Toru Wakihara

List of Publications by Year
in descending order

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112 papers	3,024 citations	136740 32 h-index	197535 49 g-index
115 all docs	115 docs citations	115 times ranked	2642 citing authors

#	Article	IF	Citations
1	Crystallization Behavior of Zeolite Beta in OSDA-Free, Seed-Assisted Synthesis. Journal of Physical Chemistry C, 2011, 115, 744-750.	1.5	172
2	Structure-Directing Behaviors of Tetraethylammonium Cations toward Zeolite Beta Revealed by the Evolution of Aluminosilicate Species Formed during the Crystallization Process. Journal of the American Chemical Society, 2015, 137, 14533-14544.	6.6	140
3	Widening Synthesis Bottlenecks: Realization of Ultrafast and Continuousâ€Flow Synthesis of Highâ€Silica Zeolite SSZâ€13 for NO_{<i>x</i>} Removal. Angewandte Chemie - International Edition, 2015, 54, 5683-5687.	7.2	121
4	Improve the Hydrothermal Stability of Cu-SSZ-13 Zeolite Catalyst by Loading a Small Amount of Ce. ACS Catalysis, 2018, 8, 9165-9173.	5.5	102
5	A new approach to the determination of atomic-architecture of amorphous zeolite precursors by high-energy X-ray diffraction technique. Physical Chemistry Chemical Physics, 2006, 8, 224-227.	1.3	88
6	Nanoarchitectured Metal Phosphates and Phosphonates: A New Material Horizon toward Emerging Applications. Chemistry of Materials, 2019, 31, 5343-5362.	3.2	87
7	Concerted Bimetallic Nanocluster Synthesis and Encapsulation via Induced Zeolite Framework Demetallation for Shape and Substrate Selective Heterogeneous Catalysis. Angewandte Chemie - International Edition, 2018, 57, 6454-6458.	7.2	78
8	A 3D Organically Synthesized Porous Carbon Material for Lithiumâ€Ion Batteries. Angewandte Chemie - International Edition, 2018, 57, 11952-11956.	7.2	75
9	Bead-Milling and Postmilling Recrystallization: An Organic Template-free Methodology for the Production of Nano-zeolites. Crystal Growth and Design, 2011, 11, 955-958.	1.4	74
10	Ultrafast synthesis of zeolites: breakthrough, progress and perspective. Inorganic Chemistry Frontiers, 2019, 6, 14-31.	3.0	72
11	Hydrothermal Synthesis and Characterization of Zeolites. Chemistry Letters, 2005, 34, 276-281.	0.7	66
12	Ultrafast Encapsulation of Metal Nanoclusters into MFI Zeolite in the Course of Its Crystallization: Catalytic Application for Propane Dehydrogenation. Angewandte Chemie - International Edition, 2020, 59, 19669-19674.	7.2	63
13	Continuous flow synthesis of ZSM-5 zeolite on the order of seconds. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 14267-14271.	3.3	59
14	One-minute synthesis of crystalline microporous aluminophosphate (AlPO4-5) by combining fast heating with a seed-assisted method. Chemical Communications, 2014, 50, 2526.	2.2	56
15	Encapsulation of Molybdenum Carbide Nanoclusters inside Zeolite Micropores Enables Synergistic Bifunctional Catalysis for Anisole Hydrodeoxygenation. ACS Catalysis, 2017, 7, 8147-8151.	5.5	56
16	Heteroepitaxial Growth of a Zeolite Film with a Patterned Surface-Texture. Journal of the American Chemical Society, 2003, 125, 12388-12389.	6.6	49
17	A top-down methodology for ultrafast tuning of nanosized zeolites. Chemical Communications, 2015, 51, 12567-12570.	2.2	49
18	Recent progress in the improvement of hydrothermal stability of zeolites. Chemical Science, 2021, 12, 7677-7695.	3.7	49

