

# Martin Votsmeier

## List of Publications by Year in descending order

Source: <https://exaly.com/author-pdf/4235721/publications.pdf>

Version: 2024-02-01

79  
papers

2,600  
citations

201674

27  
h-index

214800

47  
g-index

82  
all docs

82  
docs citations

82  
times ranked

2008  
citing authors

#	ARTICLE	IF	CITATIONS
1	Measurements and modeling of acetone laser-induced fluorescence with implications for temperature-imaging diagnostics. <i>Applied Optics</i> , 1998, 37, 4963.	2.1	228
2	Tuning the Pt/CeO <sub>2</sub> Interface by in Situ Variation of the Pt Particle Size. <i>ACS Catalysis</i> , 2018, 8, 4800-4811.	11.2	157
3	Unified mechanistic model for Standard SCR, Fast SCR, and NO <sub>2</sub> SCR over a copper chabazite catalyst. <i>Applied Catalysis B: Environmental</i> , 2018, 222, 76-87.	20.2	134
4	Collisional deactivation of vibrationally highly excited azulene in compressed liquids and supercritical fluids. <i>Journal of Chemical Physics</i> , 1996, 105, 3121-3131.	3.0	128
5	The effect of washcoat geometry on mass transfer in monolith reactors. <i>Chemical Engineering Science</i> , 2004, 59, 3169-3181.	3.8	110
6	Dual layer automotive ammonia oxidation catalysts: Experiments and computer simulation. <i>Applied Catalysis B: Environmental</i> , 2012, 111-112, 445-455.	20.2	110
7	Opportunities and challenges in the development of advanced materials for emission control catalysts. <i>Nature Materials</i> , 2021, 20, 1049-1059.	27.5	105
8	Inverse hysteresis during the NO oxidation on Pt under lean conditions. <i>Applied Catalysis B: Environmental</i> , 2009, 93, 22-29.	20.2	84
9	On the use of mechanistic CO oxidation models with a platinum monolith catalyst. <i>Applied Catalysis B: Environmental</i> , 2007, 70, 305-313.	20.2	73
10	CO and H <sub>2</sub> oxidation on a platinum monolith diesel oxidation catalyst. <i>Catalysis Today</i> , 2006, 117, 491-497.	4.4	71
11	Is oxygen storage in three-way catalysts an equilibrium controlled process?. <i>Applied Catalysis B: Environmental</i> , 2009, 91, 30-38.	20.2	71
12	Unravelling the Different Reaction Pathways for Low Temperature CO Oxidation on Pt/CeO <sub>2</sub> and Pt/Al <sub>2</sub> O <sub>3</sub> by Spatially Resolved Structure-Activity Correlations. <i>Journal of Physical Chemistry Letters</i> , 2019, 10, 7698-7705.	4.6	58
13	Competitive no, co and hydrocarbon oxidation reactions over a diesel oxidation catalyst. <i>Canadian Journal of Chemical Engineering</i> , 2012, 90, 1527-1538.	1.7	51
14	NH <sub>3</sub> -Slip Catalysts: Experiments Versus Mechanistic Modelling. <i>Topics in Catalysis</i> , 2009, 52, 1847-1851.	2.8	50
15	Calculating effectiveness factors in non-uniform washcoat shapes. <i>Chemical Engineering Science</i> , 2005, 60, 2037-2050.	3.8	46
16	Inverse Hysteresis Phenomena During CO and C <sub>3</sub> H <sub>6</sub> Oxidation over a Pt/Al <sub>2</sub> O <sub>3</sub> Catalyst. <i>Catalysis Letters</i> , 2012, 142, 930-935.	2.6	46
17	Efficient implementation of detailed surface chemistry into reactor models using mapped rate data. <i>Chemical Engineering Science</i> , 2009, 64, 1384-1389.	3.8	44
18	The promotion of carbon monoxide oxidation by hydrogen on supported platinum catalyst. <i>Applied Catalysis A: General</i> , 2009, 352, 27-34.	4.3	43

