Peter C Stair

List of Publications by Year
in descending order

108 papers	9,609 citations	38742 50 h-index	37204 96 g-index
114 all docs	114 docs citations	114 times ranked	11581 citing authors

#	Article	IF	Citations
1	Identification of active sites in CO oxidation and water-gas shift over supported Pt catalysts. Science, 2015, 350, 189-192.	12.6	948
2	Coking- and Sintering-Resistant Palladium Catalysts Achieved Through Atomic Layer Deposition. Science, 2012, 335, 1205-1208.	12.6	707
3	Catalyst Design with Atomic Layer Deposition. ACS Catalysis, 2015, 5, 1804-1825.	11.2	608
4	Catalytic Applications of Vanadium: A Mechanistic Perspective. Chemical Reviews, 2019, 119, 2128-2191.	47.7	323
5	Expanding applications of SERS through versatile nanomaterials engineering. Chemical Society Reviews, 2017, 46, 3886-3903.	38.1	316
6	FTIR Study of CO₂ Adsorption on Amine-Grafted SBA-15: Elucidation of Adsorbed Species. Journal of Physical Chemistry C, 2011, 115, 11540-11549.	3.1	285
7	Synthesis and Stabilization of Supported Metal Catalysts by Atomic Layer Deposition. Accounts of Chemical Research, 2013, 46, 1806-1815.	15.6	271
8	Resonance Raman and surface- and tip-enhanced Raman spectroscopy methods to study solid catalysts and heterogeneous catalytic reactions. Chemical Society Reviews, 2010, 39, 4820.	38.1	261
9	Atomic layer depositionâ€"Sequential self-limiting surface reactions for advanced catalyst â€œbottom-upâ€• synthesis. Surface Science Reports, 2016, 71, 410-472.	7.2	252
10	Design Strategies for the Molecular Level Synthesis of Supported Catalysts. Accounts of Chemical Research, 2012, 45, 206-214.	15.6	229
11	Vanadium-Node-Functionalized UiO-66: A Thermally Stable MOF-Supported Catalyst for the Gas-Phase Oxidative Dehydrogenation of Cyclohexene. ACS Catalysis, 2014, 4, 2496-2500.	11.2	206
12	Supported Ruâ^'Pt Bimetallic Nanoparticle Catalysts Prepared by Atomic Layer Deposition. Nano Letters, 2010, 10, 3047-3051.	9.1	205
13	Toward atomically-precise synthesis of supported bimetallic nanoparticles using atomic layer deposition. Nature Communications, 2014, 5, 3264.	12.8	181
14	On the Structure of Vanadium Oxide Supported on Aluminas:Â UV and Visible Raman Spectroscopy, UVâ^'Visible Diffuse Reflectance Spectroscopy, and Temperature-Programmed Reduction Studies. Journal of Physical Chemistry B, 2005, 109, 2793-2800.	2.6	167
15	Stabilization of Copper Catalysts for Liquidâ€Phase Reactions by Atomic Layer Deposition. Angewandte Chemie - International Edition, 2013, 52, 13808-13812.	13.8	162
16	Synthesis-Dependent First-Order Raman Scattering in SrTiO₃Nanocubes at Room Temperature. Chemistry of Materials, 2008, 20, 5628-5635.	6.7	159
17	Alumina Over-coating on Pd Nanoparticle Catalysts by Atomic Layer Deposition: Enhanced Stability and Reactivity. Catalysis Letters, 2011, 141, 512-517.	2.6	159
18	Controlled Growth of Platinum Nanoparticles on Strontium Titanate Nanocubes by Atomic Layer Deposition. Small, 2009, 5, 750-757.	10.0	158

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19	Propane Oxidation over Pt/SrTiO₃ Nanocuboids. ACS Catalysis, 2011, 1, 629-635.	11.2	153
20	Tandem In ₂ O ₃ -Pt/Al ₂ O ₃ catalyst for coupling of propane dehydrogenation to selective H ₂ combustion. Science, 2021, 371, 1257-1260.	12.6	148
21	An ultraviolet Raman spectroscopic study of coke formation in methanol to hydrocarbons conversion over zeolite H-MFI. Journal of Catalysis, 2003, 213, 39-46.	6.2	147
