Annette Trunschke

List of Publications by Year
in descending order

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122 papers	4,685 citations	87888 38 h-index	118850 62 g-index
137 all docs	137 docs citations	137 times ranked	4816 citing authors

#	Article	IF	Citations
1	Methane selective oxidation on metal oxide catalysts at low temperatures with O2 using an NO/NO2 oxygen atom shuttle. Journal of Catalysis, 2022, 408, 401-412.	6.2	10
2	Oxygen Exchange on Vanadium Pentoxide. Journal of Physical Chemistry C, 2022, 126, 3443-3456.	3.1	8
3	Transition-Metal-Doping of CaO as Catalyst for the OCM Reaction, a Reality Check. Frontiers in Chemistry, 2022, 10, 768426.	3.6	7
4	Towards automation of operando experiments: a case study in contactless conductivity measurements. , 2022, 1, 241-254.		5
5	Prospects and challenges for autonomous catalyst discovery viewed from an experimental perspective. Catalysis Science and Technology, 2022, 12, 3650-3669.	4.1	9
6	Combinatorial optimization and synthesis of multiple promoted MoVNbTe catalysts for oxidation of propane to acrylic acid. Catalysis Today, 2021, 363, 45-54.	4.4	21
7	Nanoparticles Supported on Subâ€Nanometer Oxide Films: Scaling Model Systems to Bulk Materials. Angewandte Chemie - International Edition, 2021, 60, 5890-5897.	13.8	14
8	Nanopartikel auf subnanometer dÃ¼nnen oxidischen Filmen: Skalierung von Modellsystemen. Angewandte Chemie, 2021, 133, 5954-5961.	2.0	2
9	Enhancing the Catalytic Activity of Palladium Nanoparticles via Sandwich-Like Confinement by Thin Titanate Nanosheets. ACS Catalysis, 2021, 11, 2754-2762.	11.2	13
10	A Career in Catalysis: Robert SchlÃ¶gl. ACS Catalysis, 2021, 11, 6243-6260.	11.2	2
11	The Influence of the Chemical Potential on Defects and Function of Perovskites in Catalysis. Frontiers in Chemistry, 2021, 9, 746229.	3.6	4
12	Materials genes of heterogeneous catalysis from clean experiments and artificial intelligence. MRS Bulletin, 2021, 46, 1016-1026.	3.5	26
13	Compositional Decoupling of Bulk and Surface in Open-Structured Complex Mixed Oxides. Journal of Physical Chemistry C, 2020, 124, 23069-23077.	3.1	7
14	Selectivity boost in partial hydrogenation of acetylene via atomic dispersion of platinum over ceria. Catalysis Science and Technology, 2020, 10, 7471-7475.	4.1	4
15	Towards Experimental Handbooks in Catalysis. Topics in Catalysis, 2020, 63, 1683-1699.	2.8	28
16	Tungstenâ€“niobium oxide bronzes: a bulk and surface structural study. Dalton Transactions, 2020, 49, 13282-13293.	3.3	10
17	Fluctuating Storage of the Active Phase in a Mnâ€Na₂WO₄/SiO₂ Catalyst for the Oxidative Coupling of Methane. Angewandte Chemie - International Edition, 2020, 59, 14921-14926.	13.8	50
18	Fluctuating Storage of the Active Phase in a Mnâ€Na₂WO₄/SiO₂ Catalyst for the Oxidative Coupling of Methane. Angewandte Chemie, 2020, 132, 15031-15036.	2.0	19

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19	Surface Conditions That Constrain Alkane Oxidation on Perovskites. ACS Catalysis, 2020, 10, 7007-7020.	11.2	37
20	Site specific and localized structural displacements in open structured multimetallic oxides. Nanoscale, 2020, 12, 6759-6766.	5.6	8
21	Catalytic activity, water formation, and sintering: Methane activation over Co- and Fe-doped MgO nanocrystals. Journal of Chemical Physics, 2020, 152, 074713.	3.0	11
