâ€…NMR Spectroscopy and Quantum Mechanicsâ€‰/â€‰Molecular Mechanics Study of ZSMâ€5. Angewandte Chemie - International Edition, 2007, 46, 7286-7289.	7.2	234
4	Co2+ ion siting in pentasil-containing zeolites, part 3.. Microporous and Mesoporous Materials, 2000, 35-36, 483-494.	2.2	213
5	Enhancement of decane-SCR-NO over Ag/alumina by hydrogen. Reaction kinetics and in situ FTIR and UVâ€"vis study. Journal of Catalysis, 2005, 232, 302-317.	3.1	196
6	Aluminium siting in the ZSM-5 framework by combination of high resolution 27Al NMR and DFT/MM calculations. Physical Chemistry Chemical Physics, 2009, 11, 1237-1247.	1.3	196
7	Synthesis of ZSM-5 Zeolites with Defined Distribution of Al Atoms in the Framework and Multinuclear MAS NMR Analysis of the Control of Al Distribution. Chemistry of Materials, 2012, 24, 3231-3239.	3.2	190
8	FTIR and 27Al MAS NMR analysis of the effect of framework Al- and Si-defects in micro- and micro-mesoporous H-ZSM-5 on conversion of methanol to hydrocarbons. Microporous and Mesoporous Materials, 2011, 143, 87-96.	2.2	186
9	Co2+ Ion Siting in Pentasil-Containing Zeolites. I. Co2+ Ion Sites and Their Occupation in Mordenite. A Visâ^'NIR Diffuse Reflectance Spectroscopy Study. Journal of Physical Chemistry B, 1999, 103, 1462-1476.	1.2	177
10	Effect of aluminium distribution in the framework of ZSM-5 on hydrocarbon transformation. Cracking of 1-butene. Journal of Catalysis, 2008, 254, 180-189.	3.1	161
11	Co2+ions as probes of Al distribution in the framework of zeolites. ZSM-5 study. Physical Chemistry Chemical Physics, 2002, 4, 5406-5413.	1.3	153
12	Activity of Co Ion Sites in ZSM-5, Ferrierite, and Mordenite in Selective Catalytic Reduction of NO with Methane. Journal of Catalysis, 2000, 194, 318-329.	3.1	149
13	Selective Introduction of Acid Sites in Different Confined Positions in ZSM-5 and Its Catalytic Implications. ACS Catalysis, 2018, 8, 7688-7697.	5.5	139
14	Siting and Redox Behavior of Cu Ions in CuH-ZSM-5 Zeolites. Cu+ Photoluminescence Study. The Journal of Physical Chemistry, 1994, 98, 5721-5727.	2.9	138
15	On the Cu Site in ZSM-5 Active in Decomposition of NO: Luminescence, FTIR Study, and Redox Properties. Journal of Catalysis, 1997, 169, 194-202.	3.1	136
16	Analysis of Fe species in zeolites by UVâ€"VISâ€"NIR, IR spectra and voltammetry. Effect of preparation, Fe loading and zeolite type. Microporous and Mesoporous Materials, 2005, 80, 279-289.	2.2	130
17	Tuning the Aluminum Distribution in Zeolites to Increase their Performance in Acidâ€Catalyzed Reactions. ChemSusChem, 2019, 12, 556-576.	3.6	124
18	Effect of Alâ^'Siâ^'Al and Alâ^'Siâ^'Siâ^'Al Pairs in the ZSM-5 Zeolite Framework on the ²⁷Al NMR Spectra. A Combined High-Resolution ²⁷Al NMR and DFT/MM Study. Journal of Physical Chemistry C, 2009, 113, 1447-1458.	1.5	121

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19	N2O decomposition over Fe-zeolites: Structure of the active sites and the origin of the distinct reactivity of Fe-ferrierite, Fe-ZSM-5, and Fe-beta. A combined periodic DFT and multispectral study. Journal of Catalysis, 2010, 272, 262-274.	3.1	119
20	Geopolymer based catalystsâ€"New group of catalytic materials. Catalysis Today, 2011, 164, 92-99.	2.2	116
