Toshiaki Taniike

List of Publications by Year
in descending order

87 papers	1,804 citations	279798 23 h-index	330143 37 g-index
88 all docs	88 docs citations	88 times ranked	1197 citing authors

#	Article	IF	Citations
1	High-Throughput Experimentation and Catalyst Informatics for Oxidative Coupling of Methane. ACS Catalysis, 2020, 10, 921-932.	11.2	117
2	Coadsorption model for first-principle description of roles of donors in heterogeneous Ziegler–Natta propylene polymerization. Journal of Catalysis, 2012, 293, 39-50.	6.2	102
3	The Rise of Catalyst Informatics: Towards Catalyst Genomics. ChemCatChem, 2019, 11, 1146-1152.	3.7	72
4	One-pot synthesis of TiO2/graphene nanocomposites for excellent visible light photocatalysis based on chemical exfoliation method. Carbon, 2018, 133, 109-117.	10.3	69
5	Coadsorption and Support–Mediated Interaction of Ti Species with Ethyl Benzoate in MgCl$_2$–Supported Heterogeneous Ziegler–Natta Catalysts Studied by Density Functional Calculations. Macromolecular Rapid Communications, 2007, 28, 1918-1922.	3.9	66
6	Multilateral characterization for industrial Ziegler–Natta catalysts toward elucidation of structure–performance relationship. Journal of Catalysis, 2014, 311, 33-40.	6.2	61
7	Polypropylene-grafted nanoparticles as a promising strategy for boosting physical properties of polypropylene-based nanocomposites. Polymer, 2014, 55, 1012-1019.	3.8	57
8	Revisiting the identity of Î´-MgCl2: Part I. Structural disorder studied by synchrotron X-ray total scattering. Journal of Catalysis, 2020, 385, 76-86.	6.2	51
9	Reductive Formation of Isospecific Ti Dinuclear Species on a MgCl$_2$ (110) Surface in Heterogeneous Ziegler–Natta Catalysts. Macromolecular Rapid Communications, 2008, 29, 1472-1476.	3.9	49
10	Propylene Polymerization Performance of Isolated and Aggregated Ti Species Studied Using a Well–Designed TiCl$_3$/MgCl$_2$ Ziegler–Natta Model Catalyst. Macromolecular Rapid Communications, 2009, 30, 887-891.	3.9	48
11	Machine Learning-Aided Structure Determination for TiCl$_4$–Capped MgCl$_2$ Nanoplate of Heterogeneous Ziegler–Natta Catalyst. ACS Catalysis, 2019, 9, 2599-2609.	11.2	46
12	Kinetic and morphological study of a magnesium ethoxide–based Ziegler–Natta catalyst for propylene polymerization. Polymer International, 2009, 58, 40-45.	3.1	41
13	The Use of Donors to Increase the Isotacticity of Polypropylene. Advances in Polymer Science, 2013, , 81-97.	0.8	37
14	Design of Pd@Graphene oxide framework nanocatalyst with improved activity and recyclability in Suzuki-Miyaura cross-coupling reaction. Applied Catalysis A: General, 2018, 549, 60-67.	4.3	36
15	Thermal conductivity of polypropylene/aluminum oxide nanocomposites prepared based on reactor granule technology. Composites Science and Technology, 2018, 165, 259-265.	7.8	34
16	Selective localization of aluminum oxide at interface and its effect on thermal conductivity in polypropylene/polyolefin elastomer blends. Composites Part B: Engineering, 2019, 162, 662-670.	12.0	32
17	Electronic Properties of Ti Sites in Ziegler–Natta Catalysts. ACS Catalysis, 2021, 11, 9949-9961.	11.2	32
18	Initial Particle Morphology Development in Ziegler–Natta Propylene Polymerization Tracked with Stopped–Flow Technique. Macromolecular Chemistry and Physics, 2011, 212, 723-729.	2.2	31

