as of February 13, 2024

Year 2024

In Press

S. Walter, P. Schwanzer, G. Hagen, H.-P. Rabl, M. Dietrich, R. Moos:
Combined Ash and Soot Monitoring for Gasoline Particulate Filters Using a Radio-Frequency-Based Sensor
open access - free *Emission Control Science and Technology*, in press, doi: 10.1007/s40825-023-00235-y

S. Bresch, P. Stargardt, R. Moos, B. Mieller:
Co-Fired Multilayer Thermoelectric Generators Based on Textured Calcium Cobaltite
open access - free *Advanced Electronic Materials*, in press, doi: 10.1002/aelm.202300636

M. Linz, F. Bühner, D. Paulus, L. Hennerici, Y. Guo, V. Mereacre, U. Mansfeld, M. Seipenbusch, J. Kita, R. Moos:
Revealing the Deposition Mechanism of the Powder Aerosol Deposition Method Using Ceramic Oxide Core–Shell Particles
open access - free *Advanced Materials*, in press, doi: 10.1002/adma.202308294

Peer Reviewed Journals

N. Donker, D. Schönauer-Kamin, R. Moos:
Mixed-Potential Ammonia Sensor Based on a Dense Yttria-Stabilized Zirconia Film Manufactured at Room Temperature by Powder Aerosol Deposition
open access - free *Sensors*, **24**, 811 (2024), doi: 10.3390/s24030811

Year 2023

Peer Reviewed Journals

C. Greve, P. Ramming, M. Griesbach, N. Leupold, R. Moos, A. Köhler, E. Herzig, F. Panzer, H. Grüninger:
To Stop or to Shuttle Halides? The Role of an Ionic Liquid in Thermal Halide Mixing of Hybrid Perovskites
ACS Energy Letters, **8**, 5041-5049 (2023), doi: 10.1021/acsenergylett.3c01878

D. Paulus, J. Kita, R. Moos:
Relaxation behavior of intrinsic compressive stress in powder aerosol co-deposited films: Rethinking PAD films as nanomaterials
Ceramics International, **49**, 38375-38381 (2023), doi: 10.1016/j.ceramint.2023.09.065

S. Walter, P. Schwanzer, G. Hagen, H.-P. Rabl, M. Dietrich, R. Moos:
Soot Monitoring of Gasoline Particulate Filters Using a Radio-Frequency-Based Sensor
open access - free *Sensors*, **23**, 7861 (2023), doi: 10.3390/s23187861

S. Biberger, N. Leupold, C. Witt, C. Greve, P. Markus, P. Ramming, D. Lukas, K. Schötz, F.-J. Kahle, C. Zhu, G. Papastavrou, A. Köhler, E.M. Herzig, R. Moos, F. Panzer:
First of Their Kind: Solar Cells with a Dry-Processed Perovskite Absorber Layer via Powder Aerosol Deposition and Hot-Pressing
open access - free *Solar RRL*, **7**, 2300261 (2023), doi: 10.1002/solr.202300261

S. Walter, G. Hagen, D. Koch, A. Geißelmann, R. Moos:
On the Suitability of NO_x-Storage-Catalysts for Hydrogen Internal Combustion Engines and a Radio Frequency-Based NO_x Loading Monitoring
open access - free *Topics in Catalysis*, **66**, 964-972 (2023), doi: 10.1007/s11244-022-01727-x

V. Malashchuk, S. Walter, M. Engler, G. Hagen, G. Link, J. Jelonnek, F. Raß, R. Moos:
Reducing Cold-Start Emissions by Microwave-Based Catalyst Heating: Simulation Studies
open access - free *Topics in Catalysis*, **66**, 1031-1036 (2023), doi: 10.1007/s11244-023-01788-6

T. Wöhrl, J. Kita, R. Moos, G. Hagen:
Capacitive, Highly Selective Zeolite-Based Ammonia Sensor for Flue Gas Applications
open access - free *Chemosensors*, **11**, 413 (2023), doi: 10.3390/chemosensors11070413

T. Nazarenus, J. Schneider, L. Hennerici, R. Moos, J. Kita:
Energy estimation of the post-treatment process for powder aerosol deposited solid electrolyte films
Functional Materials Letters, **16**, 2350014 (2023), doi: 10.1142/S1793604723500145

T. Wöhrl, J. Herrmann, J. Kita, R. Moos, G. Hagen:
Methods to investigate the temperature distribution of heated ceramic gas sensors for high-temperature applications
open access - free *Journal of Sensors and Sensor Systems*, **12**, 205-214 (2023), doi: 10.5194/jsss-12-205-2023

M. Sozak, T. Nazarenus, J. Exner, J. Kita, R. Moos:
Room temperature manufacture of dense NaSICON solid electrolyte films for all-solid-state-sodium batteries
open access - free *Journal of Materials Science*, **58**, 10108-10119 (2023), doi: 10.1007/s10853-023-08642-w

C. Steiner, T. Wöhrl, M. Steiner, J. Kita, A. Müller, H. Eisazadeh, R. Moos, G. Hagen:
Resistive Multi-Gas Sensor for Simultaneously Measuring the Oxygen Stoichiometry (λ) and the NO_x Concentration in Exhausts: Engine Tests under Dynamic Conditions

open access - free *Sensors*, **23**, 5612 (2023), doi: 10.3390/s23125612

C. Witt, K. Schötz, M. Kuhn, N. Leupold, S. Biberger, P. Ramming, F.-J. Kahle, A. Köhler, R. Moos, E.M. Herzig, F. Panzer:
Orientation and Grain Size in $MAPbI_3$ Thin Films: Influence on Phase Transition, Disorder, and Defects
The Journal of Physical Chemistry C, **127**, 10563-10573 (2023), doi: 10.1021/acs.jpcc.2c08968

S. Müllner, T. Michlik, M. Reichel, T. Held, R. Moos, C. Roth:
Effect of Water-Soluble CMC/SBR Binder Ratios on Si-rGO Composites Using µm- and nm-Sized Silicon as Anode Materials for Lithium-Ion Batteries
open access - free *Batteries*, **9**, 248 (2023), doi: 10.3390/batteries9050248

C. Steiner, S. Püls, M. Bektas, A. Müller, G. Hagen, R. Moos:
Resistive, Temperature-Independent Metal Oxide Gas Sensor for Detecting the Oxygen Stoichiometry (Air-Fuel Ratio) of Lean Engine Exhaust Gases
open access - free *Sensors*, **23**, 3914 (2023), doi: 10.3390/s23083914

H. Hoffmann, M.C. Paulisch-Rinke, M. Gernhard, Y. Jännsch, J. Timm, C. Brandmeir, S. Lechner, R. Marschall, R. Moos, I. Manke, C. Roth:
Multi-scale morphology characterization of hierarchically porous silver foam electrodes for electrochemical CO_2 reduction
open access - free *Communications Chemistry*, **6**, 50 (2023), doi: 10.1038/s42004-023-00847-z

N. Leupold, P. Ramming, I. Bauer, C. Witt, J. Jungklaus, R. Moos, H. Grüninger, F. Panzer:
How Methylammonium Iodide Reactant Size Affects Morphology and Defect Properties of Mechanochemically Synthesized $MAPbI_3$ Powder
open access - free *European Journal of Inorganic Chemistry*, **26**, e202200736 (2023), doi: 10.1002/ejic.202200736

G. Hagen, J. Herrmann, X. Zhang, H. Kohler, I. Hartmann, R. Moos:
Application of a Robust Thermoelectric Gas Sensor in Firewood Combustion Exhausts
open access - free *Sensors*, **23**, 2930 (2023), doi: 10.3390/s23062930

C. Steiner, G. Hagen, I. Kogut, H. Fritze, R. Moos:
Analysis of defect mechanisms in nonstoichiometric ceria-zirconia by the microwave cavity perturbation method
open access - free *Journal of the American Ceramic Society*, **106**, 2875-2892 (2023), doi: 10.1111/jace.18938

R. Werner, J. Kita, M. Gollner, F. Linseis, R. Moos:
Gauge to simultaneously determine the electrical conductivity, the Hall constant, and the Seebeck coefficient up to 800 °C
open access - free *Journal of Sensors and Sensor Systems*, **12**, 69-84 (2023), doi: 10.5194/jsss-12-69-2023

K. Fykouras, J. Lahnsteiner, N. Leupold, P. Tinnemans, R. Moos, F. Panzer, G. de Wijs, M. Bokdam, H. Grüninger, A. Kentgens:
Disorder to order: how halide mixing in $MAPbI_{3-x}Br_x$ perovskites restricts MA dynamics
Journal of Materials Chemistry A, **11**, 4587-4597 (2023), doi: 10.1039/D2TA09069D

J. Distler, T. Wöhrl, R. Werner, M. Gerlach, M. Gollner, F. Linseis, J. Kita, R. Moos:
Miniaturized differential scanning calorimeter with an integrated mass sensing system: first steps
open access - free *Journal of Sensors and Sensor Systems*, **12**, 9-19 (2023), doi: 10.5194/jsss-12-9-2023

V. Malashchuk, A. Jess, R. Moos:
Operando monitoring of gas drying by adsorption on supported ionic liquids: Determination of velocity of adsorption front by microwaves
Sensors and Actuators B: Chemical, **380**, 133291 (2023), doi: 10.1016/j.snb.2023.133291

D. Kohlmann, H. Wulfmeier, M. Schewe, I. Kogut, C. Steiner, R. Moos, C. Rembe, H. Fritze:
Chemical expansion of $CeO_{2-\delta}$ and $Ce_{0.8}Zr_{0.2}O_{2-\delta}$ thin films determined by laser Doppler vibrometry at high temperatures and different oxygen partial pressures
open access - free *Journal of Materials Science*, **58**, 1481-1504 (2023), doi: 10.1007/s10853-022-07830-4

Doctoral Theses

T. Nazarenus:
Aerosolbasierte Kaltabscheidung zur industriellen Produktion von oxidkeramischen Festelektrolyten für metallische Lithiumakkumulatoren
(Powder aerosol deposition for the industrial production of oxide ceramic solid electrolytes for metallic lithium accumulators)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zu Materialien und Prozessen, Bd. 21, Shaker-Verlag, Düren (2023), ISBN: 978-3-8440-9142-7

T. Michlik:
Zink-Glas-Kompositelektroden für wiederaufladbare Zink-Luft-Batterien
(Zinc-glass composite electrodes for rechargeable zinc-air batteries)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zu Materialien und Prozessen, Bd. 20, Shaker-Verlag, Düren (2023), ISBN: 978-3-8440-9059-8

A. Ruchets:
Application of solid electrolyte gas sensors based on YSZ for dynamic electrochemical measurements
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zur Sensorik und Messtechnik, Bd. 39, Shaker-Verlag, Düren (2023), ISBN: 978-3-8440-8889-2

Year 2022

Peer Reviewed Journals

U. Eckstein, J. Exner, A. Bencan Golob, K. Ziberna, G. Drazic, H. Ursic, H. Wittkämper, C. Papp, J. Kita, R. Moos, K.G. Webber, N.H. Khansur:
Temperature-dependent dielectric anomalies in powder aerosol deposited ferroelectric ceramic films
open access - free *Journal of Materiomics*, **8**, 1239-1250 (2022), doi: 10.1016/j.jmat.2022.05.001

C. Witt, N. Leupold, P. Ramming, K. Schötz, R. Moos, F. Panzer:
How the Microstructure of $MAPbI_3$ Powder Impacts Pressure-Induced Compaction and Optoelectronic Thick-Film Properties
The Journal of Physical Chemistry C, **126**, 15424-15435 (2022), doi: 10.1021/acs.jpcc.2c03329

S. Biberger, K. Schötz, P. Ramming, N. Leupold, R. Moos, A. Köhler, H. Grüninger, F. Panzer:
How the ionic liquid $BMIMBF_4$ influences the formation and optoelectronic properties of $MAPbI_3$ thin films
open access - free *Journal of Materials Chemistry A*, **10**, 18038-18049 (2022), doi: 10.1039/d2ta04448j

S. Bresch, B. Mieller, R. Moos, T. Rabe:
Lowering the sintering temperature of calcium manganate for thermoelectric applications
open access - free *AIP Advances*, **12**, 085116 (2022), doi: 10.1063/5.0098015

Y. Jännsch, M. Hämmerle, E. Simon, M. Fleischer, R. Moos:
Contributions of Pulsed Operation Along with Proper Choice of the Substrate for Stabilizing the Catalyst Performance in Electrochemical Reduction of CO_2 Toward Ethylene in Gas Diffusion Electrode Based Flow Cell Reactors
open access - free *Energy Technology*, **10**, 2200046 (2022), doi: 10.1002/ente.202200046

H. Wulfmeier, D. Kohlmann, T. Defferriere, C. Steiner, R. Moos, H.L. Tuller, H. Fritze:
Thin-film chemical expansion of ceria based solid solutions: laser vibrometry study
open access - free *Zeitschrift für Physikalische Chemie*, **236**, 1013-1053 (2022), doi: 10.1515/zpch-2021-3125

T. Nazarenus, K. Schlesier, F. Lebeda, M. Retsch, R. Moos:
Microstrain release decouples electronic and thermal conductivity in powder aerosol deposited films
Materials Letters, **322**, 132461 (2022), doi: 10.1016/j.matlet.2022.132461

R. Werner, J.S. Matejka, D. Schönauer-Kamin, R. Moos:
From Thermoelectric Powder Directly to Thermoelectric Generators: Flexible Bi_2Te_3 Films on Polymer Sheets Prepared by the Powder Aerosol Deposition Method at Room Temperature
open access - free *Energy Technology*, **10**, 2101091 (2022), doi: 10.1002/ente.202101091

S. Walter, P. Schwanzer, C. Steiner, G. Hagen, H.-P. Rabl, M. Dietrich, R. Moos:
Mixing Rules for an Exact Determination of the Dielectric Properties of Engine Soot Using the Microwave Cavity Perturbation Method and Its Application in Gasoline Particulate Filters
open access - free *Sensors*, **22**, 3311 (2022), doi: 10.3390/s22093311