21	Co2+ ion siting in pentasil-containing zeolites. Microporous and Mesoporous Materials, 1999, 31, 75-87.	2.2	111
22	Identification of Cu Sites in ZSM-5 Active in NO Decomposition. The Journal of Physical Chemistry, 1995, 99, 1065-1067.	2.9	105
23	Redox catalysis over metallo-zeolites. Applied Catalysis B: Environmental, 2003, 41, 97-114.	10.8	105
24	Alkali-bonded ceramics with hierarchical tailored porosity. Applied Clay Science, 2013, 73, 56-64.	2.6	104
25	Tailoring of the structure of Fe-cationic species in Fe-ZSM-5 by distribution of Al atoms in the framework for N2O decomposition and NH3-SCR-NOx. Journal of Catalysis, 2014, 312, 123-138.	3.1	99
26	Control of Al distribution in ZSM-5 by conditions of zeolite synthesis. Chemical Communications, 2003, , 1196-1197.	2.2	93
27	State and coordination of metal ions in high silica zeolites Incorporation, development and rearrangement during preparation and catalysis. Microporous and Mesoporous Materials, 1998, 21, 525-532.	2.2	91
28	Metal Ions as Probes for Characterization of Geopolymer Materials. Journal of the American Ceramic Society, 2008, 91, 3052-3057.	1.9	91
29	Complex Analysis of the Aluminum Siting in the Framework of Silicon-Rich Zeolites. A Case Study on Ferrierites. Journal of Physical Chemistry C, 2011, 115, 11056-11064.	1.5	90
30	Al-rich beta zeolites. Distribution of Al atoms in the framework and related protonic and metal-ion species. Journal of Catalysis, 2016, 333, 102-114.	3.1	86
31	Co-beta zeolite highly active in propaneâ€"SCR-NOx in the presence of water vapor: effect of zeolite preparation and Al distribution in the framework. Journal of Catalysis, 2004, 227, 352-366.	3.1	82
32	Role of Hydrated Cu Ion Complexes and Aluminum Distribution in the Framework on the Cu Ion Siting in ZSM-5. Journal of Physical Chemistry B, 1997, 101, 10233-10240.	1.2	81
33	Geometry of the Cu+ 540 nm luminescence centres in zeolites. Physical Chemistry Chemical Physics, 1999, 1, 629-637.	1.3	81
34	Structure, Distribution, and Properties of Co Ions in Ferrierite Revealed by FTIR, UVâ€"Vis, and EXAFS. Journal of Catalysis, 2000, 194, 330-342.	3.1	81
35	Role of the morphology and the dehydroxylation of metakaolins on geopolymerization. Applied Clay Science, 2010, 50, 538-545.	2.6	81
36	Al distribution in ZSM-5 zeolites: an experimental study. Chemical Communications, 2001, , 970-971.	2.2	79

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37	Bonding of Co Ions in ZSM-5, Ferrierite, and Mordenite:â€‰ An X-ray Absorption, UVâˆ’Vis, and IR Study. Journal of Physical Chemistry B, 2002, 106, 2240-2248.	1.2	79
38	Effect of Al/Si Substitutions and Silanol Nests on the Local Geometry of Si and Al Framework Sites in Silicone-Rich Zeolites: A Combined High Resolution ²⁷Al and ²⁹Si NMR and Density Functional Theory/Molecular Mechanics Study. Journal of Physical Chemistry C, 2009, 113, 14454-14466.	1.5	73
39	Structure of Framework Aluminum Lewis Sites and Perturbed Aluminum Atoms in Zeolites as Determined by ²⁷Al{¹H} REDOR (3Q) MAS NMR Spectroscopy and DFT/Molecular Mechanics. Angewandte Chemie - International Edition, 2015, 54, 541-545.	7.2	73
40	Incorporation of Al at ZSM-5 hydrothermal synthesis. Tuning of Al pairs in the framework. Microporous and Mesoporous Materials, 2015, 202, 138-146.	2.2	70