22	High-Resolution Distance Dependence Study of Surface-Enhanced Raman Scattering Enabled by Atomic Layer Deposition. Nano Letters, 2016, 16, 4251-4259.	9.1	136
23	Palladium Catalysts Synthesized by Atomic Layer Deposition for Methanol Decomposition. Chemistry of Materials, 2010, 22, 3133-3142.	6.7	135
24	Genesis and Evolution of Surface Species during Pt Atomic Layer Deposition on Oxide Supports Characterized by in Situ XAFS Analysis and Waterâ^'Gas Shift Reaction. Journal of Physical Chemistry C, 2010, 114, 9758-9771.	3.1	124
25	A Comparison of Ultraviolet and Visible Raman Spectra of Supported Metal Oxide Catalysts. Journal of Physical Chemistry B, 2001, 105, 8600-8606.	2.6	111
26	Porous Alumina Protective Coatings on Palladium Nanoparticles by Self-Poisoned Atomic Layer Deposition. Chemistry of Materials, 2012, 24, 2047-2055.	6.7	110
27	Shape-selective sieving layers on an oxide catalyst surface. Nature Chemistry, 2012, 4, 1030-1036.	13.6	110
28	Acidâ€Catalyzed Furfuryl Alcohol Polymerization: Characterizations of Molecular Structure and Thermodynamic Properties. ChemCatChem, 2011, 3, 1451-1458.	3.7	105
29	Ultraviolet Raman spectroscopy characterization of sulfated zirconia catalysts: fresh, deactivated and regenerated. Catalysis Letters, 1996, 36, 119-123.	2.6	97
30	Toward a Thermally Robust Operando Surface-Enhanced Raman Spectroscopy Substrate. Journal of Physical Chemistry C, 2007, 111, 16827-16832.	3.1	94
31	Subnanometer Palladium Particles Synthesized by Atomic Layer Deposition. ACS Catalysis, 2011, 1, 665-673.	11.2	93
32	Constructing Hierarchical Porous Zeolites via Kinetic Regulation. Journal of the American Chemical Society, 2015, 137, 11238-11241.	13.7	85
33	Surface Acidity and Properties of TiO₂/SiO₂ Catalysts Prepared by Atomic Layer Deposition: UVâ^'visible Diffuse Reflectance, DRIFTS, and Visible Raman Spectroscopy Studies. Journal of Physical Chemistry C, 2009, 113, 12412-12418.	3.1	82
34	Atomic Layer Deposition Overcoating: Tuning Catalyst Selectivity for Biomass Conversion. Angewandte Chemie - International Edition, 2014, 53, 12132-12136.	13.8	78
35	A methyl free radical source for use in surface studies. Review of Scientific Instruments, 1992, 63, 3930-3935.	1.3	76
36	Nano/Subnanometer Pd Nanoparticles on Oxide Supports Synthesized by AB-type and Low-Temperature ABC-type Atomic Layer Deposition: Growth and Morphology. Langmuir, 2010, 26, 16486-16495.	3.5	73

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37	Vibrational properties of levulinic acid and furan derivatives: Raman spectroscopy and theoretical calculations. Journal of Raman Spectroscopy, 2011, 42, 2069-2076.	2.5	71
38	Highly Efficient Activation, Regeneration, and Active Site Identification of Oxide-Based Olefin Metathesis Catalysts. ACS Catalysis, 2016, 6, 5740-5746.	11.2	71
39	First-Principles Predictions and in Situ Experimental Validation of Alumina Atomic Layer Deposition on Metal Surfaces. Chemistry of Materials, 2014, 26, 6752-6761.	6.7	68
40	Atomically Precise Strategy to a PtZn Alloy Nanocluster Catalyst for the Deep Dehydrogenation of n-Butane to 1,3-Butadiene. ACS Catalysis, 2018, 8, 10058-10063.	11.2	67
41	Highly Dispersed SiO_x/Al₂O₃ Catalysts Illuminate the Reactivity of Isolated Silanol Sites. Angewandte Chemie - International Edition, 2015, 54, 13346-13351.	13.8	66
42	Effect of Reactor Materials on the Properties of Titanium Oxide Nanotubes. ACS Catalysis, 2012, 2, 45-49.	11.2	62