22	Inducing synergy in bimetallic RhNi catalysts for CO2 methanation by galvanic replacement. Applied Catalysis B: Environmental, 2020, 277, 119029.	20.2	41
23	Innentitelbild: Atomicâ€Scale Observation of the Metalâ€“Promoter Interaction in Rhâ€Based Syngasâ€Upgrading Catalysts (Angew. Chem. 26/2019). Angewandte Chemie, 2019, 131, 8688-8688.	2.0	0
24	Acid sites on silica-supported molybdenum oxides probed by ammonia adsorption: Experiment and theory. Molecular Catalysis, 2019, 478, 110580.	2.0	21
25	How to control selectivity in alkane oxidation?. Chemical Science, 2019, 10, 2429-2443.	7.4	28
26	Atomicâ€Scale Observation of the Metalâ€“Promoter Interaction in Rhâ€Based Syngasâ€Upgrading Catalysts. Angewandte Chemie - International Edition, 2019, 58, 8709-8713.	13.8	35
27	Atomicâ€Scale Observation of the Metalâ€“Promoter Interaction in Rhâ€Based Syngasâ€Upgrading Catalysts. Angewandte Chemie, 2019, 131, 8801-8805.	2.0	1
28	Single-Site Vanadyl Species Isolated within Molybdenum Oxide Monolayers in Propane Oxidation. ACS Catalysis, 2019, 9, 4875-4886.	11.2	28
29	Electronic and Dielectric Properties of MoV-Oxide (M1 Phase) under Alkane Oxidation Conditions. Journal of Physical Chemistry C, 2019, 123, 13269-13282.	3.1	20
30	Structural Characterization of Molybdenum Oxide Nanoclusters Using Ion Mobility Spectrometryâ€“Mass Spectrometry and Infrared Action Spectroscopy. Journal of Physical Chemistry C, 2019, 123, 7845-7853.	3.1	20
31	Oxygen Activation in Oxidative Coupling of Methane on Calcium Oxide. Journal of Physical Chemistry C, 2019, 123, 8018-8026.	3.1	16
32	From a Molecular Singleâ€Source Precursor to a Selective Highâ€Performance RhMnO_x Catalyst for the Conversion of Syngas to Ethanol. ChemCatChem, 2019, 11, 885-892.	3.7	14
33	Operando Electrical Conductivity and Complex Permittivity Study on Vanadia Oxidation Catalysts. Journal of Physical Chemistry C, 2019, 123, 8005-8017.	3.1	17
34	Effect of Temperature and pH on Phase Transformations in Citric Acid Mediated Hydrothermal Growth of Tungsten Oxide. European Journal of Inorganic Chemistry, 2018, 2018, 917-923.	2.0	23
35	Insights into structure and dynamics of (Mn,Fe)O_x-promoted Rh nanoparticles. Faraday Discussions, 2018, 208, 207-225.	3.2	27
36	Inhibition of the photoinduced structural phase transition in the excitonic insulator <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:msub><mml:mi>Ta</mml:mi><mml:mn>2</mml:mn></mml:msub></mml:r Physical Review B, 2018, 97, .	3.2	35

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37	Influence of Steam on a Vanadyl Pyrophosphate Catalyst During Propane Oxidation. Journal of Physical Chemistry B, 2018, 122, 695-704.	2.6	9
38	Comparative study of the strongest solid Lewis acids known: ACF and HS-AlF₃. Dalton Transactions, 2018, 47, 16461-16473.	3.3	18
39	Constructing A Rational Kinetic Model of the Selective Propane Oxidation Over A Mixed Metal Oxide Catalyst. Catalysts, 2018, 8, 330.	3.5	12
40	Stepwise Methaneâ€toâ€Methanol Conversion on CuO/SBAâ€15. Chemistry - A European Journal, 2018, 24, 12592-12599.	3.3	41
41	Microwave-Assisted Coprecipitation Synthesis of LaCoO3 Nanoparticles and Their Catalytic Activity for Syngas Production by Partial Oxidation of Methane. Frontiers in Energy Research, 2018, 6, .	2.3	8