41	Effect of metallic Si addition on polymerization degree of in situ foamed alkali-aluminosilicates. Ceramics International, 2013, 39, 7657-7668.	2.3	68
42	Location of Framework Al Atoms in the Channels of ZSMâ€5: Effect of the (Hydrothermal) Synthesis. Chemistry - A European Journal, 2016, 22, 3937-3941.	1.7	68
43	Al Organization in the SSZ-13 Zeolite. Al Distribution and Extraframework Sites of Divalent Cations. Journal of Physical Chemistry C, 2019, 123, 7968-7987.	1.5	63
44	Synthesis and Characterization of CoSBA-1 Cubic Mesoporous Molecular Sieves. Chemistry of Materials, 2002, 14, 2433-2435.	3.2	60
45	Coordination and properties of cobalt in the molecular sieves CoAPO-5 and -11. Microporous and Mesoporous Materials, 2000, 37, 117-127.	2.2	59
46	Enhancement of Activity and Selectivity in Acidâ€Catalyzed Reactions by Dealuminated Hierarchical Zeolites. Angewandte Chemie - International Edition, 2013, 52, 2038-2041.	7.2	59
47	Iron oxide mineralogy in late Miocene red beds from La Gloria, Spain: rock-magnetic, voltammetric and Vis spectroscopy analyses. Catena, 2003, 53, 115-132.	2.2	57
48	The decisive role of the distribution of Al in the framework of beta zeolites on the structure and activity of Co ion species in propaneâ€“SCRâ€“NOx in the presence of water vapour. Journal of Catalysis, 2010, 272, 44-54.	3.1	56
49	Control of metal ion species in zeolites by distribution of aluminium in the framework: From structural analysis to performance under real conditions of SCR-NOx and NO, N2O decomposition. Applied Catalysis A: General, 2011, 391, 244-253.	2.2	56
50	Acid and redox activity of template-free Al-rich H-BEA* and Fe-BEA* zeolites. Journal of Catalysis, 2014, 318, 22-33.	3.1	50
51	Experimental study of the effect of Si/Al composition on the aluminum distribution in (Al)MCM-41. Microporous and Mesoporous Materials, 2001, 44-45, 259-266.	2.2	44
52	Preparation and Characterisation of Ag/Alumina Catalysts for the Removal of NOxEmissions Under Oxygen Rich Conditions. Topics in Catalysis, 2004, 30/31, 91-95.	1.3	44
53	Effect of the particle size and surface area of tungstated zirconia on the WOx nuclearity and n-heptane isomerization over Pt/WO3â€“ZrO2. Applied Catalysis A: General, 2011, 397, 82-93.	2.2	44
54	Siting of the Cu+ ions in dehydrated ion exchanged synthetic and natural chabasites: a Cu+ photoluminescence study. Microporous and Mesoporous Materials, 1999, 32, 63-74.	2.2	43

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55	Enhancement of propene oligomerization and aromatization by proximate protons in zeolites; FTIR study of the reaction pathway in ZSM-5. Catalysis Science and Technology, 2019, 9, 4262-4275.	2.1	43
56	Multiple Adsorption of NO on Fe2+Cations in the Î±- and Î²-Positions of Ferrierite:â€‰ An Experimental and Density Functional Study. Journal of Physical Chemistry C, 2007, 111, 9393-9402.	1.5	41
57	The effect of the inner particle structure on the electronic structure of the nano-crystalline Liâ€"Tiâ€"O spinels. Electrochimica Acta, 2007, 52, 1847-1856.	2.6	41
58	Solvothermal synthesis and electrochemical behavior of nanocrystalline cubic Liâ€"Tiâ€"O oxides with cationic disorder. Solid State Ionics, 2005, 176, 1877-1885.	1.3	40
