Pablo Beato

List of Publications by Year
in descending order

88 papers	8,255 citations	76326 40 h-index	49909 87 g-index
89 all docs	89 docs citations	89 times ranked	6026 citing authors

#	Article	IF	Citations
1	Conversion of Methanol to Hydrocarbons: How Zeolite Cavity and Pore Size Controls Product Selectivity. Angewandte Chemie - International Edition, 2012, 51, 5810-5831.	13.8	1,476
2	A Consistent Reaction Scheme for the Selective Catalytic Reduction of Nitrogen Oxides with Ammonia. ACS Catalysis, 2015, 5, 2832-2845.	11.2	400
3	Magnetite Nanocrystals:Â Nonaqueous Synthesis, Characterization, and Solubilityâ€. Chemistry of Materials, 2005, 17, 3044-3049.	6.7	341
4	Revisiting the nature of Cu sites in the activated Cu-SSZ-13 catalyst for SCR reaction. Chemical Science, 2015, 6, 548-563.	7.4	341
5	Characterization of Cu-exchanged SSZ-13: a comparative FTIR, UV-Vis, and EPR study with Cu-ZSM-5 and Cu-Î² with similar Si/Al and Cu/Al ratios. Dalton Transactions, 2013, 42, 12741.	3.3	317
6	Methane to Methanol: Structureâ€"Activity Relationships for Cu-CHA. Journal of the American Chemical Society, 2017, 139, 14961-14975.	13.7	277
7	Structureâ€"deactivation relationship for ZSM-5 catalysts governed by framework defects. Journal of Catalysis, 2011, 280, 196-205.	6.2	265
8	Assessing the acid properties of desilicated ZSM-5 by FTIR using CO and 2,4,6-trimethylpyridine (collidine) as molecular probes. Applied Catalysis A: General, 2009, 356, 23-30.	4.3	249
9	Interaction of NH₃ with Cu-SSZ-13 Catalyst: A Complementary FTIR, XANES, and XES Study. Journal of Physical Chemistry Letters, 2014, 5, 1552-1559.	4.6	248
10	The Cu-CHA deNO_{<i>x</i>} Catalyst in Action: Temperature-Dependent NH₃-Assisted Selective Catalytic Reduction Monitored by Operando XAS and XES. Journal of the American Chemical Society, 2016, 138, 12025-12028.	13.7	243
11	Cu-CHA â€" a model system for applied selective redox catalysis. Chemical Society Reviews, 2018, 47, 8097-8133.	38.1	215
12	Shape Selectivity in the Conversion of Methanol to Hydrocarbons: The Catalytic Performance of One-Dimensional 10-Ring Zeolites: ZSM-22, ZSM-23, ZSM-48, and EU-1. ACS Catalysis, 2012, 2, 26-37.	11.2	207
13	The Nuclearity of the Active Site for Methane to Methanol Conversion in Cu-Mordenite: A Quantitative Assessment. Journal of the American Chemical Society, 2018, 140, 15270-15278.	13.7	177
14	Catalyst deactivation by coke formation in microporous and desilicated zeolite H-ZSM-5 during the conversion of methanol to hydrocarbons. Journal of Catalysis, 2013, 307, 62-73.	6.2	169
15	Composition-driven Cu-speciation and reducibility in Cu-CHA zeolite catalysts: a multivariate XAS/FTIR approach to complexity. Chemical Science, 2017, 8, 6836-6851.	7.4	163
16	Selectivity control through fundamental mechanistic insight in the conversion of methanol to hydrocarbons over zeolites. Microporous and Mesoporous Materials, 2010, 136, 33-41.	4.4	141
17	Conversion of methanol over 10-ring zeolites with differing volumes at channel intersections: comparison of TNU-9, IM-5, ZSM-11 and ZSM-5. Physical Chemistry Chemical Physics, 2011, 13, 2539-2549.	2.8	137
18	Methanol-to-hydrocarbons conversion: The alkene methylation pathway. Journal of Catalysis, 2014, 314, 159-169.	6.2	136