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19	Continuous flow synthesis of ordered porous materials: from zeolites to metalâ€“organic frameworks and mesoporous silica. Reaction Chemistry and Engineering, 2019, 4, 1699-1720.	1.9	48
20	Extremely Stable Zeolites Developed via Designed Liquid-Mediated Treatment. Journal of the American Chemical Society, 2020, 142, 3931-3938.	6.6	48
21	Ultrafast Continuous-Flow Synthesis of Crystalline Microporous Aluminophosphate AlPO₄-5. Chemistry of Materials, 2014, 26, 2327-2331.	3.2	46
22	Preparation of nanosized SSZ-13 zeolite with enhanced hydrothermal stability by a two-stage synthetic method. Microporous and Mesoporous Materials, 2018, 255, 192-199.	2.2	45
23	Fabrication of Fine Zeolite with Improved Catalytic Properties by Bead Milling and Alkali Treatment. ACS Applied Materials & Interfaces, 2010, 2, 2715-2718.	4.0	42
24	Cooperative Effect of Sodium and Potassium Cations on Synthesis of Ferrierite. Topics in Catalysis, 2009, 52, 67-74.	1.3	39
25	Time-resolved pair distribution function analysis ofÂdisordered materials on beamlines BL04B2 and BL08W at SPring-8. Journal of Synchrotron Radiation, 2018, 25, 1627-1633.	1.0	39
26	Non-precious molybdenum nanospheres as a novel cocatalyst for full-spectrum-driven photocatalytic CO2 reforming to CH4. Journal of Hazardous Materials, 2020, 393, 122324.	6.5	39
27	Rapid Synthesis of an Aluminumâ€Rich MSEâ€Type Zeolite by the Hydrothermal Conversion of an FAUâ€Type Zeolite. Chemistry - A European Journal, 2013, 19, 7780-7786.	1.7	38
28	Crystal Growth Kinetics as a Tool for Controlling the Catalytic Performance of a FAU-Type Basic Catalyst. ACS Catalysis, 2014, 4, 2333-2341.	5.5	38
29	Ultrafast synthesis of silicalite-1 using a tubular reactor with a feature of rapid heating. Microporous and Mesoporous Materials, 2016, 223, 140-144.	2.2	36
30	Improvement in the catalytic properties of ZSM-5 zeolite nanoparticles via mechanochemical and chemical modifications. Catalysis Science and Technology, 2016, 6, 2598-2604.	2.1	35
31	Ultrafast, OSDA-free synthesis of mordenite zeolite. CrystEngComm, 2017, 19, 632-640.	1.3	35
32	Highly Crystallized Nanometerâ€Sized Zeolite A with Large Cs Adsorption Capability for the Decontamination of Water. Chemistry - an Asian Journal, 2014, 9, 759-763.	1.7	34
33	Cu-Erionite Zeolite Achieves High Yield in Direct Oxidation of Methane to Methanol by Isothermal Chemical Looping. Chemistry of Materials, 2020, 32, 1448-1453.	3.2	33
34	Ultrafast and Continuous Flow Synthesis of Silicoaluminophosphates. Chemistry of Materials, 2016, 28, 4840-4847.	3.2	32
35	Reaction Kinetics Regulated Formation of Short-Range Order in an Amorphous Matrix during Zeolite Crystallization. Journal of the American Chemical Society, 2021, 143, 10986-10997.	6.6	32
36	Broadening the Applicable Scope of Seed-Directed, Organic Structure-Directing Agent-Free Synthesis of Zeolite to Zincosilicate Components: A Case of VET-Type Zincosilicate Zeolites. Chemistry of Materials, 2014, 26, 1957-1966.	3.2	29

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37	Downsizing AFX Zeolite Crystals to Nanoscale by a Postmilling Recrystallization Method. Crystal Growth and Design, 2016, 16, 3389-3394.	1.4	29
38	Investigation of the surface structure of zeolite A. Physical Chemistry Chemical Physics, 2005, 7, 3416.	1.3	28