42	Theory as a driving force to understand reactions on nanoparticles: general discussion. Faraday Discussions, 2018, 208, 147-185.	3.2	3
43	Control of catalytic nanoparticle synthesis: general discussion. Faraday Discussions, 2018, 208, 471-495.	3.2	3
44	The challenges of characterising nanoparticulate catalysts: general discussion. Faraday Discussions, 2018, 208, 339-394.	3.2	5
45	Restructuring of silica supported vanadia during propane oxidative dehydrogenation studied by combined synchrotron radiation based in situ soft X-ray absorption and photoemission. Journal of Lithic Studies, 2017, 3, 104-111.	0.5	4
46	Platinum Group Metal Phosphides as Heterogeneous Catalysts for the Gas-Phase Hydroformylation of Small Olefins. ACS Catalysis, 2017, 7, 3584-3590.	11.2	40
47	The Impact of the Bulk Structure on Surface Dynamics of Complex Moâ€“V-based Oxide Catalysts. ACS Catalysis, 2017, 7, 3061-3071.	11.2	53
48	Solid-State Ion-Exchanged Cu/Mordenite Catalysts for the Direct Conversion of Methane to Methanol. ACS Catalysis, 2017, 7, 1403-1412.	11.2	102
49	Structural Complexity in Heterogeneous Catalysis: Cataloging Local Nanostructures. Journal of Physical Chemistry C, 2017, 121, 24093-24103.	3.1	22
50	Isotope Studies in Oxidation of Propane over Vanadium Oxide. ChemCatChem, 2017, 9, 3434-3434.	3.7	3
51	IR-Spectroscopic Study on the Interface of Cu-Based Methanol Synthesis Catalysts: Evidence for the Formation of a ZnO Overlayer. Topics in Catalysis, 2017, 60, 1735-1743.	2.8	89
52	Experimental Study and Modeling of the UVâ€“Vis and Infrared Spectra of the [VO(O₂)Hheida]^{â^’} Complex Dissolved in Water. Journal of Physical Chemistry A, 2017, 121, 7157-7164.	2.5	5
53	Isotope Studies in Oxidation of Propane over Vanadium Oxide. ChemCatChem, 2017, 9, 3446-3455.	3.7	20
54	A combined experimental and theoretical spectroscopic protocol for determination of the structure of heterogeneous catalysts: developing the information content of the resonance Raman spectra of M1 MoVO_x. Chemical Science, 2017, 8, 6338-6353.	7.4	13

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55	Functional Analysis of Catalysts for Lower Alkane Oxidation. ChemCatChem, 2017, 9, 573-585.	3.7	29
56	Selective Alkane Oxidation by Manganese Oxide: Site Isolation of MnO_x Chains at the Surface of MnWO₄ Nanorods. Angewandte Chemie - International Edition, 2016, 55, 4092-4096.	13.8	39
57	Selektive Alkanoxidation an Manganoxid: isolierte, kettenfÃ¶rmige MnO_xâ€Zentren an der OberflÃche von MnWO₄â€NanostÃbchen. Angewandte Chemie, 2016, 128, 4161-4165.	2.0	3
58	High-Temperature Stable Ni Nanoparticles for the Dry Reforming of Methane. ACS Catalysis, 2016, 6, 7238-7248.	11.2	116
59	Higher Alcohol Synthesis Over Rh Catalysts: Conditioning of Rh/N-CNTs by Co and Mn Entrapped in the Support. Catalysis Letters, 2016, 146, 2417-2424.	2.6	11
60	Acidâ€“Base Properties of N-Doped Carbon Nanotubes: A Combined Temperature-Programmed Desorption, X-ray Photoelectron Spectroscopy, and 2-Propanol Reaction Investigation. Chemistry of Materials, 2016, 28, 6826-6839.	6.7	95
61	Designing new catalysts: synthesis of new active structures: general discussion. Faraday Discussions, 2016, 188, 131-159.	3.2	4
62	Catalyst design from theory to practice: general discussion. Faraday Discussions, 2016, 188, 279-307.	3.2	2