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19	Learning Catalyst Design Based on Bias-Free Data Set for Oxidative Coupling of Methane. ACS Catalysis, 2021, 11, 1797-1809.	11.2	31
20	Well-Defined Polypropylene/Polypropylene-Grafted Silica Nanocomposites: Roles of Number and Molecular Weight of Grafted Chains on Mechanistic Reinforcement. Polymers, 2016, 8, 300.	4.5	28
21	Design of continuous segregated polypropylene/Al2O3 nanocomposites and impact of controlled Al2O3 distribution on thermal conductivity. Composites Part A: Applied Science and Manufacturing, 2020, 131, 105825.	7.6	27
22	Alternation of Pore Architecture of Ziegler–Natta Catalysts through Modification of Magnesium Ethoxide. Macromolecular Reaction Engineering, 2015, 9, 325-332.	1.5	26
23	Validation of BET specific surface area for heterogeneous Ziegler-Natta catalysts based on α-S-plot. Applied Catalysis A: General, 2012, 437-438, 24-27.	4.3	25
24	Revisiting the identity of γ-MgCl2: Part II. Morphology and exposed surfaces studied by vibrational spectroscopies and DFT calculation. Journal of Catalysis, 2020, 387, 1-11.	6.2	25
25	High-Throughput Synthesis of Support Materials for Olefin Polymerization Catalyst. ACS Combinatorial Science, 2017, 19, 331-342.	3.8	23
26	Structure-performance relationship of Mg(OEt)2-based Ziegler-Natta catalysts. Journal of Catalysis, 2020, 389, 525-532.	6.2	23
27	Formation of Highly Active Ziegler–Natta Catalysts Clarified by a Multifaceted Characterization Approach. ACS Catalysis, 2021, 11, 13782-13796.	11.2	23
28	Density Functional Theoretical Calculations for a Co2/γ-Al2O3 Model Catalyst: Structures of the γ-Al2O3 Bulk and Surface and Attachment Sites for Co2+ Ions. Journal of Physical Chemistry B, 2006, 110, 4929-4936.	2.6	22
29	Similarities and Differences of the Active Sites in Basic and Advanced MgCl$_2$–Supported Ziegler–Natta Propylene Polymerization Catalysts. Macromolecular Reaction Engineering, 2010, 4, 510-515.	1.5	22
30	MgO/MgCl2/TiCl4 Core–Shell Catalyst for Establishing Structure–Performance Relationship in Ziegler–Natta Olefin Polymerization. Topics in Catalysis, 2014, 57, 911-917.	2.8	20
31	New Reactor Granule Technology for Highly Filled Nanocomposites: Effective Flame Retardation of Polypropylene/Magnesium Hydroxide Nanocomposites. Macromolecular Materials and Engineering, 2015, 300, 679-683.	3.6	20
32	A Density Functional Study on the Influence of the Molecular Flexibility of Donors on the Insertion Barrier and Stereoselectivity of Ziegler–Natta Propylene Polymerization. Macromolecular Chemistry and Physics, 2009, 210, 2188-2193.	2.2	19
33	Kinetic elucidation of comonomer–induced chemical and physical activation in heterogeneous ziegler–natta propylene polymerization. Journal of Polymer Science Part A, 2011, 49, 4005-4012.	2.3	19
34	Structure–performance relationship in Ziegler–Natta olefin polymerization with novel core–shell MgO/MgCl2/TiCl4 catalysts. Catalysis Communications, 2012, 27, 13-16.	3.3	19
35	Truxillic and truxinic acid-based, bio-derived diesters as potent internal donor in Ziegler-Natta catalyst for propylene polymerization. Applied Catalysis A: General, 2018, 554, 80-87.	4.3	18
36	Multidimensional Classification of Catalysts in Oxidative Coupling of Methane through Machine Learning and High-Throughput Data. Journal of Physical Chemistry Letters, 2020, 11, 6819-6826.	4.6	18

