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as of September 28, 2019

Selection of papers in the field of chemical sensors

(mainly selected peer reviewed articles and book contributions)

R. Wagner, D. Schönauer-Kamin, R. Moos:
Novel Operation Strategy to Obtain a Fast Gas Sensor for Continuous ppb-Level NO_2 Detection at Room Temperature Using ZnO—A Concept Study with Experimental Proof
open access - free *Sensors*, **19**, 4104 (2019), doi: 10.3390/s19194104

T. Ritter, J. Lattus, G. Hagen, R. Moos:
On the influence of the NO_x equilibrium reaction on mixed potential sensor signals: A comparison between FE modelling and experimental data
Sensors and Actuators B: Chemical, **296**, 126627 (2019), doi: 10.1016/j.snb.2019.126627

N. Donker, A. Ruchets, D. Schönauer-Kamin, J. Zosel, U. Guth, R. Moos:
Influence of polarization time and polarization current of Pt|YSZ-based NO sensors utilizing the pulsed polarization when applying constant charge
Sensors and Actuators B: Chemical, **290**, 28-33 (2019), doi: 10.1016/j.snb.2019.03.060

A. Ruchets, N. Donker, D. Schönauer-Kamin, R. Moos, J. Zosel, U. Guth, M. Mertig:
Selectivity improvement towards hydrogen and oxygen of solid electrolyte sensors by dynamic electrochemical methods
Sensors and Actuators B: Chemical, **290**, 53-58 (2019), doi: 10.1016/j.snb.2019.03.063

T. Ritter, M. Seibel, F. Hofmann, M. Weibel, R. Moos:
Simulation of a NO_x Sensor for Model-Based Control of Exhaust Aftertreatment Systems
Topics in Catalysis, **62**, 150-156 (2019), doi: 10.1007/s11244-018-1102-3

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A finite element model for mixed potential sensors
Sensors and Actuators B: Chemical, **287**, 476-485 (2019), doi: 10.1016/j.snb.2019.02.052

P. Chen, V. Rizzotto, A. Khetan, K. Xie, R. Moos, H. Pitsch, D. Ye, U. Simon:
Mechanistic understanding of Cu-CHA catalyst as sensor for direct NH_3-SCR monitoring: the role of Cu mobility
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M.-L. Anke, M. Hämmerle, R. Moos, A. Jess:
Operando Determination of the Thermal Decomposition of Supported Ionic Liquids by a Radio-Frequency-Based Method
open access - free *ACS Omega*, **4**, 3351-3360 (2019), doi: 10.1021/acsomega.8b02421

S. Walter, A. Bogner, G. Hagen, R. Moos:
Novel radio-frequency-based gas sensor with integrated heater
open access - free *Journal of Sensors and Sensor Systems*, **8**, 49-56 (2019), doi: 10.5194/jsss-8-49-2019

T. Ritter, J. Lattus, G. Hagen, R. Moos:
Effect of the Heterogeneous Catalytic Activity of Electrodes for Mixed Potential Sensors
open access - free *Journal of the Electrochemical Society*, **165**, B795-B803 (2018), doi: 10.1149/2.0181816jes

L. Vogel, R. Wagner, R. Moos, D. Schönauer-Kamin:
Investigations on the crystal growth mechanism of one-pot-synthesized Al-doped ZnO and its UV-enhanced room temperature NO_2 gas sensing characteristics
Functional Materials Letters, **11**, 1850087 (2018), doi: 10.1142/S179360471850087X

M.-L. Anke, M. Hämmerle, A. Jess, R. Moos:
Radio frequency- and impedance-based sensing of ionic liquids supported on porous carriers and their limitations
Sensors and Actuators B: Chemical, **273**, 1564-1571 (2018), doi: 10.1016/j.snb.2018.07.036

M. Bektas, T. Stöcker, A. Mergner, G. Hagen, R. Moos:
Combined resistive and thermoelectric oxygen sensor with almost temperature-independent characteristics
open access - free *Journal of Sensors and Sensor Systems*, **7**, 289-297 (2018), doi: 10.5194/jsss-7-289-2018

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Y. Zheng, U. Sauter, R. Moos:
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Sensors and Actuators B: Chemical, **255**, 3025-3032 (2018), doi: 10.1016/j.snb.2017.09.126

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Simulation of a thermoelectric gas sensor that determines hydrocarbon concentrations in exhausts and the light-off temperature of catalyst materials
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A. Bogner, C. Steiner, S. Walter, J. Kita, G. Hagen, R. Moos:
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Chemical Engineering and Technology, **40**, 1660-1665 (2017), doi: 10.1002/ceat.201700190

J. Exner, G. Albrecht, D. Schönauer-Kamin, J. Kita, R. Moos:
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Comparative Study of Different Methods for Soot Sensing and Filter Monitoring in Diesel Exhausts
Sensors, **17**, 400 (2017), doi: 10.3390/s17020400

R. Moos, D. Rauch, M. Votsmeier, D. Kubinski:
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Journal of the Electrochemical Society, **163**, F877-F884 (2016), doi: 10.1149/2.1081608jes

J. Exner, M. Schubert, D. Hanft, T. Stöcker, P. Fuierer, R. Moos:
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S. Fischer, D. Schönauer-Kamin, R. Pohle, M. Fleischer, R. Moos:
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Journal of Sensors and Sensor Systems, **4**, 321-329 (2015), doi: 10.5194/jsss-4-321-2015

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Sensors, **15**, 28915-28941 (2015), doi: 10.3390/s151128915

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Sensors, **15**, 27021-27034 (2015), doi: 10.3390/s151027021

M. Dietrich, C. Jahn, P. Lanzerath, R. Moos:
Microwave-Based Oxidation State and Soot Loading Determination on Gasoline Particulate Filters with Three-Way Catalyst Coating for Homogenously Operated Gasoline Engines
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*Applied Sciences, **5**, 174-186 (2015), doi: 10.3390/app5030174*

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Automotive Catalyst State Diagnosis Using Microwaves
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Applied Catalysis B: Environmental, **165**, 369-377 (2015), doi: 10.1016/j.apcatb.2014.09.068

D. Rauch, G. Albrecht, D. Kubinski, R. Moos:
A microwave-based method to monitor the ammonia loading of a vanadia-based SCR catalyst
Applied Catalysis B: Environmental, **165**, 36-42 (2015), doi: 10.1016/j.apcatb.2014.09.059

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PACRIM 11, *The 11th Pacific Rim Conference of Ceramic Societies*, Jeju, Korea, 30.8.-4.9.2015, p. 396, WeD2-2

J. Exner, G. Albrecht, P. Fuierer, R. Moos:
NO_2 Detection by Pulsed Polarization of Doped Bismuth Vanadate films prepared by the Aerosol Deposition Method
7th International Conference on Electroceramics (ICE2015), State College, PA, USA, 13.5.-16.5.2015, p. 3-O-02

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A mixed potential based sensor that measures directly catalyst conversion - A novel approach for catalyst on-board diagnostics
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S. Wiegärtner, G. Hagen, J. Kita, W. Reitmeier, M. Hien, P. Grass, R. Moos:
Thermoelectric hydrocarbon sensor in thick-film technology for on-board-diagnostics of a diesel oxidation catalyst
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Aerosol-deposited $BaFe_{0.7}Ta_{0.3}O_{3-\delta}$ for nitrogen monoxide and temperature-independent oxygen sensing
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