M. Linz, J. Exner, T. Nazarenus, J. Kita, R. Moos:
Mobile sealing and repairing of damaged ceramic coatings by powder aerosol deposition at room temperature
open access - free *Open Ceramics*, **10**, 100253 (2022), doi: 10.1016/j.oceram.2022.100253

T. Nazarenus, K. Schlesier, S. Biberger, J. Exner, J. Kita, A. Köhler, R. Moos:
Posttreatment of powder aerosol deposited oxide ceramic films by high power LED
open access - free *International Journal of Applied Ceramic Technology*, **19**, 1540-1553 (2022), doi: 10.1111/ijac.13977

S. Bresch, B. Mieller, P. Mrkwitschka, R. Moos, T. Rabe:
Glass-ceramic composites as insulation material for thermoelectric oxide multilayer generators
open access - free *Journal of the American Ceramic Society*, **105**, 2140-2149 (2022), doi: 10.1111/jace.18235

C. Steiner, G. Hagen, I. Kogut, H. Fritze, R. Moos:
Analysis of defect chemistry and microstructural effects of non-stoichiometric ceria by the high-temperature microwave cavity perturbation method
Journal of the European Ceramic Society, **42**, 499-511 (2022), doi: 10.1016/j.jeurceramsoc.2021.08.053

Doctoral Theses

S. Chalupczok:
Untersuchung einer voltammetrischen Methode zur pH-Wert-Messung mit protonenleitenden Funktionsschichten
(Investigations on a voltammetric method for pH measurements with proton-conducting functional layers)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zur Sensorik und Messtechnik, Bd. 38, Shaker-Verlag, Düren (2022), ISBN: 978-3-8440-8865-6

S. Bresch:
Oxidkeramische Werkstoffe und Folien für thermoelektrische Multilayergeneratoren
(Oxide ceramic materials and tapes for thermoelectric multilayer generators)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zu Materialien und Prozessen, Bd. 19, Shaker-Verlag, Düren (2022), ISBN: 978-3-8440-8802-1

Y. Jännsch:
Elektrochemische CO_2-Reduktion durch gepulste Elektrolyse: Entwicklung und Optimierung eines Ethen-selektiven, langzeitstabilen und skalierbaren Prozesses
(Electrochemical CO_2 reduction by pulsed electrolysis: Development and optimization of an ethene-selective, long-term stable and scalable process)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zu Materialien und Prozessen, Bd. 18, Shaker-Verlag, Düren (2022), ISBN: 978-3-8440-8770-3

Year 2021

Peer Reviewed Journals

A. Ruchets, N. Donker, J. Zosel, D. Schönauer-Kamin, R. Moos, U. Guth, M. Mertig:
CO Gas Detection on Pt|YSZ|Pt Solid Electrolyte Sensors by Methods Based on Dynamic Voltage Variations
Journal of The Electrochemical Society, **168**, 117506 (2021), doi: 10.1149/1945-7111/ac2fc5

J. Exner, M. Linz, J. Kita, R. Moos:
Making powder aerosol deposition accessible for small amounts: A novel and modular approach to produce dense ceramic films
open access - free *International Journal of Applied Ceramic Technology*, **18**, 2178-2196 (2021), doi: 10.1111/ijac.13841

P. Ramming, N. Leupold, K. Schötz, A. Köhler, R. Moos, H. Grüninger, F. Panzer:
Suppressed ion migration in powder-based perovskite thick films using an ionic liquid
open access - free *Journal of Materials Chemistry C*, **9**, 11827-11837 (2021), doi: 10.1039/D1TC01554K

I. Kogut, C. Steiner, H. Wulfmeier, A. Wollbrink, G. Hagen, R. Moos, H. Fritze:
Comparison of the electrical conductivity of bulk and film $Ce_{1-x}Zr_xO_{2-\delta}$ in oxygen-depleted atmospheres at high temperatures
open access - free *Journal of Materials Science*, **56**, 17191-17204 (2021), doi: 10.1007/s10853-021-06348-5

Y. Jännsch, M. Hämmerle, J. Leung, E. Simon, M. Fleischer, R. Moos:
Gas evolution in electrochemical flow cell reactors induces resistance gradients with consequences for the positioning of the reference electrode
open access - free *RSC Advances*, **11**, 28189-28197 (2021), doi: 10.1039/D1RA05345K

R. Wagner, D. Schönauer-Kamin, W. Bäther, R. Moos:
Concept study with experimental proof for a new type of detector for gas chromatography
Sensors and Actuators B: Chemical, **346**, 130490 (2021), doi: 10.1016/j.snb.2021.130490

N. Leupold, A.L. Seibel, R. Moos, F. Panzer:
Electrical Conductivity of Halide Perovskites Follows Expectations from Classical Defect Chemistry
open access - free *European Journal of Inorganic Chemistry*, **2021**, 2882-2889 (2021), doi: 10.1002/ejic.202100381

M. Linz, J. Exner, J. Kita, F. Bühner, M. Seipenbusch, R. Moos:
Discontinuous Powder Aerosol Deposition: An Approach to Prepare Films Using Smallest Powder Quantities
open access - free *Coatings*, **11**, 844 (2021), doi: 10.3390/coatings11070844

T. Nazarenus, Y. Sun, J. Exner, J. Kita, R. Moos:
Powder Aerosol Deposition as a Method to Produce Garnet-Type Solid Ceramic Electrolytes: A Study on Electrochemical Film Properties and Industrial Application
open access - free *Energy Technology*, **9**, 2100211 (2021), doi: 10.1002/ente.202100211

P. Schwanzer, M. Schillinger, J. Mieslinger, S. Walter, G. Hagen, S. Märkl, G. Haft, M. Dietrich, R. Moos, M. Gaderer, H.-P. Rabl:
A Synthetic Ash-Loading Method for Gasoline Particulate Filters with Active Oil Injection
SAE International Journal of Engines, **14**, 493-505 (2021), doi: 10.4271/03-14-04-0029

P. Glosse, S. Denneler, O. Stier, R. Moos:
Investigation of the Powder Aerosol Deposition Method Using Shadowgraph Imaging
open access - free *Materials*, **14**, 2502 (2021), doi: 10.3390/ma14102502

N. Leupold, S. Denneler, G. Rieger, R. Moos:
Powder Treatment for Increased Thickness of Iron Coatings Produced by the Powder Aerosol Deposition Method and Formation of Iron–Alumina Multilayer Structures
open access - free *Journal of Thermal Spray Technology*, **30**, 480-487 (2021), doi: 10.1007/s11666-020-01098-3

N. Leupold, F. Panzer:
Recent Advances and Perspectives on Powder-Based Halide Perovskite Film Processing
open access - free *Advanced Functional Materials*, **31**, 2007350 (2021), doi: 10.1002/adfm.202007350

R. Wang, R. Moos:
Electrical conductivity determination of semiconductors by utilizing photography, finite element simulation and resistance measurement
open access - free *Journal of Materials Science*, **56**, 10449-10457 (2021), doi: 10.1007/s10853-021-05949-4

R. Werner, J. Kita, M. Gollner, F. Linseis, R. Moos:
Novel, low-cost device to simultaneously measure the electrical conductivity and the Hall coefficient from room temperature up to 600 °C
open access - free *Journal of Sensors and Sensor Systems*, **10**, 71-81 (2021), doi: 10.5194/jsss-10-71-2021

V. Malashchuk, A. Jess, R. Moos:
Determination of water loading of supported ionic liquids by microwave analysis - A contribution for operando monitoring of gas drying by adsorption
Sensors and Actuators B: Chemical, **335**, 129646 (2021), doi: 10.1016/j.snb.2021.129646

I. Kogut, A. Wollbrink, C. Steiner, F.-E. El Azzouzi, R. Moos, H. Fritze:
Linking the Electrical Conductivity and Non-Stoichiometry of Thin Film $Ce_{1-x}Zr_xO_{2-\delta}$ by a Resonant Nanobalance Approach
open access - free *Materials*, **14**, 748 (2021), doi: 10.3390/ma14040748

H. Grüninger, M. Bokdam, N. Leupold, P. Tinnemans, R. Moos, G.A. De Wijs, F. Panzer, A.P.M. Kentgens:
Microscopic (Dis)order and Dynamics of Cations in Mixed FA/MA Lead Halide Perovskites
The Journal of Physical Chemistry C, **125**, 1742-1753 (2021), doi: 10.1021/acs.jpcc.0c10042

S. Bresch, B. Mieller, D. Schönauer-Kamin, R. Moos, T. Reimann, F. Giovannelli, T. Rabe:
Influence of pressure and dwell time on pressure-assisted sintering of calcium cobaltite
open access - free *Journal of the American Ceramic Society*, **104**, 917-927 (2021), doi: 10.1111/jace.17541

Doctoral Theses

N. Müller:
Untersuchungen zur Teilentladungsresistenz von Polymeren
(Investigations on the partial discharge resistance of polymers)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zu Materialien und Prozessen, Bd. 17, Shaker-Verlag, Düren (2021), ISBN: 978-3-8440-8168-8

R. Wagner:
Zinkoxid als Material zur resistiven Detektion von NO_2 bei Raumtemperatur
(Zinc oxide as a material to detect resistively NO_2 at room temperature)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zur Sensorik und Messtechnik, Bd. 35, Shaker-Verlag, Düren (2021), ISBN: 978-3-8440-8039-1

Year 2020

Peer Reviewed Journals

R. Wagner, D. Schönauer-Kamin, R. Moos:
Influence of Humidity and Different Gases on a Resistive Room Temperature NO_2 Gas Dosimeter Based on Al-Doped ZnO for ppb-Concentration Detection
open access - free *Journal of The Electrochemical Society*, **167**, 167516 (2020), doi: 10.1149/1945-7111/abcb65

T. Nazarenus, J. Kita, R. Moos, J. Exner:
Laser-Annealing of Thermoelectric $CuFe_{0.98}Sn_{0.02}O_2$ Films Produced by Powder Aerosol Deposition Method
open access - free *Advanced Materials Interfaces*, **7**, 2001114 (2020), doi: 10.1002/admi.202001114

Y. Jännsch, J.J. Leung, M. Hämmerle, E. Magori, K. Wiesner-Fleischer, E. Simon, M. Fleischer, R. Moos:
Pulsed potential electrochemical CO_2 reduction for enhanced stability and catalyst reactivation of copper electrodes
open access - free *Electrochemistry Communications*, **121**, 106861 (2020), doi: 10.1016/j.elecom.2020.106861

A. Ruchets, N. Donker, J. Zosel, D. Schönauer-Kamin, R. Moos, U. Guth, M. Mertig:
Cyclic and square-wave voltammetry for selective simultaneous NO and O_2 gas detection by means of solid electrolyte sensors
open access - free *Journal of Sensors and Sensor Systems*, **9**, 355-362 (2020), doi: 10.5194/jsss-9-355-2020

C. Steiner, S. Walter, V. Malashchuk, G. Hagen, I. Kogut, H. Fritze, R. Moos:
Determination of the Dielectric Properties of Storage Materials for Exhaust Gas Aftertreatment Using the Microwave Cavity Perturbation Method
open access - free *Sensors*, **20**, 6024 (2020), doi: 10.3390/s20216024

J. Herrmann, G. Hagen, J. Kita, F. Noack, D. Bleicker, R. Moos:
Multi-gas sensor to detect simultaneously nitrogen oxides and oxygen
open access - free *Journal of Sensors and Sensor Systems*, **9**, 327-335 (2020), doi: 10.5194/jsss-9-327-2020

N. Donker, A. Ruchets, D. Schönauer-Kamin, J. Zosel, U. Guth, R. Moos:
Influence of Pt paste and the firing temperature of screen-printed electrodes on the NO detection by pulsed polarization
open access - free *Journal of Sensors and Sensor Systems*, **9**, 293-300 (2020), doi: 10.5194/jsss-9-293-2020

C. Witt, A. Schmid, N. Leupold, M. Schultz, J. Höcker, A. Baumann, R. Moos, F. Panzer:
Impact of Pressure and Temperature on the Compaction Dynamics and Layer Properties of Powder-Pressed Methylammonium Lead Halide Thick Films
ACS Applied Electronic Materials, **2**, 2619-2628 (2020), doi: 10.1021/acsaelm.0c00493

D. Schönauer-Kamin, I. Marr, M. Zehentbauer, C. Zängle, R. Moos:
Characterization of the sensitive material for a resistive NO_x gas dosimeter by DRIFT spectroscopy
Sensors and Actuators B: Chemical, **320**, 128568 (2020), doi: 10.1016/j.snb.2020.128568

J. Exner, T. Nazarenus, D. Hanft, J. Kita, R. Moos:
What Happens during Thermal Post-Treatment of Powder Aerosol Deposited Functional Ceramic Films? Explanations Based on an Experiment-Enhanced Literature Survey
open access - free *Advanced Materials*, **32**, 1908104 (2020), doi: 10.1002/adma.201908104

S. Walter, P. Schwanzer, G. Hagen, G. Haft, H.-P. Rabl, M. Dietrich, R. Moos:
Modelling the Influence of Different Soot Types on the Radio-Frequency-Based Load Detection of Gasoline Particulate Filters
open access - free *Sensors*, **20**, 2659 (2020), doi: 10.3390/s20092659

M. Hahn, D. Rosenbach, A. Krimalowski, T. Nazarenus, R. Moos, M. Thelakkat, M.A. Danzer:
Investigating solid polymer and ceramic electrolytes for lithium-ion batteries by means of an extended Distribution of Relaxation Times analysis
Electrochimica Acta, **344**, 136060 (2020), doi: 10.1016/j.electacta.2020.136060

M. Streibl, S. Werner, J. Kaschta, D.W. Schubert, R. Moos:
The Influence of Nanoparticles and their Functionalization on the Dielectric Properties of Biaxially Oriented Polypropylene for Power Capacitors
IEEE Transactions on Dielectrics and Electrical Insulation, **27**, 468-475 (2020), doi: 10.1109/TDEI.2019.008521

J. Exner, T. Nazarenus, J. Kita, R. Moos:
Dense Y-doped ion conducting perovskite films of $BaZrO_3$, $BaSnO_3$, and $BaCeO_3$ for SOFC applications produced by powder aerosol deposition at room temperature
International Journal of Hydrogen Energy, **45**, 10000-10016 (2020), doi: 10.1016/j.ijhydene.2020.01.164