43	UV Raman spectroscopic studies of V/Î¸-Al2O3 catalysts in butane dehydrogenation. Journal of Catalysis, 2006, 237, 220-229.	6.2	60
44	Surface Carbon as a Reactive Intermediate in Dry Reforming of Methane to Syngas on a 5% Ni/MnO Catalyst. ACS Catalysis, 2018, 8, 8739-8750.	11.2	60
45	Synthesis-Dependent Atomic Surface Structures of Oxide Nanoparticles. Physical Review Letters, 2013, 111, 156101.	7.8	58
46	Chemoselective Hydrogenation with Supported Organoplatinum(IV) Catalyst on Zn(II)-Modified Silica. Journal of the American Chemical Society, 2018, 140, 3940-3951.	13.7	56
47	Raman Spectroscopic Study of V/Î¸-Al2O3Catalysts:â€‰ Quantification of Surface Vanadia Species and Their Structure Reduced by Hydrogen. Journal of Physical Chemistry C, 2007, 111, 16460-16469.	3.1	53
48	Chiral Co(II) Metalâ€“Organic Framework in the Heterogeneous Catalytic Oxidation of Alkenes under Aerobic and Anaerobic Conditions. ACS Catalysis, 2014, 4, 1032-1039.	11.2	53
49	Reactivity of a Carbon-Supported Single-Site Molybdenum Dioxo Catalyst for Biodiesel Synthesis. ACS Catalysis, 2016, 6, 6762-6769.	11.2	53
50	A kinetic study of vapor-phase cyclohexene epoxidation by H2O2 over mesoporous TS-1. Journal of Catalysis, 2015, 326, 107-115.	6.2	51
51	Bacterially Produced Manganese Oxide and Todorokite:Â UV Raman Spectroscopic Comparison. Journal of Physical Chemistry B, 2004, 108, 17019-17026.	2.6	45
52	Synthesis Strategy for Protected Metal Nanoparticles. Journal of Physical Chemistry C, 2012, 116, 7748-7756.	3.1	44
53	Synthesis-Dependent Surface Acidity and Structure of SrTiO₃Nanoparticles. Journal of Physical Chemistry C, 2010, 114, 11056-11067.	3.1	38
54	Morphology and CO Oxidation Activity of Pd Nanoparticles on SrTiO₃ Nanopolyhedra. ACS Catalysis, 2018, 8, 4751-4760.	11.2	38

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55	Influence of absorption on quantitative analysis in Raman spectroscopy. Catalysis Today, 2006, 113, 40-47.	4.4	36
56	The adsorption and photochemistry of CD3I on TiO2(110). Journal of Chemical Physics, 1994, 100, 4615-4625.	3.0	35
57	Advanced synthesis for advancing heterogeneous catalysis. Journal of Chemical Physics, 2008, 128, 182507.	3.0	35
58	Role of Cr³⁺/Cr⁶⁺ redox in chromium-substituted Li₂MnO₃Â·LiNi_{1/2}Mn_{1/2}O₂ layered composite cathodes: electrochemistry and voltage fade. Journal of Materials Chemistry A, 2015, 3, 9915-9924.	10.3	35
59	Synthesis of Supported Catalysts by Atomic Layer Deposition. Topics in Catalysis, 2012, 55, 93-98.	2.8	34
60	Chemoselective Hydrogenation of Crotonaldehyde Catalyzed by an Au@ZIFâ€8 Composite. ChemCatChem, 2016, 8, 855-860.	3.7	34
61	Identification of Dimeric Methylalumina Surface Species during Atomic Layer Deposition Using Operando Surface-Enhanced Raman Spectroscopy. Journal of the American Chemical Society, 2017, 139, 2456-2463.	13.7	34
62	Stabilizing Single-Atom and Small-Domain Platinum via Combining Organometallic Chemisorption and Atomic Layer Deposition. Organometallics, 2017, 36, 818-828.	2.3	34
63	Coking Can Enhance Product Yields in the Dry Reforming of Methane. ACS Catalysis, 2022, 12, 8352-8362.	11.2	34
64	Wavelength dependence of the photodissociation and photodesorption of CD3I adsorbed on the TiO2(110) surface. Journal of Chemical Physics, 1994, 100, 4626-4636.	3.0	31