39	Snâ€Beta Zeolite Catalysts with High Sn Contents Prepared from Snâ€“Si Mixed Oxide Composites. ChemNanoMat, 2015, 1, 155-158.	1.5	28
40	Understanding the high hydrothermal stability and NH3-SCR activity of the fast-synthesized ERI zeolite. Journal of Catalysis, 2020, 391, 346-356.	3.1	27
41	Comparative Study on the Different Interaction Pathways between Amorphous Aluminosilicate Species and Organic Structure-Directing Agents Yielding Different Zeolite Phases. Journal of Physical Chemistry C, 2017, 121, 24324-24334.	1.5	26
42	Tailoring the Subnano Silica Structure via Fluorine Doping for Development of Highly Permeable CO₂ Separation Membranes. ChemNanoMat, 2016, 2, 264-267.	1.5	24
43	Ultrafast synthesis of high-silica erionite zeolites with improved hydrothermal stability. Chemical Communications, 2017, 53, 6796-6799.	2.2	24
44	Ultrafast synthesis of *BEA zeolite without the aid of aging pretreatment. Microporous and Mesoporous Materials, 2018, 268, 1-8.	2.2	24
45	Testing the limits of zeolite structural flexibility: ultrafast introduction of mesoporosity in zeolites. Journal of Materials Chemistry A, 2020, 8, 735-742.	5.2	24
46	Structural Evolution of Amorphous Precursors toward Crystalline Zeolites Visualized by an in Situ X-ray Pair Distribution Function Approach. Journal of Physical Chemistry C, 2019, 123, 28419-28426.	1.5	23
47	Ultrafast post-synthesis treatment to prepare ZSM-5@Silicalite-1 as a core-shell structured zeolite catalyst. Microporous and Mesoporous Materials, 2019, 277, 197-202.	2.2	22
48	Top-down Tuning of Nanosized Zeolites by Bead-milling and Recrystallization. Journal of the Japan Petroleum Institute, 2013, 56, 206-213.	0.4	21
49	Changes in the medium-range order during crystallization of aluminosilicate zeolites characterized by high-energy X-ray diffraction technique. Journal of the Ceramic Society of Japan, 2009, 117, 277-282.	0.5	20
50	Zeolites with isolated-framework and oligomeric-extraframework hafnium species characterized with pair distribution function analysis. Physical Chemistry Chemical Physics, 2018, 20, 7914-7919.	1.3	20
51	Mechanistic Study on the Synthesis of a Porous Zincosilicate VPI-7 Containing Three-Membered Rings. Journal of Physical Chemistry C, 2011, 115, 443-446.	1.5	19
52	Preparation and characterization of Silicalite-1 zeolites with high manganese contents from mechanochemically pretreated reactants. Journal of Materials Chemistry A, 2015, 3, 6215-6222.	5.2	19
53	Ultrafast synthesis of AFX-Type zeolite with enhanced activity in the selective catalytic reduction of NOx and hydrothermal stability. RSC Advances, 2019, 9, 16790-16796.	1.7	19
54	Preparation and Gas Permeation Properties of Fluorineâ€“Silica Membranes with Controlled Amorphous Silica Structures: Effect of Fluorine Source and Calcination Temperature on Network Size. ACS Applied Materials & Interfaces, 2017, 9, 24625-24633.	4.0	18

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55	Temperature-controlled, two-stage synthesis of ZSM-5 zeolite nanoparticles with Al atoms tetrahedrally coordinated in the framework. Microporous and Mesoporous Materials, 2018, 270, 200-203.	2.2	16
56	Ultrafast surfactant-templating of *BEA zeolite: An efficient catalyst for the cracking of polyethylene pyrolysis vapours. Chemical Engineering Journal, 2021, 412, 128566.	6.6	16