63	Hydrothermal synthesis of bi-functional nanostructured manganese tungstate catalysts for selective oxidation. Faraday Discussions, 2016, 188, 99-113.	3.2	20
64	A unified view on heterogeneous and homogeneous catalysts through a combination of spectroscopy and quantum chemistry. Faraday Discussions, 2016, 188, 181-197.	3.2	37
65	Modification of the carbide microstructure by N- and S-functionalization of the support in Mo_xC/CNT catalysts. Catalysis Science and Technology, 2016, 6, 3468-3475.	4.1	10
66	Active Sites in Olefin Metathesis over Supported Molybdena Catalysts. ChemCatChem, 2015, 7, 4059-4065.	3.7	31
67	Der elektronische Faktor in der Alkanoxidationskatalyse. Angewandte Chemie, 2015, 127, 2965-2969.	2.0	4
68	Structure sensitivity of the oxidative activation of methane over MgO model catalysts: II. Nature of active sites and reaction mechanism. Journal of Catalysis, 2015, 329, 574-587.	6.2	55
69	Structure sensitivity of the oxidative activation of methane over MgO model catalysts: I. Kinetic study. Journal of Catalysis, 2015, 329, 560-573.	6.2	49
70	The impact of steam on the electronic structure of the selective propane oxidation catalyst MoVTeNb oxide (orthorhombic M1 phase). Physical Chemistry Chemical Physics, 2015, 17, 8983-8993.	2.8	31
71	The Electronic Factor in Alkane Oxidation Catalysis. Angewandte Chemie - International Edition, 2015, 54, 2922-2926.	13.8	42
72	Direct Imaging of Octahedral Distortion in a Complex Molybdenum Vanadium Mixed Oxide. Angewandte Chemie - International Edition, 2015, 54, 6828-6831.	13.8	25

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73	Sites for Methane Activation on Lithiumâ€Doped Magnesium Oxide Surfaces. Angewandte Chemie - International Edition, 2014, 53, 8774-8778.	13.8	152
74	Speciation of Molybdates under Hydrothermal Conditions. Zeitschrift Fur Anorganische Und Allgemeine Chemie, 2014, 640, 2730-2736.	1.2	22
75	Surface roughness effects in the catalytic behavior of vanadia supported on SBA-15. Journal of Catalysis, 2014, 312, 170-178.	6.2	43
76	The M1 Phase of MoVTeNbO as a Catalyst for Olefin Metathesis and Isomerization. ChemCatChem, 2014, 6, 3338-3341.	3.7	4
77	High performance (VOx)nâ€“(TiOx)m/SBA-15 catalysts for the oxidative dehydrogenation of propane. Catalysis Science and Technology, 2014, 4, 786.	4.1	50
78	Ambient-Pressure Soft X-ray Absorption Spectroscopy of a Catalyst Surface in Action: Closing the Pressure Gap in the Selective n-Butane Oxidation over Vanadyl Pyrophosphate. Journal of Physical Chemistry C, 2014, 118, 20405-20412.	3.1	31
79	The reaction network in propane oxidation over phase-pure MoVTeNb M1 oxide catalysts. Journal of Catalysis, 2014, 311, 369-385.	6.2	76
80	CNTâ€Supported Mo_xC Catalysts: Effect of Loading and Carburization Parameters. ChemCatChem, 2013, 5, 2296-2305.	3.7	33
81	Towards Physical Descriptors of Active and Selective Catalysts for the Oxidation of nâ€Butane to Maleic Anhydride. ChemCatChem, 2013, 5, 2318-2329.	3.7	29
82	The Impact of V Doping on the Carbothermal Synthesis of Mesoporous Mo Carbides. Chemistry of Materials, 2013, 25, 3124-3136.	6.7	20
83	The model oxidation catalyst Î±-V2O5: insights from contactless in situ microwave permittivity and conductivity measurements. Applied Physics A: Materials Science and Processing, 2013, 112, 289-296.	2.3	18