U. Schadeck, T. Gerdes, W. Krenkel, R. Moos:
A Glass Platelet Coating on Battery Electrodes and Its Use as a Separator for Lithium-Ion Batteries
Journal of Electrochemical Conversion and Storage, **17**, 034502 (2020), doi: 10.1115/1.4045783

Doctoral Theses

M. Streibl:
Polymere Dielektrika für Leistungskondensatoren
(Polymer dielectrics for power capacitors)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zu Materialien und Prozessen, Bd. 16, Shaker-Verlag, Düren (2020), ISBN: 978-3-8440-7564-9

M. Bektas:
$BaFe_{(1-x)-0.01}Al_{0.01}Ta_xO_{3-\delta}$: A material for temperature independent resistive and thermoelectric oxygen sensors
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zur Sensorik und Messtechnik, Bd. 31, Shaker-Verlag, Düren (2020), ISBN: 978-3-8440-7459-8

U. Schadeck:
Entwicklung glasbasierter Separatoren für Lithium-Ionen-Batterien
(Development of glass-based separators for lithium-ion batteries)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zu Materialien und Prozessen, Bd. 15, Shaker-Verlag, Düren (2020), ISBN: 978-3-8440-7225-9

J. Metzner:
Entwicklung einer neuartigen Biosensor-Plattform zur Protein-Detektion
(Development of a novel biosensor platform for protein detection)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zur Sensorik und Messtechnik, Bd. 30, Shaker-Verlag, Düren (2020), ISBN: 978-3-8440-7209-9

Book Contributions

S. Walter, P. Schwanzer, G. Hagen, G. Haft, M. Dietrich, H.-P. Rabl, R. Moos:
Hochfrequenzsensorik zur direkten Beladungserkennung von Benzinpartikelfiltern
In: T. Tille (Hrsg.), Automobil-Sensorik 3 - Prinzipien, Technologien und Anwendungen, Springer-Verlag, Heidelberg (2020), p. 185-208, 978-3-662-61259-0 (gedruckt), ISBN 978-3-662-61260-6 (online), doi: 10.1007/978-3-662-61260-6_7

F. Rettig, R. Moos:
Semiconducting direct thermoelectric gas sensors
In: R. Jaaniso, O.K. Tan (eds.), Semiconductor gas sensors, 2nd edition, Woodhead Publishing Ltd., Cambridge, UK (2019), p. 347-384,
ISBN 978-0-08-102559-8 (print), ISBN 978-0-08-102560-4 (online), doi: 10.1016/B978-0-08-102559-8.00011-2

Year 2019

Peer Reviewed Journals

U. Schadeck, M. Hahn, T. Gerdes, W. Krenkel, M.A. Danzer, R. Moos:
Sodium Borosilicate Glass Separators as an Electrolyte Additive Donor for Improving the Electrochemical Performance of Lithium-Ion Batteries
Journal of the Electrochemical Society, **166**, A3416-A3424 (2019), doi: 10.1149/2.1011914jes

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

M. Schubert, D. Hanft, T. Nazarenus, J. Exner, M. Schubert, P. Nieke, P. Glosse, N. Leupold, J. Kita, R. Moos:
Powder aerosol deposition method — novel applications in the field of sensing and energy technology
open access - free *Functional Materials Letters*, **12**, 1930005 (2019), doi: 10.1142/S1793604719300056

N. Müller, S. Lang, R. Moos:
Influence of Ambient Conditions on Electrical Partial Discharge Resistance of Epoxy Anhydride Based Polymers Using IEC 60343 Method
IEEE Transactions on Dielectrics and Electrical Insulation, **26**, 1463-1470 (2019), doi: 10.1109/TDEI.2019.008070

N. Leupold, K. Schötz, S. Cacovich, I. Bauer, M. Schultz, M. Daubinger, L. Kaiser, A. Rebai, J. Rousset, A. Köhler, P. Schulz, R. Moos, F. Panzer:
High Versatility and Stability of Mechanochemically Synthesized Halide Perovskite Powders for Optoelectronic Devices
ACS Applied Materials & Interfaces, **11**, 30259-30268 (2019), doi: 10.1021/acsami.9b09160

C. Steiner, V. Malashchuk, D. Kubinski, G. Hagen, R. Moos:
Catalyst State Diagnosis of Three-Way Catalytic Converters Using Different Resonance Parameters—A Microwave Cavity Perturbation Study
open access - free *Sensors*, **19**, 3559 (2019), doi: 10.3390/s19163559

J. Exner, J. Kita, R. Moos:
In- and through-plane conductivity of 8YSZ films produced at room temperature by aerosol deposition
Journal of Materials Science, **54**, 13619-13634 (2019), doi: 10.1007/s10853-019-03844-7

S. Bresch, B. Mieller, D. Schönauer-Kamin, R. Moos, F. Giovanelli, T. Rabe:
Influence of pressure assisted sintering and reaction sintering on microstructure and thermoelectric properties of bi-doped and undoped calcium cobaltite
Journal of Applied Physics, **126**, 075102 (2019), doi: 10.1063/1.5107476

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

M. Schubert, J. Kita, C. Münch, R. Moos:
Investigation of the in situ calcination of aerosol co-deposited NiO-Mn_2O_3 films
Functional Materials Letters, **12**, 1950039 (2019), doi: 10.1142/S1793604719500395

M. Dietrich, G. Hagen, R. Moos:
Dielectric properties and temperature dependency of automotive catalyst coatings and substrate materials: Experimental results, influences and approximation approach
Functional Materials Letters, **12**, 195024 (2019), doi: 10.1142/S1793604719500243

M. Schubert, C. Münch, S. Schuurman, V. Poulain, J. Kita, R. Moos:
Novel Method for NTC Thermistor Production by Aerosol Co-Deposition and Combined Sintering
open access - free *Sensors*, **19**, 1632 (2019), doi: 10.3390/s19071632

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

C. Steiner, A. Gänzler, M. Zehentbauer, G. Hagen, M. Casapu, S. Müller, J.-D. Grunwaldt, R. Moos:
Oxidation State and Dielectric Properties of Ceria-Based Catalysts by Complementary Microwave Cavity Perturbation and X-Ray Absorption Spectroscopy Measurements
Topics in Catalysis, **62**, 227-236 (2019), doi: 10.1007/s11244-018-1110-3

M. Dietrich, G. Hagen, R. Moos:
Modelling Both the NH_3 Storage on Automotive SCR Catalysts and the Radio-Frequency-Based Response
Topics in Catalysis, **62**, 172-178 (2019), doi: 10.1007/s11244-019-01140-x

S. Walter, L. Ruwisch, U. Göbel, G. Hagen, R. Moos:
Radio Frequency-Based Determination of the Oxygen and the NO_x Storage Level of NO_x Storage Catalysts
Topics in Catalysis, **62**, 157-163 (2019), doi: 10.1007/s11244-018-1079-y

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

T. Michlik, A. Rosin, T. Gerdes, R. Moos:
Improved Discharge Capacity of Zinc Particles by Applying Bismuth-Doped Silica Coating for Zinc-Based Batteries
open access - free *Batteries*, **5**, 32 (2019), doi: 10.3390/batteries5010032

M. Schubert, N. Leupold, J. Kita, R. Moos:
Oxygen partial pressure dependency of the electrical conductivity of aerosol deposited alumina films between 650 °C and 900 °C
Materials Letters, **245**, 208-210 (2019), doi: 10.1016/j.matlet.2019.02.094

T. Ritter, J. Lattus, G. Hagen, R. Moos:
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
ACS Applied Materials & Interfaces, **11**, 8097−8105 (2019), doi: 10.1021/acsami.8b22104

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

P. Nieke, J. Kita, M. Häming, R. Moos:
Manufacturing Dense Thick Films of Lunar Regolith Simulant EAC-1 at Room Temperature
open access - free *Materials*, **12**, 487 (2019), doi: 10.3390/ma12030487

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

J. Exner, M. Schubert, D. Hanft, J. Kita, R. Moos:
How to treat powders for the room temperature aerosol deposition method to avoid porous, low strength ceramic films
Journal of the European Ceramic Society, **39**, 592-600 (2019), doi: 10.1016/j.jeurceramsoc.2018.08.008

Doctoral Theses

M. Schubert:
Aerosolbasierte Kaltabscheidung für die Herstellung von schichtbasierten NTC-Thermistorbauteilen
(Powder aerosol deposition for the production of film-type NTC thermistor devices)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zur Sensorik und Messtechnik, Bd. 29, Shaker-Verlag, Düren (2019), ISBN: 978-3-8440-7041-5

D. Hanft:
Aerosolbasierte Kaltabscheidung Lithium-Ionen leitender Festelektrolytschichten mit Granatstruktur
(Powder aerosol-based deposition of lithium ion conducting solid electrolyte layers with garnet structure)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zu Materialien und Prozessen, Bd. 14, Shaker-Verlag, Düren (2019), ISBN: 978-3-8440-7044-6

A. Engelbrecht:
Ausgewählte Materialien und Methoden für die elektrochemische Reduktion von CO_2
(Materials and methods for the electrochemical reduction of CO_2)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zu Materialien und Prozessen, Bd. 13, Shaker-Verlag, Düren (2019), ISBN: 978-3-8440-7081-1

M. Feulner:
Methoden der Rußdetektion im Dieselabgas
(Methods for soot detection in diesel exhausts)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zur Sensorik und Messtechnik, Bd. 28, Shaker-Verlag, Düren (2019), ISBN: 978-3-8440-6926-6

T. Ritter:
Untersuchung und Modellierung der elektrochemischen Vorgänge von Elektroden für Mischpotential-Sensoren
(Investigation and modelling of electrochemical processes of electrodes for mixed potential sensors)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zur Sensorik und Messtechnik, Bd. 27, Shaker-Verlag, Düren (2019), ISBN: 978-3-8440-6906-8

Y. Zheng:
Untersuchung von Sauerstoffreaktionen an Pt-basierten Modellelektroden auf Yttriumoxid-stabilisiertem Zirconiumdioxid
(Investigation of oxygen reactions at Pt- based model electrodes on yttria-stabilized zirconium dioxide)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zu Materialien und Prozessen, Bd. 12, Shaker-Verlag, Aachen (2019), ISBN: 978-3-8440-6800-9

M. Schubert:
Die aerosolbasierte Kaltabscheidung von Aluminiumoxid: Verfahren, Hintergründe, Anwendungen
(Aerosol deposition of aluminum oxide: process, background, and applications)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zu Materialien und Prozessen, Bd. 11, Shaker-Verlag, Aachen (2019), ISBN: 978-3-8440-6725-5

T.N.H. Hanus:
Herstellung und Charakterisierung von Aluminiumoxidschichten nach dem Verfahren der aerosolbasierten Kaltabscheidung
(Production and characterization of aluminum oxide layers by the aerosol deposition method)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zu Materialien und Prozessen, Bd. 10, Shaker-Verlag, Aachen (2019), ISBN: 978-3-8440-6663-0

T. Stöcker:
Delafossite für die thermoelektrische Energiewandlung bei hohen Temperaturen
(Delafossites for thermoelectric energy conversion at high temperatures)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zu Materialien und Prozessen, Bd. 9, Shaker-Verlag, Aachen (2019), ISBN: 978-3-8440-6496-4

M.L. Anke:
Bestimmung der thermischen Stabilität von ionischen Fluiden auf porösen Trägern und festen Katalysatoren mittels elektrischer Sensoren
(Determination of the thermal stability of ionic fluids on porous supports and on solid catalysts by electrical sensors)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zur Sensorik und Messtechnik, Bd. 26, Shaker-Verlag, Aachen (2019), ISBN: 978-3-8440-6508-4

J. Exner:
Aerosolbasierte Kaltabscheidung von Funktionskeramiken für neuartige Anwendungen im Bereich der Sensorik und Energiewandlung
(Aerosol deposition of functional ceramics for novel applications in the field of sensor technology and energy conversion)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zu Materialien und Prozessen, Bd. 8, Shaker-Verlag, Aachen (2019), ISBN: 978-3-8440-6399-8

Year 2018

Peer Reviewed Journals

M. Streibl, R. Karmazin, R. Moos:
Materials and Applications of Polymer Films for Power Capacitors with Special Respect to Nanocomposites
open access - free *IEEE Transactions on Dielectrics and Electrical Insulation*, **25**, 2429-2442 (2018), doi: 10.1109/TDEI.2018.007392

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

M. Schubert, C. Münch, S. Schuurman, V. Poulain, J. Kita, R. Moos:
Thermal Treatment of Aerosol Deposited $NiMn_2O_4$ NTC Thermistors for Improved Aging Stability
open access - free *Sensors*, **18**, 3982 (2018), doi: 10.3390/s18113982

J. Exner, H. Pöpke, F.-M. Fuchs, J. Kita, R. Moos:
Annealing of Gadolinium-Doped Ceria (GDC) Films Produced by the Aerosol Deposition Method
open access - free *Materials*, **11**, 2072 (2018), doi: 10.3390/ma11112072

G. Hagen, C. Spannbauer, M. Feulner, J. Kita, A. Müller, R. Moos:
Conductometric Soot Sensors: Internally Caused Thermophoresis as an Important Undesired Side Effect
open access - free *Sensors*, **18**, 3531 (2018), doi: 10.3390/s18103531

J. Zimmermann-Ptacek, M. Muggli, S. Wildhack, K. Hintzer, T. Gerdes, M. Willert-Porada, R. Moos:
Thermal, dielectric, and mechanical properties of h-BN-filled PTFE composites
Journal of Applied Polymer Science, **135**, 46859 (2018), doi: 10.1002/APP.46859

S. Bresch, B. Mieller, F. Delorme, C. Chen, M. Bektas, R. Moos, T. Rabe:
Influence of Reaction-Sintering and Calcination Conditions on Thermoelectric Properties of Sm-doped Calcium Manganate $CaMnO_3$
open access - free *Journal of Ceramic Science and Technology*, **9**, 289-300 (2018), doi: 10.4416/JCST2018-00017