65	Analysis of TiO₂ Atomic Layer Deposition Surface Chemistry and Evidence of Propene Oligomerization Using Surface-Enhanced Raman Spectroscopy. Journal of the American Chemical Society, 2019, 141, 414-422.	13.7	31
66	Atomic Layer Deposition Overcoating Improves Catalyst Selectivity and Longevity in Propane Dehydrogenation. ACS Catalysis, 2020, 10, 13957-13967.	11.2	30
67	Alkaline-earth metal-oxide overlayers on TiO₂: application toward CO₂ photoreduction. Catalysis Science and Technology, 2016, 6, 7885-7895.	4.1	29
68	Probing the Chemistry of Alumina Atomic Layer Deposition Using Operando Surface-Enhanced Raman Spectroscopy. Journal of Physical Chemistry C, 2016, 120, 3822-3833.	3.1	28
69	Identifying Boron Active Sites for the Oxidative Dehydrogenation of Propane. ACS Catalysis, 2021, 11, 9370-9376.	11.2	27
70	Supported Aluminum Catalysts for Olefin Hydrogenation. ACS Catalysis, 2017, 7, 689-694.	11.2	25
71	A photofragment spectrometer for studying photodissociation of molecules adsorbed on surfaces: The 257â€nm photolysis of CD3I on MgO(100). Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1991, 9, 1820-1822.	2.1	24
72	UV-induced desorption of CH3X (X=I and Br)/TiO2(110). Journal of Chemical Physics, 1998, 108, 5080-5088.	3.0	23

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73	Efficient catalytic greenhouse gas-free hydrogen and aldehyde formation from aqueous alcohol solutions. Energy and Environmental Science, 2017, 10, 1558-1562.	30.8	23
74	Surface Chemistry of Methyl Radicals on O/Mo(100) Surfacesâ€. Journal of Physical Chemistry B, 2000, 104, 3035-3043.	2.6	21
75	Direct Synthesis of Low-Coordinate Pd Catalysts Supported on SiO₂ via Surface Organometallic Chemistry. ACS Catalysis, 2016, 6, 8380-8388.	11.2	21
76	Perfluoroalkylether reactions on iron and oxygen covered iron surfaces studied using xâ€ray photoelectron spectroscopy and secondary ion mass spectrometry. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1991, 9, 649-652.	2.1	20
77	Pulsed laserâ€induced electron and positiveâ€ion emission from Cu(100) under ultrahighâ€vacuum conditions near the threshold for surface damage. Journal of Applied Physics, 1991, 69, 3472-3479.	2.5	20
78	Photochemistry in CH3I Adlayers on TiO2(110) Studied with Postirradiation Thermal Desorption. Langmuir, 1998, 14, 4156-4161.	3.5	20
79	Epitaxial Stabilization of Face Selective Catalysts. Topics in Catalysis, 2013, 56, 1829-1834.	2.8	20
80	Catalyst synthesis and evaluation using an integrated atomic layer deposition synthesisâ€“catalysis testing tool. Review of Scientific Instruments, 2015, 86, 084103.	1.3	20
81	Understanding Pore Formation in ALD Alumina Overcoats. ACS Applied Materials & Interfaces, 2020, 12, 20331-20343.	8.0	20
82	The surface chemistry of zinc dialkyldithiophosphate, an antiwear additive, on oxidized iron and steel foils. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1988, 6, 971-974.	2.1	18
83	Methanol Oxidation to Formate on ALD-Prepared VO_x/Î¸-Al₂O₃ Catalysts: A Mechanistic Study. Journal of Physical Chemistry C, 2017, 121, 26794-26805.	3.1	17
84	Replication of SMSI via ALD: TiO2 Overcoats Increase Pt-Catalyzed Acrolein Hydrogenation Selectivity. Catalysis Letters, 2018, 148, 2223-2232.	2.6	17
85	Efficient carbon-supported heterogeneous molybdenum-dioxo catalyst for chemoselective reductive carbonyl coupling. Catalysis Science and Technology, 2017, 7, 2165-2169.	4.1	15