84	How Strain Affects the Reactivity of Surface Metal Oxide Catalysts. Angewandte Chemie - International Edition, 2013, 52, 13553-13557.	13.8	124
85	Methane Coupling over Magnesium Oxide: How Doping Can Work. Angewandte Chemie - International Edition, 2013, 52, 11381-11384.	13.8	55
86	Quantum-Chemical Investigation of Hydrocarbon Oxidative Dehydrogenation over Spin-Active Carbon Catalyst Clusters. Journal of Physical Chemistry C, 2013, 117, 6225-6234.	3.1	30
87	Multifunctionality of Crystalline MoV(TeNb) M1 Oxide Catalysts in Selective Oxidation of Propane and Benzyl Alcohol. ACS Catalysis, 2013, 3, 1103-1113.	11.2	50
88	First principles calculations of the structure and V L-edge X-ray absorption spectra of V2O5 using local pair natural orbital coupled cluster theory and spinâ€orbit coupled configuration interaction approaches. Physical Chemistry Chemical Physics, 2013, 15, 7260.	2.8	137
89	Work Function, Band Bending, and Microwave Conductivity Studies on the Selective Alkane Oxidation Catalyst MoVTeNb Oxide (Orthorhombic M1 Phase) under Operation Conditions. Journal of Physical Chemistry C, 2013, 117, 26988-26997.	3.1	44
90	Higher Alcohol Synthesis: Product Analysis Using the Concept of Effective Carbon Numbers. Chemie-Ingenieur-Technik, 2013, 85, 1290-1293.	0.8	3

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91	Carbon Dynamics on the Molybdenum Carbide Surface during Catalytic Propane Dehydrogenation. Chemistry - A European Journal, 2013, 19, 16938-16945.	3.3	27
92	A New Way of Probing Reaction Networks: Analyzing Multidimensional Parameter Space. Combinatorial Chemistry and High Throughput Screening, 2012, 15, 161-169.	1.1	14
93	Partial oxidation of ethanol on vanadia catalysts on supporting oxides with different redox properties compared to propane. Journal of Catalysis, 2012, 296, 120-131.	6.2	138
94	The microwave cavity perturbation technique for contact-free and in situ electrical conductivity measurements in catalysis and materials science. Physical Chemistry Chemical Physics, 2012, 14, 1302-1312.	2.8	55
95	In Situ Generation of Active Sites in Olefin Metathesis. Journal of the American Chemical Society, 2012, 134, 11462-11473.	13.7	134
96	Resourceâ€Efficient Alkane Selective Oxidation on New Crystalline Solids: Searching for Novel Catalyst Materials. Chemie-Ingenieur-Technik, 2012, 84, 1766-1779.	0.8	15
97	Topology of silica supported vanadiumâ€“titanium oxide catalysts for oxidative dehydrogenation of propane. Catalysis Science and Technology, 2012, 2, 1346.	4.1	35
98	Aiding the Selfâ€Assembly of Supramolecular Polyoxometalates under Hydrothermal Conditions To Give Precursors of Complex Functional Oxides. Angewandte Chemie - International Edition, 2012, 51, 7194-7197.	13.8	39
99	The Intimate Relationship between Bulk Electronic Conductivity and Selectivity in the Catalytic Oxidation of nâ€Butane. Angewandte Chemie - International Edition, 2012, 51, 6246-6250.	13.8	36
100	Unusual Phase Evolution in MoVTeNb Oxide Catalysts Prepared by a Novel Acrylamide-Gelation Route. ChemCatChem, 2012, 4, 495-503.	3.7	12
101	In-situ X-ray diffraction study of phase crystallization from an amorphous MoVTeNb oxide catalyst precursor. Catalysis Communications, 2012, 18, 60-62.	3.3	10