T. Stöcker, R. Moos:
Effect of Oxygen Partial Pressure on the Phase Stability of Copper-Iron Delafossites at Elevated Temperatures
open access - free *Materials*, **11**, 1888 (2018), doi: 10.3390/ma11101888

A. Engelbrecht, C. Uhlig, O. Stark, M. Hämmerle, G. Schmid, E. Magori, K. Wiesner-Fleischer, M. Fleischer, R. Moos:
On the Electrochemical CO_2 Reduction at Copper Sheet Electrodes with Enhanced Long-Term Stability by Pulsed Electrolysis
open access - free *Journal of the Electrochemical Society*, **165**, J3059-J3068 (2018), doi: 10.1149/2.0091815jes

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

D. Hanft, P. Glosse, S. Denneler, T. Berthold, M. Oomen, S. Kauffmann-Weiss, F. Weis, W. Häßler, B. Holzapfel, R. Moos:
The Aerosol Deposition Method: A Modified Aerosol Generation Unit to Improve Coating Quality
open access - free *Materials*, **11**, 1572 (2018), doi: 10.3390/ma11091572

D. Hanft, M. Bektas, R. Moos:
Powder pre-treatment for aerosol deposition of tin dioxide coatings for gas sensors
open access - free *Materials*, **11**, 1342 (2018), doi: 10.3390/ma11081342

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

S. Bresch, B. Mieller, C. Selleng, T. Stöcker, R. Moos, T. Rabe:
Influence of the calcination procedure on the thermoelectric properties of calcium cobaltite $Ca_3Co_4O_9$
Journal of Electroceramics, **40**, 225-234 (2018), doi: 10.1007/s10832-018-0124-3

M. Schubert, N. Leupold, J. Exner, J. Kita, R. Moos:
High-Temperature Electrical Insulation Behavior of Alumina Films Prepared at Room Temperature by Aerosol Deposition and Influence of Annealing Process and Powder Impurities
Journal of Thermal Spray Technology, **27**, 870-879 (2018), doi: 10.1007/s11666-018-0719-x

O. Isakin, S. Hiltl, O. Struck, M. Willert-Porada, R. Moos:
High-Yield Preparation of ZnO Nanoparticles on Exfoliated Graphite as Anode Material for Lithium Ion Batteries and the Effect of Particle Size as well as of Conductivity on the Electrochemical Performance of Such Composites
open access - free *Batteries*, **4**, 24 (2018), doi: 10.3390/batteries4020024

N. Leupold, M. Schubert, J. Kita, R. Moos:
Influence of high temperature annealing on the dielectric properties of alumina films prepared by the aerosol deposition method
Functional Materials Letters, **11**, 1850022 (2018), doi: 10.1142/S1793604718500224

J. Metzner, K. Luckert, K. Lemuth, M. Hämmerle, R. Moos:
Towards an Electrochemical Immunosensor System with Temperature Control for Cytokine Detection

open access - free *Sensors*, **18**, 1309 (2018), doi: 10.3390/s18051309

U. Schadeck, K. Kyrgyzbaev, H. Zettl, T. Gerdes, R. Moos:
Flexible, Heat-Resistant, and Flame-Retardant Glass Fiber Nonwoven/Glass Platelet Composite Separator for Lithium-Ion Batteries
open access - free *Energies*, **11**, 999 (2018), doi: 10.3390/en11040999

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

S.A. Müller, D. Degler, C. Feldmann, M. Türk, R. Moos, K. Fink, F. Studt, D. Gerthsen, N. Bârsan, J.-D. Grunwaldt:
Exploiting Synergies in Catalysis and Gas Sensing using Noble Metal-Loaded Oxide Composites
ChemCatChem, **10**, 864-880 (2018), doi: 10.1002/cctc.201701545

T. Michlik, M. Schmid, A. Rosin, T. Gerdes, R. Moos:
Mechanical Coating of Zinc Particles with Bi_2O_3-Li_2O-ZnO Glasses as Anode Material for Rechargeable Zinc-Based Batteries
open access - free *Batteries*, **4**, 12 (2018), doi: 10.3390/batteries4010012

G. Hagen, A. Harsch, R. Moos:
A pathway to eliminate the gas flow dependency of a hydrocarbon sensor for automotive exhaust applications
open access - free *Journal of Sensors and Sensor Systems*, **7**, 79-84 (2018), doi: 10.5194/jsss-7-79-2018

O. Isakin, S. Hiltl, R. Schneider, J. Bleisteiner, O. Struck, K. Schindler, M. Willert-Porada, R. Moos:
Ultrasound-assisted one-pot syntheses of ZnO nanoparticles that are homogeneously adsorbed on exfoliated graphite and a simplified method to determine the graphite layer thickness in such composites
Journal of Materials Science, **53**, 6586-6601 (2018), doi: 10.1007/s10853-018-2023-z

U. Schadeck, K. Kyrgyzbaev, T. Gerdes, M. Willert-Porada, R. Moos:
Porous and non-porous micrometer-sized glass platelets as separators for lithium-ion batteries
Journal of Membrane Science, **550**, 518-525 (2018), doi: 10.1016/j.memsci.2017.10.061

Y. Zheng, U. Sauter, R. Moos:
Oxygen transport paths in screen-printed Pt-Al_2O_3 composite model electrodes on YSZ
Solid State Ionics, **316**, 53-58 (2018), doi: 10.1016/j.ssi.2017.12.026

M. Bektas, T. Stöcker, G. Hagen, R. Moos:
On the defect chemistry of $BaFe_{0.89}Al_{0.01}Ta_{0.1}O_{3-\delta}$, a material for temperature independent resistive and thermoelectric oxygen sensors
Solid State Ionics, **316**, 1-8 (2018), doi: 10.1016/j.ssi.2017.12.017

M. Schubert, C. Münch, S. Schuurman, V. Poulain, J. Kita, R. Moos:
Characterization of Nickel Manganite NTC thermistor films prepared by Aerosol Deposition at room temperature
Journal of the European Ceramic Society, **38**, 613-619 (2018), doi: 10.1016/j.jeurceramsoc.2017.09.005

T. Ritter, G. Hagen, J. Lattus, R. Moos:
Solid state mixed-potential sensors as direct conversion sensors for automotive catalysts
Sensors and Actuators B: Chemical, **255**, 3025-3032 (2018) doi: 10.1016/j.snb.2017.09.126

Doctoral Theses

O. Isakin
ZnO-Graphit-Komposite als Anodenmaterialien für Lithium-Ionen-Batterien
(ZnO graphite composites as anode materials for lithium ion batteries)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zu Materialien und Prozessen, Bd. 7, Shaker-Verlag, Aachen (2018), ISBN: 978-3-8440-6279-3, doi: 10.2370/9783844062793

F. Schubert:
Tian-Calvet-Kalorimeter mit Wärmestromsensoren in keramischer Mehrlagentechnik
(Tian-Calvet calorimeter with heat flow sensors in ceramic multilayer technology)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zur Sensorik und Messtechnik, Bd. 24, Shaker-Verlag, Aachen (2018), ISBN: 978-3-8440-6127-7

M. Dietrich:
Anwendung der hochfrequenzgestützten Zustandsdiagnose zur Überwachung und Regelung von SCR-Katalysatoren
(Application of radio frequency-based techniques for monitoring and control of SCR catalysts)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zur Sensorik und Messtechnik, Bd. 23, Shaker-Verlag, Aachen (2018), ISBN: 978-3-8440-5782-9

Book contributions

R. Moos, M. Dietrich:
Beladungsregelung eines NH_3-SCR-Katalysator-Systems auf minimale NO_x-Emissionen mittels Hochfrequenzsensorik
In: T. Tille (Hrsg.), Automobil-Sensorik 2 - Systeme, Technologien und Applikationen, Springer-Verlag, Heidelberg (2018), p. 225-244, ISBN 978-3-662-56309-0 (gedruckt), ISBN 978-3-662-56310-6 (online), doi: 10.1007/978-3-662-56310-6_10

Year 2017

Peer Reviewed Journals

M. Schubert, J. Kita, C. Münch, R. Moos:
Analysis of the characteristics of thick-film NTC thermistor devices manufactured by screen-printing and firing technique and by room temperature aerosol deposition method (ADM)
Functional Materials Letters, **10**, 1750073 (2017), doi: 10.1142/S1793604717500734

T. Ritter, S. Wiegärtner, G. Hagen, R. Moos:
Simulation of a thermoelectric gas sensor that determines hydrocarbon concentrations in exhausts and the light-off temperature of catalyst materials
open access - free *Journal of Sensors and Sensor Systems*, **6**, 395-405 (2017), doi: 10.5194/jsss-6-395-2017

M. Dietrich, G. Hagen, W. Reitmeier, K. Burger, M. Hien, P. Grass, D. Kubinski, J. Visser, R. Moos:
Radio-Frequency-Controlled Urea Dosing for NH_3-SCR Catalysts: NH_3 Storage Influence to Catalyst Performance under Transient Conditions
open access - free *Sensors*, **17**, 2746 (2017), doi: 10.3390/s17122746

A. Bogner, C. Steiner, S. Walter, J. Kita, G. Hagen, R. Moos:
Planar Microstrip Ring Resonators for Microwave-Based Gas Sensing: Design Aspects and Initial Transducers for Humidity and Ammonia Sensing
open access - free *Sensors*, **17**, 2422 (2017), doi: 10.3390/s17102422

M. Dietrich, C. Steiner, G. Hagen, R. Moos:
Radio-Frequency-Based Urea Dosing Control for Diesel Engines with Ammonia SCR Catalysts
SAE International Journal of Engines, **10**, 1638-1645 (2017), doi: 10.4271/2017-01-0945

M. Daab, P. Loch, W. Milius, D. Schönauer-Kamin, M. Schubert, A. Wunder, R. Moos, F.E Wagner, J. Breu:
Single-Crystal Structure and Electronic Conductivity of Melt Synthesized Fe-rich, near End-Member Ferro-Kinoshitalite
Zeitschrift für anorganische und allgemeine Chemie, **643**, 1661-1667 (2017) doi: 10.1002/zaac.201700265

M.-L. Anke, M. Hämmerle, J. Gerchau, R. Moos, A. Jess:
Radio Frequency-Based In Situ Determination of the Mass Loss of Supported Ionic Liquids
Chemical Engineering and Technology, **40**, 1660-1665 (2017), doi: 10.1002/ceat.201700190

M. Schubert, M. Hahn, J. Exner, J. Kita, R. Moos:
Effect of substrate hardness and surface roughness on the film formation of aerosol-deposited ceramic films
Functional Materials Letters, **10**, 1750045 (2017), doi: 10.1142/S179360471750045X

J. Exner, G. Albrecht, D. Schönauer-Kamin, J. Kita, R. Moos:
Pulsed Polarization-Based NO_x Sensors of YSZ Films Produced by the Aerosol Deposition Method and by Screen-Printing
open access - free *Sensors*, **17**, 1715 (2017), doi: 10.3390/s17081715

M. Dietrich, G. Hagen, W. Reitmeier, K. Burger, M. Hien, P. Grass, D. Kubinski, J. Visser, R. Moos:
Radio-Frequency-Based NH_3-Selective Catalytic Reduction Catalyst Control: Studies on Temperature Dependency and Humidity Influences
open access - free *Sensors*, **17**, 1615 (2017), doi: 10.3390/s17071615

O. Isakin, R. Schneider, M. Ringl, O. Struck, T. Gerdes, M. Willert-Porada, R. Moos:
High-yield synthesis of ZnO nanoparticles homogeneously coated on exfoliated graphite and simplified method to determine the surface coverage
Surface and Coatings Technology, **325**, 445-453 (2017), doi: 10.1016/j.surfcoat.2017.07.002

D. Hanft, J. Exner, R. Moos:
Thick-films of garnet-type lithium ion conductor prepared by the Aerosol Deposition Method: The role of morphology and annealing treatment on the ionic conductivity
Journal of Power Sources, **361**, 61-69 (2017), doi: 10.1016/j.jpowsour.2017.06.061

T. Ritter, G. Hagen, J. Kita, S. Wiegärtner, F. Schubert, R. Moos:
Self-Heated HTCC-based Ceramic Disc for Mixed Potential Sensors and for Direct Conversion Sensors for Automotive Catalysts
Sensors and Actuators B: Chemical, **248**, 793-802 (2017), doi: 10.1016/j.snb.2016.11.079

I. Marr, R. Moos:
Resistive NO_x dosimeter to detect very low NO_x concentrations – Proof-of-principle and comparison with classical sensing devices
Sensors and Actuators B: Chemical, **248**, 848-855 (2017), doi: 10.1016/j.snb.2016.12.112

M. Schütt, M. Gallinger, R. Moos:
Particulate Filter Substrates with SCR-Functionality Manufactured by Co-extrusion of Ceramic Substrate and SCR Active Material
Topics in Catalysis, **60**, 204-208 (2017), doi: 10.1007/s11244-016-0598-7

D. Rauch, M. Dietrich, T. Simons, U. Simon, A. Porch, R. Moos:
Microwave Cavity Perturbation Studies on H-form and Cu Ion-Exchanged SCR Catalyst Materials: Correlation of Ammonia Storage and Dielectric Properties
Topics in Catalysis, **60**, 243-249 (2017), doi: 10.1007/s11244-016-0605-z

G. Hagen, N. Leupold, S. Wiegärtner, R. Moos:
Sensor Tool for Fast Catalyst Material Characterization
Topics in Catalysis, **60**, 312-317 (2017), doi: 10.1007/s11244-016-0617-8

M. Feulner, F. Seufert, A. Müller, G. Hagen R. Moos:
Influencing Parameters on the Microwave-Based Soot Load Determination of Diesel Particulate Filters
Topics in Catalysis, **60**, 374-380 (2017), doi: 10.1007/s11244-016-0626-7

S. Kauffmann-Weiss, W. Hässler, E. Guenther, J. Scheiter, S. Denneler, P. Glosse, T. Berthold, M. Oomen, T. Arndt, T. Stöcker, D. Hanft, R. Moos, M. Weiss, F. Weis, B. Holzapfel:
Superconducting properties of thick films on Hastelloy prepared by the Aerosol Deposition Method with ex-situ MgB_2 powder
IEEE Transactions on Applied Superconductivity, **27**, 6200904 (2017), doi: 10.1109/TASC.2017.2669479