57	Preparation of nano-zeolite X by bead-milling and post-milling recrystallization. Journal of the Ceramic Society of Japan, 2012, 120, 341-343.	0.5	15
58	Pioneering In Situ Recrystallization during Bead Milling: A Top-down Approach to Prepare Zeolite A Nanocrystals. Scientific Reports, 2016, 6, 29210.	1.6	15
59	Synthesis and characterization of MFI-type zincosilicate zeolites with high zinc content using mechanochemically treated Siâ€“Zn oxide composite. Microporous and Mesoporous Materials, 2019, 288, 109594.	2.2	15
60	Role of sodium cation during aging process in the synthesis of LEV-type zeolite. Microporous and Mesoporous Materials, 2019, 284, 82-89.	2.2	15
61	Understanding the Nucleation and Crystal Growth of Zeolites: A Case Study on the Crystallization of ZSM-5 from a Hydrogel System Under Ultrasonication. Journal of Physical Chemistry C, 2020, 124, 11516-11524.	1.5	15
62	Unique crystallization behavior in zeolite synthesis under external high pressures. Chemical Communications, 2020, 56, 2811-2814.	2.2	15
63	Rational seed-directed synthesis of MSE-type zeolites using a simple organic structure-directing agent by extending the composite building unit hypothesis. Microporous and Mesoporous Materials, 2017, 245, 1-7.	2.2	14
64	Comparative study of aluminosilicate glass and zeolite precursors in terms of Na environment and network structure. Microporous and Mesoporous Materials, 2018, 271, 33-40.	2.2	14
65	Zeolite Crystallization Triggered by Intermediate Stirring. Journal of Physical Chemistry C, 2019, 123, 20304-20313.	1.5	14
66	Insights into the ion-exchange properties of Zn(<scp>ii</scp>)-incorporated MOR zeolites for the capture of multivalent cations. Physical Chemistry Chemical Physics, 2019, 21, 4015-4021.	1.3	14
67	Water-Dispersible Tripletâ€“Triplet Annihilation Photon Upconversion Particle: Molecules Integrated in Hydrophobized Twoâ€“Dimensional Interlayer Space of Montmorillonite and Their Application for Photocatalysis in the Aqueous Phase. ACS Applied Materials & Interfaces, 2020, 12, 7021-7029.	4.0	14
68	Synthetic and natural MOR zeolites as high-capacity adsorbents for the removal of nitrous oxide. Chemical Communications, 2021, 57, 1312-1315.	2.2	14
69	Downsizing the K-CHA zeolite by a postmilling-recrystallization method for enhanced base-catalytic performance. New Journal of Chemistry, 2016, 40, 492-496.	1.4	13
70	Formation of a dense non-crystalline layer on the surface of zeolite Y crystals under high-temperature steaming conditions. Microporous and Mesoporous Materials, 2018, 268, 77-83.	2.2	13
71	Identifying the Factors Governing the Early-Stage Degradation of Cu-Chabazite Zeolite for NH₃-SCR. ACS Omega, 2019, 4, 3653-3659.	1.6	13
72	Revealing scenarios of interzeolite conversion from FAU to AEI through the variation of starting materials. Physical Chemistry Chemical Physics, 2022, 24, 4136-4146.	1.3	13

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73	Crystal Growth Behavior of Zeolites Elucidated by Atomic Force Microscopy. Journal of Chemical Engineering of Japan, 2004, 37, 669-674.	0.3	11
74	Tracking the crystallization behavior of high-silica FAU during AEI-type zeolite synthesis using acid treated FAU-type zeolite. RSC Advances, 2021, 11, 23082-23089.	1.7	10
75	Changes in the medium-range order of zeolite A by mechanical and thermal amorphization. Microporous and Mesoporous Materials, 2010, 136, 92-96.	2.2	9