86	Photoreactions of methyl iodide multilayers on the TiO2(110) surface. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1996, 14, 1557-1561.	2.1	14
87	Multiwavelength Raman Spectroscopic Characterization of Alumina-Supported Molybdenum Oxide Prepared by Vapor Deposition. Topics in Catalysis, 2017, 60, 1618-1630.	2.8	13
88	A simple cryogenic ultrahigh vacuum manipulator providing azimuthal rotation. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1991, 9, 2410-2411.	2.1	11
89	Evidence for Copper Dimers in Low-Loaded CuO_x/SiO₂ Catalysts for Cyclohexane Oxidative Dehydrogenation. ACS Catalysis, 2018, 8, 9775-9789.	11.2	11
90	Interactions of VOx Species with Amorphous TiO2 Domains on ALD-Derived Alumina-Supported Materials. Journal of Physical Chemistry C, 2019, 123, 7988-7999.	3.1	11

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91	Decomposition pathway for model fluorinated ethers on the clean iron surface. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1992, 10, 2704-2708.	2.1	10
92	Alternative Low-Pressure Surface Chemistry of Titanium Tetraisopropoxide on Oxidized Molybdenum. Journal of Physical Chemistry C, 2014, 118, 29361-29369.	3.1	10
93	Influence of the Metal Oxide Substrate Structure on Vanadium Oxide Monomer Formation. Topics in Catalysis, 2014, 57, 177-187.	2.8	10
94	Mechanistic and Adsorption Studies of Relevance to Photocatalysts on Titanium Grafted Mesoporous Silicalites. Catalysis Letters, 2011, 141, 1057-1066.	2.6	9
95	Structure Sensitivity of Acrolein Hydrogenation by Platinum Nanoparticles on Ba x Sr 1â^' x TiO 3 Nanocuboids. ChemCatChem, 2018, 10, 632-641.	3.7	8
96	Catalyst Deactivation by Carbon Deposition: The Remarkable Case of Nickel Confined by Atomic Layer Deposition. ChemCatChem, 2021, 13, 2988-3000.	3.7	8
97	Polymorphism in Li2Mo4O13 Revisited. Crystal Growth and Design, 2007, 7, 521-525.	3.0	7
98	Kinetic Isoconversion Loop Catalysis: A Reactor Operation Mode To Investigate Slow Catalyst Deactivation Processes, with Ni/Al2O3for the Dry Reforming of Methane. Industrial & Engineering Chemistry Research, 2019, 58, 2481-2491.	3.7	7
99	Thermal decomposition of lubricant oil adsorbed on gold and oxidized iron foils. Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films, 1987, 5, 1036-1039.	2.1	6
100	The interface between heterogeneous and homogeneous catalysis. Topics in Catalysis, 2005, 34, 1-4.	2.8	6
101	In Situ Measurements of Lubricant Temperature and Pressure at a Sliding Contact. Journal of Physical Chemistry C, 2007, 111, 11314-11319.	3.1	5
102	Mechanistic Studies of the Oxidation of Cyclohexene to 2-Cyclohexen-1-one over ALD Prepared Titania Supported Vanadia. Journal of Physical Chemistry C, 2020, 124, 11844-11862.	3.1	3
103	Resonance Raman Spectroscopy -Î˜-Al2O3-Supported Vanadium Oxide Catalysts as an Illustrative Example. , 0, , 177-194.		2
104	Alkane Dehydrogenation over Vanadium and Chromium Oxides. , 0, , 595-612.		2
105	Submonolayer Is Enough: Switching Reaction Channels on Pt/SiO2 by Atomic Layer Deposition. Journal of Physical Chemistry C, 2021, 125, 18725-18733.	3.1	2
106	RÃ¼cktitelbild: Stabilization of Copper Catalysts for Liquid-Phase Reactions by Atomic Layer Deposition (Angew. Chem. 51/2013). Angewandte Chemie, 2013, 125, 14068-14068.	2.0	1
107	Acid Sites on Chemically Modified Molybdenum Surfaces. ACS Symposium Series, 1990, , 239-250.	0.5	0
108	Orientation of 1,1â€²-Bi-2-naphthol Grafted onto TiO₂. Journal of Physical Chemistry C, 2022, 126, 7980-7990.	3.1	0