M. Feulner, G. Hagen, K. Hottner, S. Redel, A. Müller, R. Moos:
Comparative Study of Different Methods for Soot Sensing and Filter Monitoring in Diesel Exhausts
open access - free *Sensors*, **17**, 400 (2017), doi: 10.3390/s17020400

A. Engelbrecht, M. Hämmerle, R. Moos, M. Fleischer, G. Schmid:
Improvement of the selectivity of the electrochemical conversion of CO_2 to hydrocarbons using cupreous electrodes with in-situ oxidation by oxygen
Electrochimica Acta, **224**, 642-648 (2017), doi: 10.1016/j.electacta.2016.12.059

Doctoral Theses

D. Rauch:
Mikrowellengestützte Untersuchung des NH_3-Speicherverhaltens von SCR-Katalysatormaterialien
(Microwave-based Characterization of the Ammonia Loading of SCR Catalysts Materials)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zur Sensorik und Messtechnik, Bd. 20, Shaker-Verlag, Aachen (2017), ISBN: 978-3-8440-5081-3

I. Marr:
Materialien für dosimeterartige Gassensoren zur Detektion im ppm- und Sub-ppm-Bereich
(Materials for dosimeter-type gas sensors for ppm- and sub-ppm-detection)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zur Sensorik und Messtechnik, Bd. 19, Shaker-Verlag, Aachen (2017), ISBN: 978-3-8440-5022-6

G. Beulertz:
Anwendung der hochfrequenzgestützten Zustandsdiagnose für Dreiwegekatalysatoren
(Application of the microwave-based state diagnosis for three way catalysts)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zur Sensorik und Messtechnik, Bd. 18, Shaker-Verlag, Aachen (2017), ISBN: 978-3-8440-4988-6

Year 2016

Peer Reviewed Journals

P. Chen, R. Moos, U. Simon:
Metal Loading Affects the Proton Transport Properties and the Reaction Monitoring Performance of Fe-ZSM-5 and Cu-ZSM-5 in NH_3-SCR
Journal of Physical Chemistry C, **120**, 25361-25370 (2016), doi: 10.1021/acs.jpcc.6b07353

F. Schubert, M. Gollner, J. Kita, F. Linseis, R. Moos:
Optimization of a sensor for a Tian-Calvet calorimeter with LTCC-based sensor discs
open access - free *Journal of Sensors and Sensors Systems*, **5**, 381-388 (2016), doi: 10.5194/jsss-5-381-2016

P. Chen, M. Jabłońska, P. Weide, T. Caumanns, T. Weirich, M. Muhler, R. Moos, R. Palkovits, U. Simon:
Formation and Effect of NH_4^+ Intermediates in NH_3-SCR over Fe-ZSM-5 Zeolite Catalysts
ACS Catalysis, **6**, 7696-7700 (2016), doi: 10.1021/acscatal.6b02496

G. Hagen, M. Feulner, R. Werner, M. Schubert, A. Müller, G. Rieß, D. Brüggemann, R. Moos:
Capacitive soot sensor for diesel exhausts
Sensors and Actuators B: Chemical, **236**, 1020-1027 (2016), doi: 10.1016/j.snb.2016.05.006

P. Chen, J. Simböck, S. Schönebaum, D. Rauch, T. Simons, R. Palkovits, R. Moos, U. Simon:
Monitoring NH_3 storage and conversion in Cu-ZSM-5 and Cu-SAPO-34 catalysts for NH_3-SCR by simultaneous impedance and DRIFT spectroscopy
Sensors and Actuators B: Chemical, **236**, 1075–1082 (2016), doi: 10.1016/j.snb.2016.05.164

R. Moos, D. Rauch, M. Votsmeier, D. Kubinski:
Review on Radio Frequency Based Monitoring of SCR and Three Way Catalysts
Topics in Catalysis, **59**, 961-969 (2016), doi: 10.1007/s11244-016-0575-1

F. Panzer, S. Baderschneider, T. Gujar, T. Unger, S. Bagnich, H. Bässler, M. Jakoby, S. Hüttner, J. Köhler, R. Moos, M. Thelakkat, R. Hildner, A. Köhler:
Reversible Laser-Induced Amplified Spontaneous Emission from Coexisting Tetragonal and Orthorhombic Phases in Hybrid Lead Halide Perovskites
Advanced Optical Materials, **4**, 917-928 (2016), doi: 10.1002/adom.201500765

F. Schubert, M. Gollner, J. Kita, F. Linseis, R. Moos:
First steps to develop a sensor for a Tian-Calvet calorimeter with increased sensitivity
open access - free *Journal of Sensors and Sensors Systems*, **5**, 205-212 (2016), doi: 10.5194/jsss-5-205-2016

Y. Zheng, U. Sauter, R. Moos:
Investigation of Oxygen Transport Paths in Geometrically Defined Thick-Film Composite Pt Electrodes on YSZ
Journal of the Electrochemical Society, **163**, F877-F884 (2016), doi: 10.1149/2.1081608jes

P. Chen, D. Rauch, P. Weide, S. Schönebaum, T. Simons, M. Muhler, R. Moos, U. Simon:
The effect of Cu and Fe cations on NH_3-supported proton transport in $DeNO_x$-SCR zeolite catalysts
Catalysis Science & Technology, **6**, 3362-3366 (2016), doi: 10.1039/C6CY00452K

F. Panzer, D. Hanft, T.P. Gujar, F.-J. Kahle, M. Thelakkat, A. Köhler, R. Moos:
Compact Layers of Hybrid Halide Perovskites Fabricated via the Aerosol Deposition Process – Uncoupling Material Synthesis and Layer Formation
open access - free *Materials*, **9**, 277 (2016), doi: 10.3390/ma9040277

T. Stöcker, J. Exner, M. Schubert, M. Streibl, R. Moos:
Influence of Oxygen Partial Pressure during Processing on the Thermoelectric Properties of Aerosol-Deposited $CuFeO_2$
open access - free *Materials*, **9**, 227 (2016), doi: 10.3390/ma9040227

J. Exner, M. Schubert, D. Hanft, T. Stöcker, P. Fuierer, R. Moos:
Tuning of the electrical conductivity of $Sr(Ti,Fe)O_3$ oxygen sensing films by aerosol co-deposition with Al_2O_3
Sensors and Actuators B: Chemical, **230**, 427-433 (2016), doi: 10.1016/j.snb.2016.02.033

A. Brandenburg, E. Wappler, J. Kita, R. Moos:
Miniaturized ceramic DSC device with strain gauge-based mass detection - First steps to realize a fully integrated DSC/TGA device
Sensors and Actuators A: Physical, **241**, 145-151 (2016), doi: 10.1016/j.sna.2016.02.011

F. Schubert, S. Wollenhaupt, J. Kita, G. Hagen, R. Moos:
Platform to develop exhaust gas sensors manufactured by glass-solder-supported joining of sintered yttria-stabilized zirconia
open access - free *Journal of Sensors and Sensor Systems*, **5**, 25-32 (2016), doi: 10.5194/jsss-5-25-2016

D. Ortolino, J. Kita, K. Beart, R. Wurm, S. Kleinewig, A. Pletsch, R. Moos:
Failure of electrical vias manufactured in thick-film technology when loaded with short high current pulses
Microelectronics Reliability, **56**, 121-128 (2016), doi: 10.1016/j.microrel.2015.10.011

I. Pricha, W. Rossner, R. Moos:
Layered Ceramic Phosphors Based on $CaAlSiN_3$:Eu and YAG:Ce for White Light-Emitting Diodes
Journal of the American Ceramic Society, **99**, 211–217 (2016), doi: 10.1111/jace.13948

T. Simons, P. Chen, D. Rauch, R. Moos, U. Simon:
Sensing catalytic conversion: Simultaneous DRIFT and impedance spectroscopy for *in situ* monitoring of NH_3–SCR on zeolites
Sensors and Actuators B: Chemical, **224**, 492-499 (2016), doi: 10.1016/j.snb.2015.10.069

Book contributions

P. Fuierer, K. Ring, J. Exner, R. Moos:
BICU(TI)VOX as a Low/Intermediate Temperature SOFC Electrolyte: Another Look
In: T. Pfeifer, J. Matyáš, P. Balaya, D. Singh, J. Wei (Eds.): Ceramics for Energy Conversion, Storage, and Distribution Systems: Ceramic Transactions, Volume 255, John Wiley & Sons, Inc., Hoboken, New Jersey, USA, (2016), p. 29-40, ISBN: 978-1-119-23448-7 (print), ISSN: 1042-1122, doi: 10.1002/9781119234531.ch3

R. Moos:
Mikrowellengestützte Systeme zur Zustandserkennung von Abgaskatalysatoren und Abgasfiltern im Überblick
In: T. Tille (Hrsg.), Automobil-Sensorik - Ausgewählte Sensorprinzipien und deren automobile Anwendung, Springer-Verlag, Heidelberg (2016), p. 115-132, ISBN 978-3-662-48943-7 (gedruckt), ISBN 978-3-662-48944-4 (online), doi: 10.1007/978-3-662-48944-4_6

Doctoral Theses

S. Fischer:
Neuartiges Sensorprinzip basierend auf einer Spannungs-Puls-Methode zur Detektion von Stickoxiden an Zirkondioxid
(Novel zirconia sensor principle based on a voltage pulse method to detect nitrogen oxides)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zur Sensorik und Messtechnik, Bd. 17, Shaker-Verlag, Aachen (2016), ISBN: 978-3-8440-4478-2

A. Groß:
Einfluss von NO_x auf die elektrische Leitfähigkeit von NO_x-Speichermaterialien und die Anwendung dieser Materialien für neuartige NO_x-Dosimeter
(The effect of NO_x on the electrical conductivity of NO_x storage materials and the application of these materials for novel NO_x dosimeters)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zur Sensorik und Messtechnik, Bd. 16, Shaker-Verlag, Aachen (2016), ISBN: 978-3-8440-4217-7

W. Missal:
Miniaturisiertes Dynamisches Differenzkalorimeter in Mehrlagenkeramiktechnologie
(Miniaturized dynamic differential scanning calorimeter manufactured in low temperature co-fired ceramic multilayer technology)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zur Sensorik und Messtechnik, Bd. 15, Shaker-Verlag, Aachen (2016), ISBN: 978-3-8440-4182-8

Year 2015

Peer Reviewed Journals

S. Fischer, D. Schönauer-Kamin, R. Pohle, M. Fleischer, R. Moos:
Influence of operation temperature variations on NO measurements in low concentrations when applying the pulsed polarization technique to thimble-type lambda probes
open access - free *Journal of Sensors and Sensor Systems*, **4**, 321-329 (2015), doi: 10.5194/jsss-4-321-2015

P. Chen, S. Schönebaum, T. Simons, D. Rauch, M. Dietrich, R. Moos, U. Simon:
Correlating the Integral Sensing Properties of Zeolites with Molecular Processes by Combining Broadband Impedance and DRIFT Spectroscopy—A New Approach for Bridging the Scales
open access - free *Sensors*, **15**, 28915-28941 (2015), doi: 10.3390/s151128915

M. Feulner, G. Hagen, A. Müller, A. Schott, C. Zöllner, D. Brüggemann, R. Moos:
Conductometric Sensor for Soot Mass Flow Detection in Exhausts of Internal Combustion Engines
open access - free *Sensors*, **15**, 28796-28806 (2015), doi: 10.3390/s151128796

D. Hanft, J. Exner, M. Schubert, T. Stöcker, P. Fuierer, R. Moos:
An Overview of the Aerosol Deposition Method: Process Fundamentals and New Trends in Materials Applications
open access - free *Journal of Ceramic Science and Technology*, **6**, 147-182 (2015), doi: 10.4416/JCST2015-00018

M. Dietrich, D. Rauch, U. Simon, A. Porch, R. Moos:
Ammonia Storage Studies on H-ZSM-5 Zeolites by Microwave Cavity Perturbation: Correlation of Dielectric Properties with Ammonia Storage
open access - free *Journal of Sensors and Sensor Systems*, **4**, 263-269 (2015), doi: 10.5194/jsss-4-263-2015

P. Fremerey, A. Jess, R. Moos:
Why does the Conductivity of a Nickel Catalyst Increase during Sulfidation? An Exemplary Study Using an *In Operando* Sensor Device
open access - free *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
open access - free *Sensors*, **15**, 21971-21988 (2015), doi: 10.3390/s150921971

G. Beulertz, M. Votsmeier, R. Moos:
In operando Detection of Three-Way Catalyst Aging by a Microwave-Based Method: Initial Studies
open access - free *Applied Sciences, **5**,* 174-186 (2015), doi: 10.3390/app5030174

J. Exner, M. Hahn, M. Schubert, D. Hanft, P. Fuierer, R. Moos:
Powder requirements for aerosol deposition of alumina films
Advanced Powder Technology, **26**, 1143-1151 (2015), doi: 10.1016/j.apt.2015.05.016

R. Moos:
Microwave-Based Catalyst State Diagnosis - State of the Art and Future Perspectives
SAE International Journal of Engines, **8**, 1240-1245 (2015), doi: 10.4271/2015-01-1042

D. Rauch, D. Kubinski, G. Cavataio, D. Upadhyay, R. Moos:
Ammonia Loading Detection of Zeolite SCR Catalysts using a Radio Frequency based Method
SAE International Journal of Engines, **8**, 1126-1135 (2015), doi: 10.4271/2015-01-0986

G. Hagen, K. Burger, S. Wiegärtner, D. Schönauer-Kamin, R. Moos:
A mixed potential based sensor that measures directly catalyst conversion - A novel approach for catalyst on-board diagnostics
Sensors and Actuators B: Chemical, **217**, 158-164 (2015), doi: 10.1016/j.snb.2014.10.004

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
Sensors and Actuators B: Chemical, **214**, 234-240 (2015), doi: 10.1016/j.snb.2015.02.083