76	Concerted Bimetallic Nanocluster Synthesis and Encapsulation via Induced Zeolite Framework Demetallation for Shape and Substrate Selective Heterogeneous Catalysis. Angewandte Chemie, 2018, 130, 6564-6568.	1.6	9
77	Fast Synthesis of SSZ-24: A Pure Silica Zeolite with AFI Framework. Chemistry Letters, 2018, 47, 654-656.	0.7	9
78	Toward Efficient Synthesis of Chiral Zeolites: A Rational Strategy for Fluorideâ€Free Synthesis of STWâ€Type Zeolite. Angewandte Chemie - International Edition, 2020, 59, 20099-20103.	7.2	9
79	Broadening synthetic scope of SSZ-39 zeolite for NH3-SCR: A fast and direct route from amorphous starting materials. Microporous and Mesoporous Materials, 2022, 330, 111583.	2.2	9
80	Dealumination of small-pore zeolites through pore-opening migration process with the aid of pore-filler stabilization. Science Advances, 2022, 8, .	4.7	9
81	Effect of the atomic arrangement of amorphized zeolite on the recrystallization behavior to crystalline zeolite. Journal of the Ceramic Society of Japan, 2011, 119, 605-608.	0.5	8
82	Addressing the viscosity challenge: ultrafast, stable-flow synthesis of zeolites with an emulsion method. Reaction Chemistry and Engineering, 2018, 3, 844-848.	1.9	8
83	Ultrafast and continuous-flow synthesis of AFX zeolite <i>via</i> interzeolite conversion of FAU zeolite. Reaction Chemistry and Engineering, 2021, 6, 74-81.	1.9	7
84	Synthesis of pure-silica ZSM-48 zeolite under mild hydrothermal condition with conventional amphiphilic cation by tuning the reactant gel composition. Journal of the Ceramic Society of Japan, 2013, 121, 575-577.	0.5	6
85	Crucial Factors for Seed-Directed Synthesis of CON-type Aluminoborosilicate Zeolites Using Tetraethylammonium. Crystal Growth and Design, 2019, 19, 5283-5291.	1.4	6
86	Crystallization of Ti-Rich *BEA Zeolites by the Combined Strategy of Using Tiâ€"Si Mixed Oxide Composites and Intentional Aluminum Addition/Post-Synthesis Dealumination. Crystal Growth and Design, 2018, 18, 2180-2188.	1.4	5
87	A 3D Organically Synthesized Porous Carbon Material for Lithiumâ€Ion Batteries. Angewandte Chemie, 2018, 130, 12128-12132.	1.6	5
88	Bridging the Gap between Structurally Distinct 2D Lamellar Zeolitic Precursors through a 3D Germanosilicate Intermediate. Angewandte Chemie - International Edition, 2019, 58, 14529-14533.	7.2	5
89	Optimized ultrafast flow synthesis of CON-type zeolite and improvement of its catalytic properties. Reaction Chemistry and Engineering, 2020, 5, 2260-2266.	1.9	5
90	Rapid Synthesis of Hydrothermally Stable ZSM-5 in the Presence of 1-Butanol. Chemistry Letters, 2020, 49, 1006-1008.	0.7	5

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91	Rational Manipulation of Stacking Arrangements in Threeâ€Dimensional Zeolites Built from Twoâ€Dimensional Zeolitic Nanosheets. Angewandte Chemie - International Edition, 2020, 59, 19934-19939.	7.2	4
92	Superior Ionâ€exchange Property of Amorphous Aluminosilicates Prepared by a Coâ€precipitation Method. Chemistry - an Asian Journal, 2020, 15, 2029-2034.	1.7	4
93	Observation of Liquid Phase Synthesis of Sulfide Solid Electrolytes Using Timeâ€Resolved Pair Distribution Function Analysis. Physica Status Solidi (B): Basic Research, 2020, 257, 2000106.	0.7	4