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37	Versatile strategy for fabrication of polypropylene nanocomposites with inorganic network structures based on catalyzed in-situ sol–gel reaction during melt mixing. Composites Science and Technology, 2014, 102, 120-125.	7.8	17
38	Development of high-throughput chemiluminescence imaging instrument for parallel evaluation of polymer lifetime. Polymer Degradation and Stability, 2015, 121, 340-347.	5.8	17
39	Development of a Large–Scale Stopped–Flow System for Heterogeneous Olefin Polymerization Kinetics. Macromolecular Reaction Engineering, 2012, 6, 275-279.	1.5	16
40	Cooperative Catalysis by Multiple Active Centers of a Half-Titanocene Catalyst Integrated in Polymer Random Coils. ACS Catalysis, 2019, 9, 3648-3656.	11.2	16
41	Precise Active Site Analysis for TiCl3/MgCl2 Ziegler-Natta Model Catalyst Based on Fractionation and Statistical Methods. Catalysts, 2013, 3, 137-147.	3.5	15
42	Microwave-assisted polycondensation for screening of organically-modified TiO2/SiO2 catalysts. Applied Catalysis A: General, 2020, 595, 117508.	4.3	15
43	Insight into structural distribution of heterogeneous Ziegler–Natta catalyst from non-empirical structure determination. Journal of Catalysis, 2021, 394, 299-306.	6.2	15
44	Structural Disorder of Mechanically Activated Î´-MgCl2 Studied by Synchrotron X-ray Total Scattering and Vibrational Spectroscopy. Catalysts, 2020, 10, 1089.	3.5	14
45	Extraction of Catalyst Design Heuristics from Random Catalyst Dataset and their Utilization in Catalyst Development for Oxidative Coupling of Methane. ChemCatChem, 2021, 13, 3262-3269.	3.7	14
46	Structure–Performance Relationship for Dialkyldimethoxysilane as an External Donor in Stopped–Flow Propylene Polymerization Using a Ziegler–Natta Catalyst. Macromolecular Chemistry and Physics, 2014, 215, 1721-1727.	2.2	13
47	Reactor granule technology for fabrication of functionally advantageous polypropylene nanocomposites with oxide nanoparticles. Composites Science and Technology, 2017, 144, 151-159.	7.8	13
48	Direct Design of Catalysts in Oxidative Coupling of Methane via High–Throughput Experiment and Deep Learning. ChemCatChem, 2021, 13, 952-957.	3.7	13
49	Constructing catalyst knowledge networks from catalyst big data in oxidative coupling of methane for designing catalysts. Chemical Science, 2021, 12, 12546-12555.	7.4	13
50	Development of Large-Scale Stopped-Flow Technique and its Application in Elucidation of Initial Ziegler–Natta Olefin Polymerization Kinetics. Polymers, 2019, 11, 1012.	4.5	12
51	New Quenching Procedure for Preservation of Initial Polymer/Catalyst Particle Morphology in Ziegler–Natta Olefin Polymerization. Macromolecular Reaction Engineering, 2009, 3, 467-472.	1.5	11
52	Nano-Dispersed Ziegler-Natta Catalysts for 1 Î¼m-Sized Ultra-High Molecular Weight Polyethylene Particles. Frontiers in Chemistry, 2018, 6, 524.	3.6	10
53	Cooperative influences of nanoparticle localization and phase coarsening on thermal conductivity of polypropylene/polyolefin elastomer blends. Composites Part A: Applied Science and Manufacturing, 2019, 126, 105602.	7.6	10
54	Less Entangled Ultrahigh-Molecular-Weight Polyethylene Produced by Nano-Dispersed Ziegler–Natta Catalyst. Industrial & Engineering Chemistry Research, 2021, 60, 2818-2827.	3.7	10

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55	Synthesis of polypropylene functionalized with a trace amount of reactive functional groups and its utilization in graft-type nanocomposites. Polymer, 2018, 158, 46-52.	3.8	9
56	High-precision Molecular Modelling for Ziegler-Natta Catalysts. Journal of the Japan Petroleum Institute, 2018, 61, 182-190.	0.6	9
57	Representing Catalytic and Processing Space in Methane Oxidation Reaction via Multioutput Machine Learning. Journal of Physical Chemistry Letters, 2021, 12, 808-814.	4.6	9
58	Solution-state NMR study of organic components of industrial Ziegler-Natta catalysts: Effect of by-products on catalyst performance. Applied Catalysis A: General, 2021, 611, 117971.	4.3	9
59	Spectroscopic Fingerprints of $MgCl_2/TiCl_4$ Nanoclusters Determined by Machine Learning and DFT. Journal of Physical Chemistry C, 2021, 125, 20048-20058.	3.1	9
60	New Quenching Method for Improving Large-Scale Stopped-Flow Technique. Macromolecular Reaction Engineering, 2014, 8, 766-770.	1.5	8
61	Chemiluminescence from recombinant spider silk under thermo-oxidative degradation. Polymer Degradation and Stability, 2017, 144, 264-269.	5.8	8
62	Synthesis of aryloxide-containing half-titanocene catalysts grafted to soluble polynorbornene chains and their application in ethylene polymerization: Integration of multiple active centres in a random coil. Journal of Catalysis, 2018, 357, 69-79.	6.2	8
63	Catalysis Gene Expression Profiling: Sequencing and Designing Catalysts. Journal of Physical Chemistry Letters, 2021, 12, 7335-7341.	4.6	8
64	Solvent screening for efficient chemical exfoliation of graphite. 2D Materials, 2021, 8, 015019.	4.4	8
65	Preparation and characterization of polypropylene/noble metal nanocomposites based on reactor granule technology. Polymer, 2017, 127, 251-258.	3.8	7
66	Synthesis of Ultrahigh Molecular Weight Polyethylene Using $MgO/MgCl_2/TiCl_4$ Core–Shell Catalysts. Macromolecular Chemistry and Physics, 2018, 219, 1800011.	2.2	7
67	Stabilizer Formulation Based on High-Throughput Chemiluminescence Imaging and Machine Learning. ACS Applied Polymer Materials, 2020, 2, 3319-3326.	4.4	7
68	Factors to influence low-temperature performance of supported Mn–Na2WO4 in oxidative coupling of methane. Molecular Catalysis, 2021, 516, 111976.	2.0	6
69	High-throughput screening and literature data-driven machine learning-assisted investigation of multi-component La_2O_3-based catalysts for the oxidative coupling of methane. Catalysis Science and Technology, 2022, 12, 2766-2774.	4.1	6
70	Dielectric Properties of Biaxially Oriented Polypropylene Nanocomposites Prepared Based on Reactor Granule Technology. ACS Applied Electronic Materials, 2022, 4, 1257-1265.	4.3	6
71	Stabilization of polypropylene-based materials via molecular retention with hyperbranched polymer. Polymer Degradation and Stability, 2017, 142, 50-54.	5.8	5
72	Templated synthesis of nano-sized silica in confined amorphous space of polypropylene. Composites Science and Technology, 2017, 140, 1-7.	7.8	5