P. Fremerey, A. Jess, R. Moos:
Is it possible to detect in situ the sulfur loading of a fixed bed catalysts with a sensor?
open access - free *Journal of Sensors and Sensor Systems*, **4**, 143-149 (2015), doi: 10.5194/jsss-4-143-2015

J. Kita, A. Engelbrecht, F. Schubert, A. Groß, F. Rettig, R. Moos:
Some practical points to consider with respect to thermal conductivity and electrical resistivity of ceramic substrates for high-temperature gas sensors
Sensors and Actuators B: Chemical, **213**, 541-546 (2015), doi: 10.1016/j.snb.2015.01.041

I. Pricha, W. Rossner, R. Moos:
Pressureless sintering of luminescent CaAlSiN3:Eu ceramics
Journal of Ceramic Science and Technology, **6**, 63-68 (2015), doi: 10.4416/JCST2014-00047

J. Exner, P. Fuierer, R. Moos:
Aerosol Codeposition of Ceramics: Mixtures of Bi_2O_3-TiO_2 and Bi_2O_3-V_2O_5
Journal of the American Ceramic Society, **98**, 717-723 (2015), doi: 10.1111/jace.13364

R. Moos, G. Fischerauer:

Automotive Catalyst State Diagnosis Using Microwaves
open access - free *Oil & Gas Science and Technology*, **70**, 55-65 (2015), doi: 10.2516/ogst/2013203

G. Beulertz, M. Votsmeier, R. Moos:
Effect of propene, propane, and methane on conversion and oxidation state of three-way catalysts: A microwave cavity perturbation study
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

Doctoral Theses

D. Ortolino:
Hochstromdurchkontaktierungen für die Hybridtechnik
(Electrical high load vias in hybrid thick-film technology)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zu Materialien und Prozessen, Bd. 6, Shaker-Verlag, Aachen (2015), ISBN: 978-3-8440-4089-0

P. Fremerey:
In-situ-Sensorik zur Bestimmung der Schwefel- und Koksbeladung auf Festbettkatalysatoren
(In situ sensor to determine sulfur and coke loading on fixed bed catalyst)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zur Sensorik und Messtechnik, Bd. 14, Shaker-Verlag, Aachen (2015), ISBN: 978-3-8440-3473-8

Irene Pricha:
Vollkeramische Leuchtstoffkomposite für weißemittierende Leuchtdioden
(Ceramic Composite Phosphors for White Light Emitting Diodes)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zu Materialien und Prozessen, Bd. 5, Shaker-Verlag, Aachen (2015), ISBN: 978-3-8440-3409-7

D. Schönauer-Kamin:
Neuartiger Mischpotentialsensor zur Detektion von Ammoniak in Abgasen
(Novel Mixed Potential Sensor for the Detection of Ammonia in Exhaust Gases)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zur Sensorik und Messtechnik, Bd. 13, Shaker-Verlag, Aachen (2015), ISBN: 978-3-8440-3346-5

Year 2014

Peer Reviewed Journals

D. Ortolino, A. Engelbrecht, H. Lauterbach, M. Bräu, J. Kita, R. Moos:
Effect of Repeated Firing on the Resistance of Screen-Printed Thick Film Conductors
open access - free *Journal of Ceramic Science and Technology*, **5**, 317-326 (2014), doi: 10.4416/JCST2014-00029

J. Exner, P. Fuierer, R. Moos:
Aerosol Deposition of (Cu,Ti) substituted Bismuth Vanadate Films
Thin Solid Films, **573**, 185-190 (2014), doi: 10.1016/j.tsf.2014.11.037

S. Schödel, R. Moos, M. Votsmeier, G. Fischerauer:
SI-Engine Control With Microwave-Assisted Direct Observation of Oxygen Storage Level in Three-Way Catalysts
IEEE Transactions on Control Systems Technology, **22**, 2346-2353 (2014), doi: 10.1109/TCST.2014.2305576

M. Bektas, D. Hanft, D. Schönauer-Kamin, T. Stöcker, G. Hagen, R. Moos:
Aerosol-deposited $BaFe_{0.7}Ta_{0.3}O_{3-\delta}$ for nitrogen monoxide and temperature-independent oxygen sensing
open access - free *Journal of Sensors and Sensor Systems*, **3**, 223-229 (2014), doi: 10.5194/jsss-3-223-2014

I. Marr, K. Neumann, M. Thelakkat, R. Moos:
Undoped and Doped Poly(tetraphenylbenzidine) as Sensitive Material for an Impedimetric Nitrogen Dioxide Gas Dosimeter
Applied Physics Letters, **105**, 133301 (2014), doi: 10.1063/1.4896847

M. Dietrich, D. Rauch, A. Porch, R. Moos:
A laboratory test setup for in situ measurements of the dielectric properties of catalyst powder samples under reaction conditions by microwave cavity perturbation: set up and initial tests
open access - free *Sensors*, **14**, 16856-16868 (2014), doi: 10.3390/s140916856

M. Schubert, J. Exner, R. Moos:
Influence of carrier gas composition on the stress of Al_2O_3 coatings prepared by the Aerosol Deposition Method
open access - free *Materials*, **7**, 5633-5642 (2014), doi: 10.3390/ma7085633

D. Rauch, D. Kubinski, U. Simon, R. Moos:
Detection of the ammonia loading of a Cu Chabazite SCR catalyst by a radio frequency-based method
Sensors and Actuators B: Chemical, **205**, 88-93 (2014), doi: 10.1016/j.snb.2014.08.019

D. Schönauer-Kamin, M. Fleischer, R. Moos:
Influence of the V_2O_5 content of the catalyst layer of a non-Nernstian NH_3 sensor

Solid State Ionics, **262**, 270-273 (2014), doi: 10.1016/j.ssi.2013.08.035

S. Fischer, R. Pohle, E. Magori, M. Fleischer, R. Moos:
Detection of NO by Pulsed Polarization of Pt | YSZ
Solid State Ionics, **262**, 288-291 (2014), doi: 10.1016/j.ssi.2014.01.022

D. Chen, A. Groß, D.C. Bono, J. Kita, R. Moos, H.L. Tuller:
Electrical conductivity relaxation measurements: Application of low thermal mass heater stick
Solid State Ionics, **262**, 914-917 (2014), doi: 10.1016/j.ssi.2014.01.023

J.C. Brendel, M.M. Schmidt, G. Hagen, R. Moos, M. Thelakkat:
Controlled Synthesis of Water-Soluble Conjugated Polyelectrolytes Leading to Excellent Hole Transport Mobility
Chemistry of Materials, **26**, 1992-1998 (2014), doi: 10.1021/cm500500t

T. Tesfamichael, M. Ahsan, M. Notarianni, A. Groß, G. Hagen, R. Moos, M. Ionescu, J. Bell:
Gas Sensing of Ruthenium Implanted Tungsten Oxide Thin Films
Thin Solid Films, **558**, 416-422 (2014), doi: 10.1016/j.tsf.2014.02.084

I. Marr, A. Groß, R. Moos:
Overview on Conductometric Solid-State Gas Dosimeters
open access - free *Journal of Sensors and Sensor Systems*, **3**, 29-46 (2014), doi: 10.5194/jsss-3-29-2014

B. Plochmann, S. Lang, R. Rüger, R. Moos:
Optimization of thermoelectric properties of metal-oxide based polymer composites
Journal of Applied Polymer Science, **131**, 40038 (2014), doi: 10.1002/app.40038

P. Fuierer, M. Maier, J. Exner, R. Moos:
Anisotropy and thermal stability of hot-forged BICUTIVOX oxygen ion conducting ceramics
Journal of the European Ceramic Society, **34**, 943-951 (2014), doi: 10.1016/j.jeurceramsoc.2013.10.016

M. Bektas, D. Schönauer-Kamin, G. Hagen, A. Mergner, C. Bojer, S. Lippert, W. Milius, J. Breu, R. Moos:
$BaFe_{1-x}Ta_xO_{3-\delta}$ - A material for temperature independent resistive oxygen sensors
Sensors and Actuators B: Chemical, **190**, 208-213 (2014), doi: 10.1016/j.snb.2013.07.106

Doctoral Theses

B. Plochmann:
Polymer-Oxid-Verbundwerkstoffe für neuartige thermoelektrische Generatoren mit großer Designfreiheit
(Polymer-Oxide-Composites for Novel Thermoelectric Generators with a Large Degree of Design Freedom)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zu Materialien und Prozessen, Bd. 4, Shaker-Verlag, Aachen (2014), ISBN: 978-3-8440-3033-4

P. Bartscherer:
Entwicklung einer elektrisch leitfähigen keramischen Funktionsschicht für Abgassensoren
(Development of a Conductive Ceramic Functional Layer for Exhaust Gas Sensors)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zur Sensorik und Messtechnik, Bd. 11, Shaker-Verlag, Aachen (2014), ISBN: 978-3-8440-2912-3

Book contributions

F. Rettig, R. Moos:
Semiconducting direct thermoelectric gas sensors
In: R. Jaaniso, O.K. Tan (eds.), Semiconductor gas sensors, Woodhead Publishing Ltd., Cambridge, UK (2013), p. 261-296,
ISBN 978-0-85709-236-6 (print), ISBN 978-0-85709-866-5 (online), doi: 10.1533/9780857098665.2.261

Year 2013

Peer Reviewed Journals - Awards

The Best Paper Award 2013: Details: *Sensors*, **13**, 2113-2116 (2013), doi: 10.3390/s130202113
S. Achmann, G. Hagen, J. Kita, I.M. Malkowsky, C. Kiener, R. Moos:
Metal-Organic Frameworks for Sensing Applications in the Gas Phase
Sensors, **9**, 1574-1589 (2009)
open access - free doi: 10.3390/s90301574

Peer Reviewed Journals

S. Fischer, D. Schönauer-Kamin, R. Pohle, M. Fleischer, R. Moos:
NO Detection by Pulsed Polarization of Lambda Probes - Influence of the Reference Atmosphere
open access - free *Sensors*, **13**, 16051-16064 (2013), doi: 10.3390/s131216051

J. Kita, W. Missal, E. Wappler, F. Bechtold, R. Moos:
Development of a Miniaturized Ceramic Differential Calorimeter Device in LTCC Technology
Journal of Ceramic Science and Technology, **4**, 137-144 (2014), doi: 10.4416/JCST2013-00008

A. Brandenburg, J. Kita, A. Groß, R. Moos:
Novel tube-type LTCC transducers with buried heaters and inner interdigitated electrodes as a platform for gas sensing at various high temperatures
Sensors and Actuators B: Chemical, **189**, 80-88 (2013), doi: 10.1016/j.snb.2012.12.119

N. Izu, G. Hagen, F. Schubert, D. Schönauer-Kamin, R. Moos:
Effect of a porous Pt/alumina cover layer for $V_2O_5/WO_3/TiO_2$ resistive SO_2 sensing materials
open access - free *Journal of the Ceramic Society of Japan*, **121**, 734-737 (2013), doi: 10.2109/jcersj2.121.734

P. Bartscherer, R. Moos:
Improvement of the sensitivity of a conductometric soot sensor by adding a conductive cover layer
open access - free *Journal of Sensors and Sensor Systems,* **2**, 95-102 (2013), doi: 10.5194/jsss-2-95-2013

D. Schönauer-Kamin, M. Fleischer, R. Moos:
Half-cell potential analysis of an ammonia sensor with the electrochemical cell Au | YSZ | Au, VWT
open access - free *Sensors*, **13**, 4760-4780 (2013), doi: 10.3390/s130404760

A. Groß, M. Kremling, I. Marr, D.J. Kubinski, J.H. Visser, H.L. Tuller, R. Moos:
Dosimeter-type NO_x sensing properties of $KMnO_4$ and its electrical conductivity during temperature programmed desorption
open access - free *Sensors*, **13**, 4428-4449 (2013), doi: 10.3390/s130404428

D. Rauch, P. Fremerey, A. Jess, R. Moos:
In situ detection of coke deposits on fixed-bed catalysts by a radio frequency-based method
Sensors and Actuators B: Chemical, **181**, 681-689 (2013), doi: 10.1016/j.snb.2013.01.022

R. Moos, G. Beulertz, S. Reiß, G. Hagen, G. Fischerauer, M. Votsmeier, J. Gieshoff:
Overview: Status of the Microwave-Based Automotive Catalyst State Diagnosis
Topics in Catalysis, **56**, 358-364 (2013), doi: 10.1007/s11244-013-9980-x

M. Feulner, G. Hagen, A. Piontkowski, A. Müller, G. Fischerauer, D. Brüggemann, R. Moos:
In-Operation Monitoring of the Soot Load of Diesel Particulate Filters - Initial Tests
Topics in Catalysis, **56**, 483-488 (2013), doi: 10.1007/s11244-013-0002-9

G. Beulertz, M. Fritsch, G. Fischerauer, F. Herbst, J. Gieshoff, M. Votsmeier, G. Hagen, R. Moos:
Microwave Cavity Perturbation as a Tool for Laboratory In Situ Measurement of the Oxidation State of Three Way Catalysts
Topics in Catalysis, **56**, 405-409 (2013), 10.1007/s11244-013-9987-3

R. Moos:
Special issue IMCS 2012, in Nuremberg, Germany
Sensors and Actuators B: Chemical, **187**, 1 (2013), doi: 10.1016/j.snb.2013.03.027

G. Hagen, J. Kita, N. Izu, U. Röder-Roith, D. Schönauer-Kamin, R. Moos:
Planar platform for temperature dependent four-wire impedance spectroscopy – A novel tool for the characterization of functional materials
Sensors and Actuators B: Chemical, **187**, 174-183 (2013), doi: 10.1016/j.snb.2012.10.068

A. Groß, D. Hanft, G. Beulertz, I. Marr, D. Kubinski, J. Visser, R. Moos:
The Effect of SO_2 on the Sensitive Layer of a NO_x Dosimeter
Sensors and Actuators B: Chemical, **187**, 153-161 (2013), doi: 10.1016/j.snb.2012.10.039

M.Z. Ahmad, A.Z. Sadek, K. Latham, J. Kita, R. Moos, W. Wlodarski:
Chemically synthesized one-dimensional zinc oxide nanorods for ethanol sensing
Sensors and Actuators B: Chemical, **187**, 295-300 (2013), doi: 10.1016/j.snb.2012.11.042