#	ARTICLE	IF	CITATIONS
19	Modeling the simultaneous oxidation of CO and H <sub>2</sub> on Pt – Promoting effect of H <sub>2</sub> on the CO-light-off. <i>Applied Catalysis A: General</i> , 2011, 397, 174-182.	4.3	43
20	Effect of propene, propane, and methane on conversion and oxidation state of three-way catalysts: a microwave cavity perturbation study. <i>Applied Catalysis B: Environmental</i> , 2015, 165, 369-377.	20.2	43
21	Simulation of automotive NH <sub>3</sub> oxidation catalysts based on pre-computed rate data from mechanistic surface kinetics. <i>Catalysis Today</i> , 2010, 151, 271-277.	4.4	40
22	Oxidation and selective catalytic reduction of NO by propene over Pt and Pt:Pt diesel oxidation catalysts. <i>Applied Catalysis B: Environmental</i> , 2014, 147, 264-274.	20.2	39
23	An experimental and simulation study on the cold start behaviour of particulate filters with wall integrated three way catalyst. <i>Applied Catalysis B: Environmental</i> , 2014, 144, 203-215.	20.2	38
24	Efficient simulation of an ammonia oxidation reactor using a solution mapping approach. <i>Catalysis Today</i> , 2011, 175, 141-146.	4.4	30
25	Transport and reaction in catalytic wall-flow filters. <i>Catalysis Today</i> , 2005, 105, 598-604.	4.4	29
26	Tomography based simulation of reactive flow at the micro-scale: Particulate filters with wall integrated catalyst. <i>Chemical Engineering Journal</i> , 2019, 378, 121919.	12.7	29
27	Global Kinetic Model and Parameter Optimization for a Diesel Oxidation Catalyst. <i>Topics in Catalysis</i> , 2009, 52, 1929-1933.	2.8	28
28	Rational Synthesis Concept for Cerium Oxide Nanoparticles: On the Impact of Particle Size on the Oxygen Storage Capacity. <i>Journal of Physical Chemistry C</i> , 2020, 124, 8736-8748.	3.1	28
29	Sensitive detection of NH <sub>2</sub> in shock tube experiments using frequency modulation spectroscopy. <i>International Journal of Chemical Kinetics</i> , 1999, 31, 445-453.	1.6	27
30	Methane oxidation hysteresis over Pt/Al <sub>2</sub> O <sub>3</sub> . <i>Applied Catalysis A: General</i> , 2014, 478, 91-97.	4.3	27
31	Overview: Status of the Microwave-Based Automotive Catalyst State Diagnosis. <i>Topics in Catalysis</i> , 2013, 56, 358-364.	2.8	26
32	Shock tube study of monomethylamine thermal decomposition and NH <sub>2</sub> high temperature absorption coefficient. <i>International Journal of Chemical Kinetics</i> , 1999, 31, 323-330.	1.6	24
33	Microwave Cavity Perturbation as a Tool for Laboratory In Situ Measurement of the Oxidation State of Three Way Catalysts. <i>Topics in Catalysis</i> , 2013, 56, 405-409.	2.8	24
34	Increased SCR performance of Cu-CHA due to ammonium nitrate buffer: Experiments with oscillating NO/NO <sub>2</sub> ratios and application to real driving cycles. <i>Applied Catalysis B: Environmental</i> , 2020, 270, 118763.	20.2	24
35	Hierarchical multi-scale model reduction in the simulation of catalytic converters. <i>Chemical Engineering Science</i> , 2013, 93, 362-375.	3.8	22
36	Oxygen storage in three-way-catalysts is an equilibrium controlled process: Experimental investigation of the redox thermodynamics. <i>Applied Catalysis B: Environmental</i> , 2017, 206, 104-114.	20.2	22