94	Engineering Mesopore Formation in Hierarchical Zeolites under High Hydrostatic Pressure. Chemistry of Materials, 2021, 33, 8440-8446.	3.2	4
95	Exploring Hydrothermal Synthesis of SAPO-18 under High Hydrostatic Pressure. Nanomaterials, 2022, 12, 396.	1.9	4
96	Robust CON-type zeolite nanocatalyst in methanol-to-olefins reaction: downsizing, recrystallisation and defect-healing treatments toward prolonged lifetime. Materials Advances, 2022, 3, 5442-5450.	2.6	4
97	Synthesis of MCM-41 with High Manganese Content by Mechanochemical Pretreatment of the Starting Materials. Chemistry Letters, 2014, 43, 1346-1348.	0.7	3
98	Dense Integration of Stable Aromatic Radicals within the Two-Dimensional Interlayer Space of Clay Minerals via Clay-Catalyzed Deamination of Arylammoniums. Chemistry of Materials, 2020, 32, 9008-9015.	3.2	3
99	Ultrafast Encapsulation of Metal Nanoclusters into MFI Zeolite in the Course of Its Crystallization: Catalytic Application for Propane Dehydrogenation. Angewandte Chemie, 2020, 132, 19837-19842.	1.6	3
100	Bridging the Gap between Structurally Distinct 2D Lamellar Zeolitic Precursors through a 3D Germanosilicate Intermediate. Angewandte Chemie, 2019, 131, 14671-14675.	1.6	2
101	Reconsideration of Viscosity Variation Mechanism in Calcium Ferrite Melt During Isothermal Melting Process. Metallurgical and Materials Transactions B: Process Metallurgy and Materials Processing Science, 2021, 52, 1945-1949.	1.0	2
102	Synthesis of (Silico)aluminophosphate Molecular Sieves Using an Alkanolamine as a Novel Organic Structure-directing Agent. Chemistry Letters, 2015, 44, 1300-1302.	0.7	1
103	Synthesis of Zeolite from Waste Perlite by Hydrothermal Treatment. Journal of MMIJ, 2017, 133, 182-187.	0.4	1
104	Toward Efficient Synthesis of Chiral Zeolites: A Rational Strategy for Fluorideâ€Free Synthesis of STWâ€Type Zeolite. Angewandte Chemie, 2020, 132, 20274-20278.	1.6	1
105	Aryl radical initiators accumulated within layered silicates realize polystyrene with directly and regioselectively bonded aryl-terminal groups. Dalton Transactions, 2021, 50, 835-839.	1.6	1
106	Reduction of crystal size of silicalite-1 synthesized in fluoride-containing media via multi-stage heating with intermediate stirring. Journal of the Ceramic Society of Japan, 2022, 130, 187-194.	0.5	1
107	Ultrafast dealumination of *BEA zeolite using a continuous-flow reactor. Advanced Powder Technology, 2022, 33, 103702.	2.0	1
108	RÃ¼cktitelbild: A 3D Organically Synthesized Porous Carbon Material for Lithium-Ion Batteries (Angew.) Tj ETQq0 0 0 rgBT /Overlock 10	1.6	0

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109	Rational Manipulation of Stacking Arrangements in Threeâ€Dimensional Zeolites Built from Twoâ€Dimensional Zeolitic Nanosheets. Angewandte Chemie, 2020, 132, 20106-20111.	1.6	0
110	Observation of Liquid Phase Synthesis of Sulfide Solid Electrolytes Using Timeâ€Resolved Pair Distribution Function Analysis. Physica Status Solidi (B): Basic Research, 2020, 257, 2070041.	0.7	0
111	Development of Zeolite Catalyst Which has High Selectivity by Mechanochemical Treatment. Hosokawa Powder Technology Foundation ANNUAL REPORT, 2013, 21, 86-89.	0.0	0
112	Mechanochemical Preparation of Compounded Particles of ZSM-5 Zeolite and Cerium Oxides Using Powder Composer. Journal of the Society of Powder Technology, Japan, 2016, 53, 810-819.	0.0	0