A. Groß, T. Weller, H.L. Tuller, R. Moos:
Electrical Conductivity Study of NO_x Trap Materials $BaCO_3$ and $K_2CO_3/La\text{-}Al_2O_3$ during NO_x Exposure
Sensors and Actuators B: Chemical, **187**, 461-470 (2013), doi: 10.1016/j.snb.2013.01.083

Year 2012

Peer Reviewed Journals

G. Beulertz, A. Groß, R. Moos, D.J. Kubinski, J.H. Visser:
Determining the Total Amount of NO_x in a Gas Stream - Advances in the Accumulating Gas Sensor Principle
Sensors and Actuators B: Chemical, **175**, 157-162 (2012), doi: 10.1016/j.snb.2012.02.017

A. Groß, S.R. Bishop, D.J. Yang, H.L. Tuller, R. Moos:
The Electrical Properties of NO_x-storing Carbonates during NO_x exposure
Solid State Ionics, **225**, 317-323 (2012), doi: 10.1016/j.ssi.2012.05.009

S. Fischer, R. Pohle, E. Magori, D. Schönauer-Kamin, M. Fleischer, R. Moos:
Pulsed Polarization of Platinum Electrodes on YSZ
Solid State Ionics, **225**, 371-375 (2012), doi: 10.1016/j.ssi.2012.03.020

C. Schlangen, M. Hämmerle, R. Moos:
Amperometric enzyme electrodes for the determination of volatile alcohols in the headspace above fruit and vegetable juices
Microchimica Acta, **179**, 115-121 (2012), doi: 10.1007/s00604-012-0867-5

A. Groß, M. Richter, D.J. Kubinski, J.H. Visser, R. Moos:
The Effect of the Thickness of the Sensitive Layer on the Performance of the Accumulating NO_x Sensor
open access - free *Sensors*, **12**, 12329-12346 (2012), doi: 10.3390/s120912329

W. Missal, J. Kita, E. Wappler, F. Bechtold, R. Moos:
Calorimetric Sensitivity and Thermal Resolution of a Novel Miniaturized Ceramic DSC Chip in LTCC Technology
Thermochimica Acta, **543**, 142-149 (2012), doi: 10.1016/j.tca.2012.05.019

S. Denneler, C. Schuh, K. Benkert, R. Moos:
Influence of sintering conditions on doped PZT ceramics for base-metal electrode multilayer actuators
Functional Materials Letters, **5**, 1250022 (2012), doi: 10.1142/S1793604712500221

T. Stöcker, A. Köhler, R. Moos:
Why does the electrical conductivity in PEDOT: PSS decrease with PSS content? A study combining thermoelectric measurements with impedance spectroscopy
Journal of Polymer Science Part B: Polymer Physics, **50**, 976-983 (2012), doi: 10.1002/polb.23089

A. Groß, G. Beulertz, I. Marr, D.J. Kubinski, J.H. Visser, R. Moos:
Dual Mode NO_x Sensor: Measuring Both the Accumulated Amount and Instantaneous Level at Low Concentrations
open access - free *Sensors*, **12**, 2831-2850 (2012), doi: 10.3390/s120302831

Doctoral Theses

U. Röder-Roith:
Elektrochemische Entstickung von Abgasen und direkte thermoelektrische Gassensoren: Beispiele für neuartige Anwendungen von Feststoff-Ionenleitern
(Electrochemical Removal of NO_x from Exhausts and Direct Thermoelectric Gas Sensors: Examples for Novel Applications of Solid Ion Conductors)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zu Materialien und Prozessen, Bd. 3, Shaker-Verlag, Aachen (2012), ISBN: 978-3-8440-1003-9

S. Reiß:
Direkte Zustandssensorik von Automobilabgaskatalysatoren
(Direct diagnosis of automotive exhaust gas catalysts)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zur Sensorik und Messtechnik, Bd. 9, Shaker-Verlag, Aachen (2012), ISBN: 978-3-8440-0841-8

S. Denneler:
Piezoelektrische Vielschichtaktoren mit kupferbasierten Innenelektroden
(Piezoelectric multilayer actuators with copper-based internal electrodes)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zu Materialien und Prozessen, Bd. 2, Shaker-Verlag, Aachen (2012), ISBN: 978-3-8440-0747-3
doi: 10.2370/9783844007473

Open Access Conference Contributions

J. Kita, A. Brandenburg, A. Groß, R. Moos:
Novel tube-type LTCC transducers with buried heaters and inner electrodes for high-temperatures gas sensors
Eurosensors XXVI, September 9 - 12, 2012, Cracow, Poland, *Procedia Engineering*, **47**, 60-63 (2012), doi: 10.1016/j.proeng.2012.09.084
open access - free doi: 10.1016/j.proeng.2012.09.084

Year 2011

Peer Reviewed Journals

W. Missal, J. Kita, E. Wappler, F. Gora, A. Kipka, T. Bartnitzek, F. Bechtold, D. Schabbel, B. Pawlowski, R. Moos:
Miniaturized Ceramic Differential Scanning Calorimeter with Integrated Oven and Crucible in LTCC Technology
Sensors and Actuators A: Physical, **172**, 21-26 (2011), doi: 10.1016/j.sna.2011.01.025

N. Izu, G. Hagen, D. Schönauer, U. Röder-Roith, R. Moos:
Planar potentiometric SO_2 gas sensor for high temperatures using NASICON electrolyte combined with $V_2O_5/WO_3/TiO_2$ + Au or Pt electrode
free *Journal of the Ceramic Society of Japan*, **119**, 687-691 (2011), doi: 10.2109/jcersj2.119.687

P. Fremerey, S. Reiß, A. Geupel, G. Fischerauer, R. Moos:
Determination of the NO_x Loading of an Automotive Lean NO_x Trap by Directly Monitoring the Electrical Properties of the Catalyst Material Itself
open access - free *Sensors*, **11**, 8261-8280 (2011), doi: 10.3390/s110908261

N. Müller, S. Reiß, P. Fremerey, A. Jess, R. Moos:
Initial tests to detect quantitatively the coke loading of reforming catalysts by a contactless microwave method
Chemical Engineering and Processing, **50**, 729-731 (2011), doi: 10.1016/j.cep.2011.07.002

I. Marr, S. Reiß, G. Hagen, R. Moos:
Planar Zeolite Film-Based Potentiometric Gas Sensors Manufactured by a Combined Thick-Film and Electroplating Technique
open access - free *Sensors*, **11**, 7736-7748 (2011), doi: 10.3390/s110807736

M. Hämmerle, K. Hilgert, M.A. Horn, R. Moos:
Analysis of volatile alcohols in apple juices by an electrochemical biosensor measuring in the headspace above the liquid
Sensors and Actuators B: Chemical, **158**, 313-318 (2011), doi: 10.1016/j.snb.2011.06.026

D. Schönauer, T. Nieder, K. Wiesner, M. Fleischer, R. Moos:
Investigation of the Electrode Effects in Mixed Potential Type Ammonia Exhaust Gas Sensors
Solid State Ionics, **192**, 38-41 (2011), doi: 10.1016/j.ssi.2010.03.028

U. Röder-Roith, F. Rettig, K. Sahner, T. Röder, J. Janek, R. Moos:
Perovskite-Type Proton Conductor for Novel Direct Ionic Thermoelectric Hydrogen Sensor
Solid State Ionics, **192**, 101-104 (2011), doi: 10.1016/j.ssi.2010.05.044

P.A. Fuierer, R. Maier, U. Röder-Roith, R. Moos:
Processing Issues Related to the Bi-dimensional Ionic Conductivity of BIMEVOX Ceramics
Journal of Materials Science, **46**, 5447-545 (2011), doi: 10.1007/s10853-011-5486-8

D. Ortolino, J. Kita, R. Wurm, E. Blum, K. Beart, R. Moos:
Investigation of the short-time high-current behavior of vias manufactured in hybrid thick-film technology
Microelectronics Reliability, **34**, 1257-263 (2011), doi: 10.1016/j.microrel.2011.02.025

D. Schönauer, I. Sichert, R. Moos:
Vanadia doped tungsten-titania SCR catalysts as functional materials for exhaust gas sensor applications
Sensors and Actuators B: Chemical, **155**, 199-205 (2011), doi: 10.1016/j.snb.2010.11.046

S. Reiß, D. Schönauer, G. Hagen, G. Fischerauer, R. Moos:
Monitoring the ammonia loading of zeolite-based ammonia SCR catalysts by a microwave method
Chemical Engineering and Technology, **34**, 791-796 (2011), doi: 10.1002/ceat.201000546

R. Moos, N. Izu, F. Rettig, S. Reiß, W. Shin, I. Matsubara:
Resistive Oxygen Gas Sensors for Harsh Environments
open access - free *Sensors*, **11**, 3439-3465 (2011), doi: 10.3390/s110403439

D. Biskupski, B. Herbig, G. Schottner, R. Moos:
Nanosized titania derived from a novel sol-gel process for ammonia gas sensor applications
Sensors and Actuators B: Chemical, **153**, 329-334 (2011), doi: 10.1016/j.snb.2010.10.029

G. Hagen, I. Marr, R. Moos:
Potentiometric CO_2 gas sensor based on zeolites
Sensor Letters, **9**, 902-906 (2011), doi: 10.1166/sl.2011.1640

N. Izu, G. Hagen, D. Schönauer, U. Röder-Roith, R. Moos:
Application of $V_2O_5/WO_3/TiO_2$ for resistive-type SO_2 sensors
open access - free *Sensors,* **11**, 2982-2991 (2011), doi: 10.3390/s110302982

S. Reiß, M. Wedemann, M. Spörl, G. Fischerauer, R. Moos:
Effects of H_2O, CO_2, CO, and Flow Rates on the RF-Based Monitoring of Three-Way Catalysts
Sensor Letters, **9**, 316-320 (2011), doi: 10.1166/sl.2011.1472

A. Geupel, D.J. Kubinski, S. Mulla, T.H. Ballinger, H.Y. Chen, J.H. Visser, R. Moos:
Integrating NOx Sensor for Automotive Exhausts - a Novel Concept
Sensor Letters, **9**, 311-315 (2011), doi: 10.1166/sl.2011.1471

G. Hagen, R. Moos:
Planar zeolite-based potentiometric gas sensors
Sensor Letters, **9**, 110-113 (2011), doi: 10.1166/sl.2011.1430

A. Fischerauer, G. Fischerauer, G. Hagen, R. Moos:
Integrated impedance based hydro-carbon gas sensors with Na-zeolite/Cr_2O_3 thin-film interfaces: From physical modeling to devices
physica status solidi (a), **208**, 404-415 (2011), doi: 10.1002/pssa.201026606

S. Reiß, M. Spörl, G. Hagen, G. Fischerauer, R. Moos:
Combination of Wirebound and Microwave Measurements for In Situ Characterization of Automotive Three-Way Catalysts
IEEE Sensors Journal **11**, 434-438 (2011), doi: 10.1109/JSEN.2010.2058798

Doctoral Theses

N. Müller:
Direkte Bestimmung von Koksdepositen auf Festbettkatalysatoren durch elektrische Sensoren
(Direct determination of coke deposits on fixed bed catalysts by electrical sensors)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zur Sensorik und Messtechnik, Bd. 8, Shaker-Verlag, Aachen (2011), ISBN: 978-3-8322-9931-6

D. Biskupski:
Plattform zur Eliminierung der Sauerstoffabhängigkeit von Hochtemperaturgassensoren
(Platform for the elimination of the oxygen dependency of high temperature gas sensors)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zur Sensorik und Messtechnik, Bd. 7, Shaker-Verlag, Aachen (2011), ISBN: 978-3-8322-9870-8

Open Access Conference Contributions

G. Beulertz, A. Geupel, R. Moos, D.J. Kubinski, J.H. Visser:
Accumulating gas sensor principle - how to come from concentration integration to real amount measurements
Eurosensors XXV, September 4 - 7, 2011, Athens, Greece, *Procedia Engineering*, **25**, 1109-1112 (2011)
open access - free doi: 10.1016/j.proeng.2011.12.273

Year 2010

Peer Reviewed Journals

R. Moos:
Catalysts as Sensors - A Promising Novel Approach in Automotive Exhaust Gas Aftertreatment
open access - free *Sensors*, **10**, 6773-6787 (2010), doi: 10.3390/s100706773

G. Fischerauer, M. Spörl, S. Reiß, R. Moos:
Mikrowellengestützte Aufklärung elektrochemischer Vorgänge in Katalysatoren und verwandten Systemen
Microwave-Based Investigation of Electrochemical Processes in Catalysts and Related Systems
Technisches Messen, **77**, 419-427 (2010), doi: 10.1524/teme.2010.0066

D. Schönauer, R. Moos:
Detection of water droplets on exhaust gas sensors
Sensors and Actuators B: Chemical, **148**, 624-629 (2010), doi: 10.1016/j.snb.2010.05.060

N. Müller, C. Kern, R. Moos, A. Jess:
Direct detection of coking and regeneration of single particles and fixed bed reactors by electrical sensors
Applied Catalysis A: General, **382**, 254-262 (2010), doi: 10.1016/j.apcata.2010.05.001

S. Fischer, R. Pohle, B. Farber, R. Proch, J. Kaniuk, M. Fleischer, R. Moos:
Method for detection of NO_x in exhaust gases by pulsed discharge measurements using standard zirconia-based lambda sensors
Sensors and Actuators B: Chemical, **147**, 780-785 (2010), doi: 10.1016/j.snb.2010.03.092

A. Geupel, D. Schönauer, U. Röder-Roith, D.J. Kubinski, S. Mulla, T.H. Ballinger, H.-Y. Chen, J.H. Visser, R. Moos:
Integrating nitrogen oxide sensor: a novel concept for measuring low concentrations in the exhaust gas
Sensors and Actuators B: Chemical, **145**, 756-761 (2010), doi: 10.1016/j.snb.2010.01.036

F. Rettig, R. Moos:
α-iron oxide: an intrinsically semiconducting oxide material for direct thermoelectric oxygen sensors
Sensors and Actuators B: Chemical, **145**, 685-690 (2010), doi: 10.1016/j.snb.2010.01.023