#	ARTICLE	IF	CITATIONS
37	A fast approximation method for computing effectiveness factors with non-linear kinetics. Chemical Engineering Science, 2007, 62, 2209-2215.	3.8	21
38	In operando Detection of Three-Way Catalyst Aging by a Microwave-Based Method: Initial Studies. Applied Sciences (Switzerland), 2015, 5, 174-186.	2.5	21
39	A one-dimensional modeling approach for dual-layer monolithic catalysts. Chemical Engineering Science, 2016, 139, 196-210.	3.8	21
40	The Effect of Catalytic Washcoat Geometry on Light-off in Monolith Reactors. Topics in Catalysis, 2006, 37, 155-159.	2.8	20
41	Numerical investigation of the impact of washcoat distribution on the filtration performance of gasoline particulate filters. Chemical Engineering Science, 2020, 221, 115656.	3.8	20
42	Runtime efficient simulation of monolith catalysts with a dual-layer washcoat. Catalysis Today, 2012, 188, 70-79.	4.4	19
43	Impact of washcoat distribution on the catalytic performance of gasoline particulate filters as predicted by lattice Boltzmann simulations. Chemical Engineering Journal, 2021, 406, 127040.	12.7	19
44	Efficient interpolation of precomputed kinetic data employing reduced multivariate Hermite Splines. Computers and Chemical Engineering, 2017, 98, 21-30.	3.8	18
45	Wall-flow filters with wall-integrated oxidation catalyst: A simulation study. Applied Catalysis B: Environmental, 2007, 70, 233-240.	20.2	17
46	Characteristics-based model predictive control of selective catalytic reduction in diesel-powered vehicles. Journal of Process Control, 2016, 47, 98-110.	3.3	17
47	Spatiotemporal Investigation of the Temperature and Structure of a Pt/CeO <sub>2</sub> Oxidation Catalyst for CO and Hydrocarbon Oxidation during Pulse Activation. Industrial & Engineering Chemistry Research, 2021, 60, 6662-6675.	3.7	17
48	CH-Radical Concentration Measurements in Fuel-Rich CH <sub>4</sub> /O <sub>2</sub> /Ar and CH <sub>4</sub> /O <sub>2</sub> /NO/Ar Mixtures Behind Shock Waves. Combustion and Flame, 1998, 113, 624-626.	5.2	15
49	Analysis of a kinetic model describing the dynamic operation of a three-way catalyst. Applied Catalysis B: Environmental, 2007, 70, 269-275.	20.2	13
50	A Fast Approach to Predictive Models: NO-Oxidation in Exhaust Gas Aftertreatment Systems. Topics in Catalysis, 2009, 52, 1925-1928.	2.8	13
51	Effect of Diverse Hydrocarbons on the Cold-Start Behavior of Three-Way Catalysts. Topics in Catalysis, 2017, 60, 278-282.	2.8	13
52	Propene induced reversible deactivation effects in diesel oxidation catalysts. Applied Catalysis B: Environmental, 2018, 220, 446-461.	20.2	13
53	SI-Engine Control With Microwave-Assisted Direct Observation of Oxygen Storage Level in Three-Way Catalysts. IEEE Transactions on Control Systems Technology, 2014, 22, 2346-2353.	5.2	12
54	Real-time Simulation of Dual-Layer Catalytic Converters Based on the Internal Mass Transfer Coefficient Approach. Topics in Catalysis, 2017, 60, 225-229.	2.8	12