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73	Stabilization of recombinant spider silk in thermo-oxidative degradation: High-throughput screening for antioxidants. Polymer Degradation and Stability, 2018, 153, 37-46.	5.8	4
74	Understanding chemiluminescence in catalytic oxidation of CO and hydrocarbons. Catalysis Today, 2021, 375, 56-63.	4.4	4
75	Unveiling gas–phase oxidative coupling of methane via data analysis. Journal of Computational Chemistry, 2021, 42, 1447-1451.	3.3	4
76	Effect of Internal Donors on Raman and IR Spectroscopic Fingerprints of MgCl2/TiCl4 Nanoclusters Determined by Machine Learning and DFT. Materials, 2022, 15, 909.	2.9	4
77	Machine Learning-Aided Catalyst Modification in Oxidative Coupling of Methane via Manganese Promoter. Industrial & Engineering Chemistry Research, 2022, 61, 8462-8469.	3.7	4
78	Exploring stabilizer formulations for light-induced yellowing of polystyrene by high-throughput experimentation and machine learning. Polymer Degradation and Stability, 2022, 201, 109967.	5.8	4
79	Tailoring Graphene Oxide Framework with N- and S- Containing Organic Ligands for the Confinement of Pd Nanoparticles Towards Recyclable Catalyst Systems. Catalysis Letters, 2021, 151, 247-254.	2.6	3
80	Particle engineering of magnesium ethoxide-based Ziegler-Natta catalyst through post-modification of magnesium ethoxide. Applied Catalysis A: General, 2021, 626, 118337.	4.3	3
81	Dual–Active–Site Nature of Magnesium Dichloride–Supported Cyclopentadienyl Titanium Chloride Catalysts Switched by an Activator in Propylene Polymerization. Macromolecular Chemistry and Physics, 2013, 214, 1011-1018.	2.2	2
82	Chemisorption-Induced Activation of $MgCl_2$ Film as Realistic Route for Heterogeneous Ziegler–Natta Surfaces under Ultrahigh Vacuum. Journal of Physical Chemistry C, 2017, 121, 24085-24092.	3.1	2
83	Dataset of energetically accessible structures of MgCl2/TiCl4 clusters for Ziegler-Natta catalysts. Data in Brief, 2021, 34, 106654.	1.0	1
84	Bottom-Up Synthesis of Multi-Grained Ziegler–Natta Catalyst Based on MgO/MgCl2/TiCl4 Core–Shell Catalyst. Catalysts, 2021, 11, 1092.	3.5	1
85	Graphene oxide framework-confined Ru (Ru@GOF) as recyclable catalyst for hydrogenation of levulinic acid into Î³-valerolactone with formic acid. Journal of Materials Science, 0, , .	3.7	1
86	Structure Determination of the Î´-MgCl$_2$ Support in Ziegler-Natta Catalysts. Journal of the Japan Petroleum Institute, 2022, 65, 88-96.	0.6	0
87	Physical Properties of Isotactic Polypropylene Blended with Less Crystalline Polypropylene. Macromolecular Reaction Engineering, 0, , 2200022.	1.5	0