59	Cu ion siting in high silica zeolites. Spectroscopy and redox properties. Catalysis Today, 1997, 38, 199-203.	2.2	39
60	Critical evaluation of the role of the distribution of Al atoms in the framework for the activity of metallo-zeolites in redox N2O/NOx reactions. Applied Catalysis A: General, 2014, 474, 178-185.	2.2	39
61	SiC-based refractory paints prepared with alkali aluminosilicate binders. Journal of the European Ceramic Society, 2011, 31, 2155-2165.	2.8	38
62	Alkylation and disproportionation of aromatic hydrocarbons over mesoporous molecular sieves. Microporous and Mesoporous Materials, 2001, 44-45, 499-507.	2.2	37
63	Adsorption of NO in Fe2+-Exchanged Ferrierite. A Density Functional Theory Study. Journal of Physical Chemistry C, 2007, 111, 586-595.	1.5	37
64	Tailoring of Fe-ferrierite for N2O decomposition: On the decisive role of framework Al distribution for catalytic activity of Fe species in Fe-ferrierite. Microporous and Mesoporous Materials, 2011, 146, 172-183.	2.2	35
65	Dioxygen dissociation over man-made system at room temperature to form the active Î±-oxygen for methane oxidation. Science Advances, 2020, 6, eaaz9776.	4.7	35
66	Catalytic activity of Cu-MeAlPO-11 in NO decomposition. Applied Catalysis B: Environmental, 1998, 15, 233-240.	10.8	32
67	Title is missing!. Topics in Catalysis, 2002, 18, 283-290.	1.3	31
68	Nature of active sites in decane-SCR-NOx and NO decomposition over Cu-ZSM-5 zeolites. Applied Catalysis A: General, 2006, 307, 156-164.	2.2	31
69	Unprecedented propaneâ€"SCR-NO x activity over template-free synthesized Al-rich Co-BEA âˆ— zeolite. Journal of Catalysis, 2015, 332, 201-211.	3.1	31
70	Low-temperature selective oxidation of methane over distant binuclear cationic centers in zeolites. Communications Chemistry, 2019, 2, .	2.0	31
71	Cu-ZSM-5 zeolite highly active in reduction of NO with decane. Applied Catalysis B: Environmental, 2005, 60, 147-153.	10.8	30
72	Catalytic Activity of Cu-Beta Zeolite in NO Decomposition: Effect of Copper and Aluminium Distribution. Journal of Catalysis, 2001, 200, 160-170.	3.1	29

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73	Stabilization of bare divalent Fe(II) cations in Al-rich beta zeolites for superior NO adsorption. Journal of Catalysis, 2014, 315, 1-5.	3.1	29
74	SBA-15 Immobilized Ruthenium Carbenes as Catalysts for Ring Closing Metathesis and Ring Opening Metathesis Polymerization. Topics in Catalysis, 2010, 53, 200-209.	1.3	27
75	Aluminum Siting in the ZSM-22 and Theta-1 Zeolites Revisited: A QM/MM Study. Collection of Czechoslovak Chemical Communications, 2008, 73, 909-920.	1.0	26
76	Synthesis of the Zeolites from SBU: An SSZ-13 Study. Chemistry of Materials, 2021, 33, 1781-1788.	3.2	25
77	The proximity of aluminium atoms influences the reaction pathway of ethanol transformation over zeolite ZSM-5. Communications Chemistry, 2020, 3, .	2.0	23
78	RuCl2(p-cymene)(PCy3) immobilized on mesoporous molecular sieves as catalyst for ROMP of norbornene and its derivatives. Journal of Molecular Catalysis A, 2010, 332, 19-24.	4.8	22
79	NO Oxidation Kinetics on Iron Zeolites: Influence of Framework Type and Iron Speciation. Topics in Catalysis, 2004, 30/31, 333-339.	1.3	20
80	Ag-ZSM-5 zeolite as high-temperature water-vapor sensor material. Materials Letters, 2008, 62, 4239-4241.	1.3	19