#	ARTICLE	IF	CITATIONS
19	Conversion of Methanol to Hydrocarbons: Spectroscopic Characterization of Carbonaceous Species Formed over H-ZSM-5. Journal of Physical Chemistry C, 2008, 112, 9710-9716.	3.1	127
20	Methylation of benzene by methanol: Single-site kinetics over H-ZSM-5 and H-beta zeolite catalysts. Journal of Catalysis, 2012, 292, 201-212.	6.2	126
21	High Zn/Al ratios enhance dehydrogenation vs hydrogen transfer reactions of Zn-ZSM-5 catalytic systems in methanol conversion to aromatics. Journal of Catalysis, 2018, 362, 146-163.	6.2	120
22	Synthesis and Characterization of Stable and Crystalline Ce1-xZrxO2 Nanoparticle Sols. Chemistry of Materials, 2004, 16, 2599-2604.	6.7	119
23	Synthesis of Yttria-Based Crystalline and Lamellar Nanostructures and their Formation Mechanism. Small, 2004, 1, 112-121.	10.0	118
24	New insights into catalyst deactivation and product distribution of zeolites in the methanol-to-hydrocarbons (MTH) reaction with methanol and dimethyl ether feeds. Catalysis Science and Technology, 2017, 7, 2700-2716.	4.1	106
25	How defects and crystal morphology control the effects of desilication. Catalysis Today, 2011, 168, 38-47.	4.4	103
26	Hydrogen Transfer versus Methylation: On the Genesis of Aromatics Formation in the Methanol-To-Hydrocarbons Reaction over H-ZSM-5. ACS Catalysis, 2017, 7, 5773-5780.	11.2	102
27	Structureâ€“deactivation relationships in zeolites during the methanolâ€“to-hydrocarbons reaction: Complementary assessments of the coke content. Journal of Catalysis, 2017, 351, 33-48.	6.2	82
28	Distribution of Aluminum over the Tetrahedral Sites in ZSM-5 Zeolites and Their Evolution after Steam Treatment. Journal of Physical Chemistry C, 2018, 122, 15595-15613.	3.1	82
29	A Straightforward Descriptor for the Deactivation of Zeolite Catalyst H-ZSM-5. ACS Catalysis, 2017, 7, 8235-8246.	11.2	77
30	Benzene co-reaction with methanol and dimethyl ether over zeolite and zeotype catalysts: Evidence of parallel reaction paths to toluene and diphenylmethane. Journal of Catalysis, 2017, 349, 136-148.	6.2	70
31	Kinetics of Zeolite Dealumination: Insights from H-SSZ-13. ACS Catalysis, 2015, 5, 7131-7139.	11.2	69
32	Morphology-induced shape selectivity in zeolite catalysis. Journal of Catalysis, 2015, 327, 22-32.	6.2	64
33	Probing the surface of nanosheet H-ZSM-5 with FTIR spectroscopy. Physical Chemistry Chemical Physics, 2013, 15, 13363.	2.8	53
34	Investigating the Low Temperature Formation of Cu^{II}â€(N,O) Species on Cuâ€CHA Zeolites for the Selective Catalytic Reduction of NO_x. Chemistry - A European Journal, 2018, 24, 12044-12053.	3.3	53
35	Analysis of structural transformations during the synthesis of a MoVTeNb mixed oxide catalyst. Applied Catalysis A: General, 2006, 307, 137-147.	4.3	52
36	Operando Raman spectroscopy applying novel fluidized bed micro-reactor technology. Catalysis Today, 2013, 205, 128-133.	4.4	45