102	Surface chemistry of phase-pure M1 MoVTeNb oxide during operation in selective oxidation of propane to acrylic acid. Journal of Catalysis, 2012, 285, 48-60.	6.2	149
103	Cation Ordering in Natural and Synthetic (Cu_{1â€“x}Zn_x)₂CO₃(OH)₂ and (Cu_{1â€“x}Zn_x)₅(CO₃)₂(OH)₆. Journal of Physical Chemistry A, 2011, 115, 9954-9968.	2.5	18
104	Synthesis of MoVTeNb Oxide Catalysts with Tunable Particle Dimensions. ChemCatChem, 2011, 3, 1597-1606.	3.7	45
105	Calorimetric Study of Propane and Propylene Adsorption on the Active Surface of Multiwalled Carbon Nanotube Catalysts. ChemPhysChem, 2011, 12, 2709-2713.	2.1	12
106	Oxygen Insertion Catalysis by sp² Carbon. Angewandte Chemie - International Edition, 2011, 50, 10226-10230.	13.8	118
107	Understanding the complexity of a catalyst synthesis: Co-precipitation of mixed Cu,Zn,Al hydroxycarbonate precursors for Cu/ZnO/Al2O3 catalysts investigated by titration experiments. Applied Catalysis A: General, 2011, 392, 93-102.	4.3	91
108	Chapter 4. Propane-Selective Oxidation to Acrylic Acid. RSC Nanoscience and Nanotechnology, 2011, , 56-95.	0.2	20

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109	The Potential of Microstructural Optimization in Metal/Oxide Catalysts: Higher Intrinsic Activity of Copper by Partial Embedding of Copper Nanoparticles. ChemCatChem, 2010, 2, 816-818.	3.7	49
110	Realâ€Space Observation of Surface Termination of a Complex Metal Oxide Catalyst. Angewandte Chemie - International Edition, 2010, 49, 6084-6089.	13.8	46
111	Role of dispersion of vanadia on SBA-15 in the oxidative dehydrogenation of propane. Catalysis Today, 2010, 157, 137-142.	4.4	62
112	Dynamics of the MoVTeNb Oxide M1 Phase in Propane Oxidation. Journal of Physical Chemistry C, 2010, 114, 1912-1921.	3.1	92
113	Minerals as Model Compounds for Cu/ZnO Catalyst Precursors: Structural and Thermal Properties and IR Spectra of Mineral and Synthetic (Zincian) Malachite, Rosasite and Aurichalcite and a Catalyst Precursor Mixture. European Journal of Inorganic Chemistry, 2009, 2009, 1347-1357.	2.0	108
114	Microstructural characterization of Cu/ZnO/Al2O3 catalysts for methanol steam reformingâ€”A comparative study. Applied Catalysis A: General, 2008, 348, 153-164.	4.3	105
115	Role of Lattice Strain and Defects in Copper Particles on the Activity of Cu/ZnO/Al₂O₃ Catalysts for Methanol Synthesis. Angewandte Chemie - International Edition, 2007, 46, 7324-7327.	13.8	223
116	In situ spectroscopic investigation of activation, start-up and deactivation of promoted sulfated zirconia catalysts. Catalysis Today, 2006, 116, 121-131.	4.4	24
117	Surface texturing of Moâ€“Vâ€“Teâ€“Nbâ€“O x selective oxidation catalysts. Topics in Catalysis, 2006, 38, 51-58.	2.8	60
118	Non-Isothermal NOxStorage/Release over Manganese Based Traps: Mechanistic Considerations. Topics in Catalysis, 2004, 30/31, 193-198.	2.8	3
119	Characterization and Catalytic Behavior of Potassium-Modified ZrO₂Base Catalysts. Catalysis Letters, 2004, 92, 175-180.	2.6	9
120	Title is missing!. Topics in Catalysis, 2002, 19, 215-223.	2.8	17
121	In situ FTIR studies of high-temperature adsorption of hydrogen on zirconia. Journal of the Chemical Society, Faraday Transactions, 1995, 91, 4441.	1.7	58
122	Relativistische Modellrechnungen (REX) zur Chemisorption von Kohlenmonoxid an der Platin(111)â€OberflÃche. Zeitschrift FÃ¼r Chemie, 1986, 26, 416-417.	0.0	1