81	Biaxial Q-shearing of 27Al 3QMAS NMR spectra: Insight into the structural disorder of framework aluminosilicates. Solid State Nuclear Magnetic Resonance, 2014, 57-58, 29-38.	1.5	18
82	Local Structure of Cationic Sites in Dehydrated Zeolites Inferred from 27Al Magic-Angle Spinning NMR and Density Functional Theory Calculations. A Study on Li-, Na-, and K-Chabazite. Journal of Physical Chemistry C, 2016, 120, 14216-14225.	1.5	18
83	27Al-27Al double-quantum single-quantum MAS NMR: Applications to the structural characterization of microporous materials. Solid State Nuclear Magnetic Resonance, 2017, 84, 65-72.	1.5	18
84	Mechanochemical Pretreatment for Efficient Solventâ€Free Synthesis of SSZâ€13 Zeolite. Chemistry - A European Journal, 2019, 25, 12068-12073.	1.7	18
85	[sup 6]Li MAS NMR Study of Lithium Insertion into Hydrothermally Prepared Li-Ti-O Spinel. Electrochemical and Solid-State Letters, 2004, 7, A163.	2.2	15
86	TNUâ€9 Zeolite: Aluminum Distribution and Extraâ€Framework Sites of Divalent Cations. Chemistry - A European Journal, 2017, 23, 8857-8870.	1.7	15
87	NMR crystallography of monovalent cations in inorganic matrixes: Li+ siting and the local structure of Li+ sites in ferrierites. Chemical Communications, 2015, 51, 8962-8965.	2.2	14
88	Splitting Dioxygen over Distant Binuclear Fe Sites in Zeolites. Effect of the Local Arrangement and Framework Topology. ACS Catalysis, 2021, 11, 2340-2355.	5.5	14
89	Analysis of NH₃â€TPD Profiles for CuSSZâ€13 SCR Catalyst of Controlled Al Distribution â€" Complexity Resolved by First Principles Thermodynamics of NH₃ Desorption, IR and EPR Insight into Cu Speciation**. Chemistry - A European Journal, 2021, 27, 17159-17180.	1.7	14
90	Interface Induced Growth and Transformation of Polymer-Conjugated Proto-Crystalline Phases in Aluminosilicate Hybrids: A Multiple-Quantum ²³Naâ€"²³Na MAS NMR Correlation Spectroscopy Study.. Langmuir, 2016, 32, 2787-2797.	1.6	13

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91	Dioxygen splitting at room temperature over distant binuclear transition metal centers in zeolites for direct oxidation of methane to methanol. Chemical Communications, 2021, 57, 3472-3475.	2.2	12
92	Siting and Reactivity of the Co Ions in Ferrierite in Selective Catalytic Reduction of NO with CH4. Collection of Czechoslovak Chemical Communications, 1998, 63, 1781-1792.	1.0	11
93	Aluminium distribution in MCM-22. The effect of framework aluminium content and synthesis procedure. Studies in Surface Science and Catalysis, 2002, , 23-30.	1.5	9
94	Self-templating synthesis of hollow spheres of zeolite ZSM-5 from spray-dried aluminosilicate precursor. Microporous and Mesoporous Materials, 2016, 228, 59-63.	2.2	8
95	Speciation and siting of divalent transition metal ions in silicon-rich zeolites. An FTIR study. Pure and Applied Chemistry, 2019, 91, 1721-1732.	0.9	8
96	Milling Activation for the Solventâ€Free Synthesis of the Zeolite Mordenite. European Journal of Inorganic Chemistry, 2020, 2020, 2791-2797.	1.0	8
97	Catalytic Activity of Cu Ion-Exchanged Metalloaluminophosphates in NO Decomposition. Collection of Czechoslovak Chemical Communications, 1998, 63, 1755-1768.	1.0	6