#	ARTICLE	IF	CITATIONS
55	Determination of Effective Diffusion Coefficients through the Walls of Coated Diesel Particulate Filters. <i>Industrial &amp; Engineering Chemistry Research</i> , 2009, 48, 10746-10750.	3.7	11
56	Comprehensive Characterization of a Mesoporous Cerium Oxide Nanomaterial with High Surface Area and High Thermal Stability. <i>Langmuir</i> , 2021, 37, 2563-2574.	3.5	11
57	Deviations from Lindemann behaviour: photoisomerization dynamics of trans-stilbene under collisional gas phase conditions. <i>Journal of Photochemistry and Photobiology A: Chemistry</i> , 1997, 105, 345-352.	3.9	10
58	Peering into the Formation of Cerium Oxide Colloidal Particles in Solution by In Situ Small-Angle X-ray Scattering. <i>Langmuir</i> , 2020, 36, 9175-9190.	3.5	10
59	Importance of nitrates in Cu-SCR modelling: A validation study using different driving cycles. <i>Catalysis Today</i> , 2021, 360, 252-262.	4.4	10
60	Review on Radio Frequency Based Monitoring of SCR and Three Way Catalysts. <i>Topics in Catalysis</i> , 2016, 59, 961-969.	2.8	9
61	<i>Operando</i> X-ray Absorption Spectroscopy Study During Conditioning of Pt-Based Catalysts and Its Implications for CO Oxidation. <i>Journal of Physical Chemistry C</i> , 2020, 124, 20090-20100.	3.1	8
62	Investigating carbon monoxide and propene oxidation on a platinum diesel oxidation catalyst. <i>Canadian Journal of Chemical Engineering</i> , 2014, 92, 1496-1505.	1.7	7
63	A case study in multi-scale model reduction: The effect of cell density on catalytic converter performance. <i>Canadian Journal of Chemical Engineering</i> , 2014, 92, 1607-1617.	1.7	7
64	Towards a fully predictive multi-scale pressure drop model for a wall-flow filter. <i>Chemical Engineering Research and Design</i> , 2020, 164, 261-280.	5.6	7
65	Selective catalytic reduction: Adding an ammonia slip catalyst mitigates dosing errors. <i>Canadian Journal of Chemical Engineering</i> , 2022, 100, 1439-1447.	1.7	7
66	Parametric study of a recuperative catalytic converter. <i>Catalysis Today</i> , 2012, 188, 106-112.	4.4	6
67	Hydrogen Generation and Coke Formation over a Diesel Oxidation Catalyst under Fuel Rich Conditions. <i>Journal of Physical Chemistry C</i> , 2011, 115, 1156-1162.	3.1	5
68	Modellbasierte Optimierung der Harnstoffdosierung für SCR-Katalysatoren. <i>Chemie-Ingenieur-Technik</i> , 2011, 83, 1681-1687.	0.8	5
69	A simulation study on the conversion efficiency of catalytically active particulate filters. <i>Chemical Engineering Science</i> , 2016, 149, 117-128.	3.8	5
70	A 3D additive manufacturing approach for the validation of a numerical wall-scale model of catalytic particulate filters. <i>Chemical Engineering Journal</i> , 2021, 405, 126653.	12.7	5
71	HC-Induced Deactivation in CO Conversion at Diesel Oxidation Catalysts. <i>Emission Control Science and Technology</i> , 2016, 2, 181-187.	1.5	4
72	Microwave-assisted oxygen storage level estimation for three-way catalyst control: Model-based development and benchmarking of selected control strategies. <i>Canadian Journal of Chemical Engineering</i> , 2014, 92, 1597-1606.	1.7	3

#	ARTICLE	IF	CITATIONS
73	Impact of Test Conditions on the Oxygen Storage Capacity of Pd Loaded Cerium Zirconium Oxide. Topics in Catalysis, 2017, 60, 272-277.	2.8	3
74	Modellbildung und Vergleich von linearen und nichtlinearen Regelungskonzepten für Drei-Wege-Abgaskatalysatoren. Automatisierungstechnik, 2016, 64, 297-311.	0.8	2
75	Particle Size-Dependent Filtration Efficiency and Pressure Drop of Gasoline Particle Filters with Varying Washcoat Volumes. Emission Control Science and Technology, 2021, 7, 105-116.	1.5	2
76	Towards a polydisperse packed bed filtration model as a surrogate model for particulate filters. Journal of Aerosol Science, 2022, 160, 105900.	3.8	2
77	Infrared Spectroscopic Study of the NH <sub>3</sub> -SCR on Fe-Zeolites under Transient Conditions. Topics in Catalysis, 2013, 56, 210-214.	2.8	1
78	Effiziente Implementierung komplexer Reaktionskinetik für Reaktorsimulationen. Chemie-Ingenieur-Technik, 2008, 80, 1246-1246.	0.8	0
79	Systematic Transformation of Chemical Catalyst Models for Control Design. IEEE Transactions on Control Systems Technology, 2017, 25, 1656-1669.	5.2	0