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37	Zeolite Surface Methoxy Groups as Key Intermediates in the Stepwise Conversion of Methane to Methanol. ChemCatChem, 2019, 11, 5022-5026.	3.7	45
38	Nitrateâ€“nitrite equilibrium in the reaction of NO with a Cu-CHA catalyst for NH₃-SCR. Catalysis Science and Technology, 2016, 6, 8314-8324.	4.1	44
39	Synthesis of mesoporous ZSM-5 zeolite encapsulated in an ultrathin protective shell of silicalite-1 for MTH conversion. Microporous and Mesoporous Materials, 2020, 292, 109730.	4.4	44
40	Collective action of water molecules in zeolite dealumination. Catalysis Science and Technology, 2019, 9, 3721-3725.	4.1	43
41	Selective oxidation of propylene to acrolein by hydrothermally synthesized bismuth molybdates. Applied Catalysis A: General, 2014, 482, 145-156.	4.3	41
42	Time- and space-resolved study of the methanol to hydrocarbons (MTH) reaction â€“ influence of zeolite topology on axial deactivation patterns. Faraday Discussions, 2017, 197, 421-446.	3.2	39
43	Bismuth Molybdate Catalysts Prepared by Mild Hydrothermal Synthesis: Influence of pH on the Selective Oxidation of Propylene. Catalysts, 2015, 5, 1554-1573.	3.5	38
44	EXAFS wavelet transform analysis of Cu-MOR zeolites for the direct methane to methanol conversion. Physical Chemistry Chemical Physics, 2020, 22, 18950-18963.	2.8	35
45	Unit cell thick nanosheets of zeolite H-ZSM-5: Structure and activity. Topics in Catalysis, 2013, 56, 558-566.	2.8	33
46	MoS2 supported on P25 titania: A model system for the activation of a HDS catalyst. Journal of Catalysis, 2015, 328, 225-235.	6.2	33
47	Deactivation of Zeolite Catalyst H-ZSM-5 during Conversion of Methanol to Gasoline: Operando Time- and Space-Resolved X-ray Diffraction. Journal of Physical Chemistry Letters, 2018, 9, 1324-1328.	4.6	33
48	Deactivation behavior of an iron-molybdate catalyst during selective oxidation of methanol to formaldehyde. Catalysis Science and Technology, 2018, 8, 4626-4637.	4.1	32
49	Conversion of methanol to hydrocarbons over zeolite ZSM-23 (MTT): exceptional effects of particle size on catalyst lifetime. Chemical Communications, 2017, 53, 6816-6819.	4.1	31
50	Role of internal coke for deactivation of ZSM-5 catalysts after low temperature removal of coke with NO2. Catalysis Science and Technology, 2012, 2, 1196.	4.1	30
51	Time- and space-resolved high energy operando X-ray diffraction for monitoring the methanol to hydrocarbons reaction over H-ZSM-22 zeolite catalyst in different conditions. Surface Science, 2016, 648, 141-149.	1.9	30
52	Understanding and Optimizing the Performance of Cuâ€FER for The Direct CH₄ to CH₃OH Conversion. ChemCatChem, 2019, 11, 621-627.	3.7	29
53	Finding the active species: The conversion of methanol to aromatics over Zn-ZSM-5/alumina shaped catalysts. Journal of Catalysis, 2021, 394, 416-428.	6.2	29
54	Structure, activity and kinetics of supported molybdenum oxide and mixed molybdenumâ€“vanadium oxide catalysts prepared by flame spray pyrolysis for propane OHD. Applied Catalysis A: General, 2014, 472, 29-38.	4.3	27

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55	<i>Operando</i> XAS/XRD and Raman Spectroscopic Study of Structural Changes of the Iron Molybdate Catalyst during Selective Oxidation of Methanol. ChemCatChem, 2019, 11, 4871-4883.	3.7	26
56	The impact of reaction conditions and material composition on the stepwise methane to methanol conversion over Cu-MOR: An operando XAS study. Catalysis Today, 2019, 336, 99-108.	4.4	26
57	Electronic and Geometrical Structure of Zn⁺ Ions Stabilized in the Porous Structure of Zn-Loaded Zeolite H-ZSM-5: A Multifrequency CW and Pulse EPR Study. Journal of Physical Chemistry C, 2017, 121, 14238-14245.	3.1	25
58	Hierarchical ZSM-5 prepared by guanidinium base treatment: Understanding microstructural characteristics and impact on MTG and NH3-SCR catalytic reactions. Catalysis Today, 2011, 168, 71-79.	4.4	24
59	Systematic study on the influence of the morphology of Î±-MoO3 in the selective oxidation of propylene. Journal of Solid State Chemistry, 2015, 228, 42-52.	2.9	24
60	Tuning the material and catalytic properties of SUZ-4 zeolites for the conversion of methanol or methane. Microporous and Mesoporous Materials, 2018, 265, 112-122.	4.4	24
61	Single-Event MicroKinetics (SEMK) for Methanol to Hydrocarbons (MTH) on H-ZSM-23. Catalysis Today, 2013, 215, 224-232.	4.4	23
62	Influence of post-synthetic modifications on the composition, acidity and textural properties of ZSM-22 zeolite. Catalysis Today, 2018, 299, 120-134.	4.4	23
63	Catalytic hydropyrolysis of biomass using supported CoMo catalysts â€" Effect of metal loading and support acidity. Fuel, 2020, 264, 116807.	6.4	22
64	Impact of post-synthetic treatments on unidirectional H-ZSM-22 zeolite catalyst: Towards improved clean MTG catalytic process. Catalysis Today, 2018, 299, 135-145.	4.4	21
65	Co-conversion of methanol and light alkenes over acidic zeolite catalyst H-ZSM-22: Simulated recycle of non-gasoline range products. Applied Catalysis A: General, 2015, 494, 68-76.	4.3	19
66	From Colloidal Monodisperse Nickel Nanoparticles to Well-Defined Ni/Al₂O₃ Model Catalysts. Langmuir, 2017, 33, 9836-9843.	3.5	19
67	Identification of Distinct Framework Aluminum Sites in Zeolite ZSM-23: A Combined Computational and Experimental ²⁷Al NMR Study. Journal of Physical Chemistry C, 2019, 123, 7831-7844.	3.1	19
68	Exploring Scaling Relations for Chemisorption Energies on Transitionâ€Metalâ€Exchanged Zeolites ZSMâ€22 and ZSMâ€5. ChemCatChem, 2016, 8, 767-772.	3.7	18
69	Zeolite morphology and catalyst performance: conversion of methanol to hydrocarbons over offretite. Catalysis Science and Technology, 2017, 7, 5435-5447.	4.1	18
70	Topology-dependent hydrocarbon transformations in the methanol-to-hydrocarbons reaction studied by <i>operando</i> UV-Raman spectroscopy. Physical Chemistry Chemical Physics, 2018, 20, 26580-26590.	2.8	18
71	Temperature-programmed reduction with NO as a characterization of active Cu in Cu-CHA catalysts for NH₃-SCR. Catalysis Science and Technology, 2019, 9, 2608-2619.	4.1	17
72	Methanol Conversion to Hydrocarbons (MTH) Over H-ITQ-13 (ITH) Zeolite. Topics in Catalysis, 2014, 57, 143-158.	2.8	16