98	(Al)MCM-41 Molecular Sieves. Aluminium Distribution, Uniformity and Structure of Inner Surface. Collection of Czechoslovak Chemical Communications, 2003, 68, 1998-2018.	1.0	5
99	Splitting dioxygen over distant binuclear transition metal cationic sites in zeolites. Effect of the transition metal cation. International Journal of Quantum Chemistry, 2021, 121, e26611.	1.0	5
100	Effect of Framework Charge Density on Catalytic Activity of Copper Loaded Molecular Sieves of Chabazite Structure in Nitrogen(II) Oxide Decomposition. Collection of Czechoslovak Chemical Communications, 2000, 65, 343-351.	1.0	5
101	Uniformity and Ordering of Inner Walls of (Al)MCM-41. Collection of Czechoslovak Chemical Communications, 2001, 66, 567-574.	1.0	5
102	Analysis of the State and Size of Silver on Alumina in Effective Removal of NO_{<I>x</I>} from Oxygen Rich Exhaust Gas. Journal of Nanoscience and Nanotechnology, 2006, 6, 1076-1083.	0.9	4
103	Aluminum siting in the framework of silicon rich zeolites. A ZSM-5 study. Studies in Surface Science and Catalysis, 2008, , 781-786.	1.5	4
104	Effect of Alkali-Free Synthesis and Post-Synthetic Treatment on Acid Sites in Beta Zeolites. Molecules, 2020, 25, 3434.	1.7	4
105	Ultrasonic Pretreatment as a Tool for the Preparation of Low-Defect Zeolite Mordenite. ACS Omega, 2021, 6, 2340-2345.	1.6	4
106	Determination of Zn Speciation, Siting, and Distribution in Ferrierite Using Luminescence and FTIR Spectroscopy. Journal of Physical Chemistry C, 2021, 125, 9060-9073.	1.5	4
107	Discoloration of Fired Kaolinitic Clays (Study of Fe³⁺ Coordination by MÃ¶ssbauer and) Tj ETQq1 1 0.784314 rgBT /Overlo	1.9	3
108	Structural stability of metal containing ferrierite under the conditions of HT-N2O decomposition. Microporous and Mesoporous Materials, 2019, 281, 15-22.	2.2	3

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109	Properties of Phosphorus-Containing Geopolymer Matrix and Fiber-Reinforced Composite. Ceramic Engineering and Science Proceedings, 2009, , 283-299.	0.1	2
110	Low-organics method to synthesize silver nanoparticles in an aqueous medium. Studies in Surface Science and Catalysis, 2010, 175, 823-826.	1.5	2
111	Formation and local structure of framework Al Lewis sites in beta zeolites. Journal of Chemical Physics, 2022, 156, 104702.	1.2	2
112	Analysis of Al Siting and Distribution in the Framework of ZSM-5 Zeolite. Studies in Surface Science and Catalysis, 2007, 172, 325-328.	1.5	1
113	Influence of the ultrasonic-assisted synthesis on Al distribution in a MOR zeolite: from gel to resulting material. New Journal of Chemistry, 0, , .	1.4	1
114	Local geometry of AlO4âˆ' and SiO4 tetrahedra in the silicone rich chabazite. A combined high resolution NMR and QM/MM study. Studies in Surface Science and Catalysis, 2008, , 729-732.	1.5	0
115	Frontispiece: Mechanochemical Pretreatment for Efficient Solventâ€Free Synthesis of SSZâ€13 Zeolite. Chemistry - A European Journal, 2019, 25, .	1.7	0
116	Proximity Effect on the Reactivity of Dioxygen Activated over Distant Binuclear Fe Sites in Zeolite Matrices. Journal of Physical Chemistry C, 2022, 126, 4854-4861.	1.5	0
117	NMR Crystallography of Monovalent Cations in Inorganic Matrices: Na⁺ Siting and the Local Structure of Na⁺ Sites in Ferrierites. Journal of Physical Chemistry C, 0, , .	1.5	0