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73	Operando UV-Raman study of the methanol to olefins reaction over SAPO-34: Spatiotemporal evolution monitored by different reactor approaches. Catalysis Today, 2019, 336, 203-209.	4.4	16
74	Comparing the Nature of Active Sites in Cu-loaded SAPO-34 and SSZ-13 for the Direct Conversion of Methane to Methanol. Catalysts, 2020, 10, 191.	3.5	16
75	Alkali Earth Metal Molybdates as Catalysts for the Selective Oxidation of Methanol to Formaldehydeâ€"Selectivity, Activity, and Stability. Catalysts, 2020, 10, 82.	3.5	15
76	Enhanced Catalytic Performance of Znâ€containing HZSMâ€5â€‰upon Selective Desilication in Ethane Dehydroaromatization Process. ChemCatChem, 2020, 12, 1519-1526.	3.7	14
77	Influence of Cu-speciation in mordenite on direct methane to methanol conversion: Multi-Technique characterization and comparison with NH3 selective catalytic reduction of NOx. Catalysis Today, 2021, 369, 105-111.	4.4	14
78	Mapping the coke formation within a zeolite catalyst extrudate in space and time by operando computed X-ray diffraction tomography. Journal of Catalysis, 2021, 401, 1-6.	6.2	14
79	Stability of Iron-Molybdate Catalysts for Selective Oxidation of Methanol to Formaldehyde: Influence of Preparation Method. Catalysis Letters, 2020, 150, 1434-1444.	2.6	13
80	Deactivation of a CoMo Catalyst during Catalytic Hydropyrolysis of Biomass. Part 1. Product Distribution and Composition. Energy & Fuels, 2019, 33, 12374-12386.	5.1	11
81	Deactivation of a CoMo Catalyst during Catalytic Hydropyrolysis of Biomass. Part 2. Characterization of the Spent Catalysts and Char. Energy & Fuels, 2019, 33, 12387-12402.	5.1	10
82	Hierarchical Vanadia Model Catalysts for Ammonia Selective Catalytic Reduction. Topics in Catalysis, 2017, 60, 1631-1640.	2.8	9
83	Cu-Exchanged Ferrierite Zeolite for the Direct CH4 to CH3OH Conversion: Insights on Cu Speciation from X-Ray Absorption Spectroscopy. Topics in Catalysis, 2019, 62, 712-723.	2.8	9
84	Synthesis of ZSM-23 (MTT) zeolites with different crystal morphology and intergrowths: effects on the catalytic performance in the conversion of methanol to hydrocarbons. Catalysis Science and Technology, 2019, 9, 6782-6792.	4.1	7
85	Vanadia-Based Catalysts for the Sulfur Dioxide Oxidation Studied <i>In Situ</i> by Transmission Electron Microscopy and Raman Spectroscopy. Journal of Physical Chemistry C, 2017, 121, 3350-3364.	3.1	6
86	The role of platinum on the NO_x storage and desorption behavior of ceria: an online FT-IR study combined with <i>in situ</i> Raman and UV-vis spectroscopy. Physical Chemistry Chemical Physics, 2021, 23, 1874-1887.	2.8	6
87	From Catalytic Test Reaction to Modern Chemical Descriptors in Zeolite Catalysis Research. Chemie-Ingenieur-Technik, 2021, 93, 902-915.	0.8	5
88	Atomic-scale Dynamics in Catalysts for Sulfur Chemistry. Microscopy and Microanalysis, 2015, 21, 421-422.	0.4	0