G. Hagen, C. Feistkorn, S. Wiegärtner, A. Heinrich, D. Brüggemann, R. Moos:
Conductometric Soot Sensor for Automotive Exhausts: Initial Studies
Sensors, **10**, 1589-1598 (2010)
open access - free doi: 10.3390/s100301589

G. Fischerauer, M. Förster, R. Moos:
Sensing the Soot Load in Automotive Diesel Particulate Filters by Microwave Methods
Measurement Science and Technology, **21**, 035108 (2010), doi: 10.1088/0957-0233/21/3/035108

S. Achmann, G. Hagen, M. Hämmerle, I.M. Malkowsky, C. Kiener, R. Moos:
Sulfur Removal from Low-Sulfur Gasoline and Diesel Fuel by Metal-Organic Frameworks
Chemical Engineering and Technology, **33**, 275-280 (2010), doi: 10.1002/ceat.200900426

M. Hämmerle, K. Hilgert, S. Achmann, R. Moos:
Direct Monitoring of organic vapours with amperometric enzyme gas sensors
Biosensors and Bioelectronics, **25**, 1521-1525 (2010), doi: 10.1016/j.bios.2009.10.022

N. Müller, A. Jess, R. Moos:
Direct detection of coke deposits on fixed bed catalysts by electrical sensors
Sensors and Actuators B: Chemical, **144**, 437-442 (2010), doi: 10.1016/j.snb.2009.03.008

N. Müller, R. Moos, A. Jess:
In situ Monitoring of Coke Deposits during Coking and Regeneration of Solid Catalysts by Electrical Impedance-based Sensors
Chemical Engineering and Technology, **33**, 103-112 (2010)
Free access doi: 10.1002/ceat.200900380

Open Access Conference Contributions

W. Missal, J. Kita, E. Wappler, F. Gora, A. Kipka, T. Bartnitzek, F. Bechtold, D. Schabbel, B. Pawlowski, R. Moos:
Miniaturized Ceramic Differential Scanning Calorimeter with Integrated Oven and Crucible in LTCC Technology
Eurosensors XXIV, September 5 - 8, 2010, Linz, Austria, *Procedia Engineering*, **5**, 940-943 (2010)
open access - free doi: 10.1016/j.proeng.2010.09.263

Year 2009

Peer Reviewed Journals

R. Moos, M. Wedemann, M. Spörl, S. Reiß, G. Fischerauer:
Direct Catalyst Monitoring by Electrical Means: An Overview on Promising Novel Principles
Topics in Catalysis, **52**, 2035-2040 (2009), doi: 10.1007/s11244-009-9399-6

S. Reiß, M. Wedemann, R. Moos, M. Rösch:
Electrical In-situ Characterization of Three-Way Catalyst Coatings
Topics in Catalysis, **52**, 1898-1902 (2009), doi: 10.1007/s11244-009-9366-2

D. Biskupski, A. Geupel, K. Wiesner, M. Fleischer, R. Moos:
Platform for a hydrocarbon exhaust gas sensor utilizing a pumping cell and a conductometric sensor
Sensors, **9**, 7498-7508 (2009)
open access - free doi: 10.3390/s90907498

R. Moos, K. Sahner, M. Fleischer, U. Guth, N. Barsan, U. Weimar:
Solid State Gas Sensor Research in Germany - a Status Report
Sensors, **9**, 4323-4365 (2009)
open access - free doi: 10.3390/s90604323

D. Schönauer, K. Wiesner, M. Fleischer, R. Moos:
Selective Mixed Potential Ammonia Exhaust Gas Sensor
Sensors and Actuators B: Chemical, **140**, 585-590 (2009), doi: 10.1016/j.snb.2009.04.064

M. Hrovat, D. Belavič, J. Kita, J. Holc, J. Cilenšek, S. Drnovšek:
Thick-film NTC thermistors and LTCC materials: The dependence of the electrical and microstructural characteristics on the firing temperature
Journal of the European Ceramic Society, **29**, 3265–3271 (2009), doi: 10.1016/j.jeurceramsoc.2009.05.019

K. Sahner, M. Kaspar, R. Moos:
Assessment of the novel aerosol deposition method for room temperature preparation of metal oxide gas sensor films
Sensors and Actuators B: Chemical, **139**, 394-399 (2009), doi: 10.1016/j.snb.2009.03.011

D. Nowak, E. Miś, A. Dziedzic, J. Kita
Fabrication and electrical properties of laser-shaped thick-film and LTCC microresistors
Microelectronics Reliability, **49**, 600-606 (2009), doi: 10.1016/j.microrel.2009.02.019

F. Rettig, R. Moos:
Temperature-modulated direct thermoelectric gas sensors: thermal modeling and results for fast hydrocarbon sensors
Measurement Science and Technology, **20**, 065205 (2009), doi: 10.1088/0957-0233/20/6/065205

T. Richter, C. Schuh, E. Suvaci, R. Moos:
Single crystal growth in PMN-PT and PMN-PZT
Journal of Materials Science, **44**, 1757-1763 (2009), doi: 10.1007/s10853-009-3286-1

S. Achmann, G. Hagen, J. Kita, I.M. Malkowsky, C. Kiener, R. Moos:
Metal-Organic Frameworks for Sensing Applications in the Gas Phase
Sensors, **9**, 1574-1589 (2009)
open access - free doi: 10.3390/s90301574
Received the Best Paper Award 2013: Details: *Sensors*, **13**, 2113-2116 (2013), doi: 10.3390/s130202113

U. Röder-Roith, F. Rettig, T. Röder, J. Janek, R. Moos, K. Sahner:
Thick-film solid electrolyte oxygen sensors using the direct ionic thermoelectric effect
Sensors and Actuators B: Chemical, **136**, 530-535 (2009), doi: 10.1016/j.snb.2008.12.024

Doctoral Theses

G. Hagen:
Impedimetrische Gassensoren auf Zeolith-Basis
(Impedimetric zeolite-based gas sensors)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zur Sensorik und Messtechnik, Bd. 5, Shaker-Verlag, Aachen (2009)
ISBN: 978-3-8322-8410-7

S. Achmann:
Enzymbasierter Gassensor zur selektiven, direkten und kontinuierlichen Detektion von Formaldehyd
(Enzyme-based gas sensor for the selective, direct and continuous detection of formaldehyde)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zur Sensorik und Messtechnik, Bd. 4, Shaker-Verlag, Aachen (2009)
ISBN: 978-3-8322-8378-0

Open Access Conference Contributions

S. Fischer, R. Pohle, M. Fleischer, R. Moos:
Method for reliable detection of different exhaust gas components by pulsed discharge measurements using standard zirconia based sensors
Proceedings *Eurosensors XXIII*, Lausanne, Switzerland, 6.-9.9.2009, in *Procedia Chemistry*, **1**, 585–588 (2009)
open access - free doi:10.1016/j.proche.2009.07.146

Year 2008

Peer Reviewed Journals

D. Biskupski, K. Wiesner, J. Kita, M. Fleischer, R. Moos:
Automotive Exhaust Gas Sensor Based on a Combination of an Electrochemical Pumping Cell and a Resistive Gas Sensor
Sensor Letters, **6**, 803-807 (2008), doi: 10.1166/sl.2008.505

K. Sahner, R. Moos:
P-type semiconducting perovskite sensors for reducing gases – model description
Sensor Letters, **6**, 808-811 (2008), doi: 10.1166/sl.2008.506

R. Moos, D. Schönauer:
Recent Developments in the Field of Automotive Exhaust Gas Ammonia Sensing
Sensor Letters, **6**, 821-825 (2008), doi: 10.1166/sl.2008.509

A. Fischerauer, A. Gollwitzer, F. Thalmayr, G. Hagen, R. Moos, G. Fischerauer:
An initial physics-based model for the impedance spectrum of a hydrocarbon sensor with a zeolite/Cr_2O_3 interface
Sensor Letters, **6**, 1019-1022 (2008), doi: 10.1166/sl.2008.553

J. Kita, R. Moos:
Development of LTCC-Materials and their Applications - an Overview
Informacije MIDEM - Journal of Microelectronics Electronic Components and Materials, **38**, 219-224 (2008)
free access: <click here>

K. Sahner, G. Hagen, D. Schönauer, S. Reiß, R. Moos:
Zeolites - Versatile Materials for Gas Sensors
Solid State Ionics, **179**, 2416-2423 (2008), doi: 10.1016/j.ssi.2008.08.012

S. Reiß, G. Hagen, R. Moos:
Zeolite-based Impedimetric Gas Sensor Device in Low-cost Technology for Hydrocarbon Gas Detection
Sensors, **8**, 7904-7916 (2008)
open access - free doi: 10.3390/s8127904

F. Rettig, R. Moos:
Morphology dependence of thermopower and conductance in semiconducting oxides with space charge regions
Solid State Ionics, **179**, 2299-2307 (2008), doi: 10.1016/j.ssi.2008.08.006

S. Achmann, M. Hämmerle, J. Kita, R. Moos:
Miniaturized low temperature co-fired ceramics (LTCC) biosensor for amperometric gas sensing
Sensors and Actuators B: Chemical, **135**, 89-95 (2008), doi: 10.1016/j.snb.2008.07.024

M. Hämmerle, S. Achmann, R. Moos:
Gas diffusion electrodes for use in an amperometric enzyme biosensor
Electroanalysis, **20**, 2279-2286 (2008)
doi: 10.1002/elan.200804321

G. Fischerauer, M. Spörl, A. Gollwitzer, M. Wedemann, R. Moos:
Catalyst State Observation via the Perturbation of a Microwave Cavity Resonator
Frequenz, **62**, 180-184 (2008), doi: 10.1515/FREQ.2008.62.7-8.180

K. Sahner, A. Schulz, J. Kita, R. Merkle, J. Maier, R. Moos:
CO_2 Selective Potentiometric Sensor in Thick-film Technology
Sensors, **8**, 4774-4785 (2008)
open access - free doi: 10.3390/s8084774

K. Sahner, D. Schönauer, P. Kuchinke, R. Moos:
Zeolite cover layer for selectivity enhancement of p-type semiconducting hydrocarbon sensors
Sensors and Actuators B: Chemical, **133**, 502-508 (2008), doi: 10.1016/j.snb.2008.03.014

T. Richter, C. Schuh, R. Moos, E. Suvaci:
Single Crystal Growth and Texturing of Lead-Based Piezoelectric Ceramics via Templated Grain Growth Process
Functional Materials Letters, **1**, 127-132, (2008), doi: 10.1142/S1793604708000204

S.A. Meiss, M. Rohnke, F. Rettig, R. Moos, J. Janek:
Ion-Conducting Probes for Low Temperature Plasmas
Contributions to Plasma Physics, **48**, 473-479 (2008), doi: 10.1002/ctpp.200810076

E. Miś, A. Dziedzic, T. Piasecki, J. Kita, R. Moos:
Geometrical, electrical and stability properties of thick-film and LTCC microcapacitors
Microelectronics International, **25**, 37-41 (2008), doi: 10.1108/13565360810875994

A. Dubbe:
Influence of the sensitive zeolite material on the characteristics of a potentiometric hydrocarbon gas sensor
Solid State Ionics, **179**, 1645-1647 (2008), doi: 10.1016/j.ssi.2008.01.024

R. Moos, M. Spörl, G. Hagen, A. Gollwitzer, M. Wedemann, G. Fischerauer:
TWC: lambda control and OBD without lambda probe - an initial approach
SAE paper 2008-01-0916 (2008), doi: 10.4271/2008-01-0916

R. Moos, C. Zimmermann, T. Birkhofer, A. Knezevic, C. Plog, M.R. Busch, T. Ried:
Sensor for directly determining the state of a NOx storage catalyst
SAE paper 2008-01-0447 (2008), doi: 10.4271/2008-01-0447

S. Achmann, M. Hermann, F. Hilbrig, V. Jérôme, M. Hämmerle, R. Freitag, R. Moos:
Direct Detection of Formaldehyde in Air by a Novel NAD^+- and Glutathione Independent Formaldehyde Dehydrogenase-Based Biosensor
Talanta, **75**, 786-791 (2008), doi: 10.1016/j.talanta.2007.12.015

T. Richter, S. Denneler, C. Schuh, E. Suvaci, R. Moos:
Textured PMN-PT and PMN-PZT
Journal of the American Ceramic Society, **91**, 929-933 (2008), doi: 10.1111/j.1551-2916.2007.02216.x

A. Zampieri, A. Dubbe, W. Schwieger, A. Avhale, R. Moos:
ZSM-5 zeolite films on Si substrates grown by in-situ seeding and secondary crystal growth and application in an electrochemical hydrocarbon gas sensor
Microporous and Mesoporous Materials, **111**, 530-535 (2008), doi: 10.1016/j.micromeso.2007.08.026

K. Sahner, D. Schönauer, M. Matam, M. Post, R. Moos:
Selectivity enhancement of p-type semiconducting hydrocarbon sensors - the use of sol-precipitated nano-powders
Sensors and Actuators B: Chemical, **130**, 470-476 (2008), doi: 10.1016/j.snb.2007.09.024
free access: <click here>

A. Dubbe, R. Moos:
Potentiometric hydrocarbon gas sensing characteristics of sodium ion conducting zeolite ZSM-5
Sensors and Actuators B: Chemical, **130**, 546-550 (2008), doi: 10.1016/j.snb.2007.09.067

S. Achmann, M. Hämmerle, R. Moos:
Amperometric Enzyme-based Biosensor for Direct Detection of Formaldehyde in the Gas Phase: Dependence on Electrolyte Composition
Electroanalysis, **20**, 410-417 (2008), doi: 10.1002/elan.200704069

S. Achmann, M. Hämmerle, R. Moos:
Amperometric Enzyme-based Gas Sensor for Formaldehyde: Impact of Possible Interferences
Sensors, **8**, 1351-1365 (2008)
open access - free doi: 10.3390/s8031351

Doctoral Theses

F. Rettig:
Direkte thermoelektrische Gassensoren
(Direct thermoelectric gas sensors)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zur Sensorik und Messtechnik, Bd. 3, Shaker-Verlag, Aachen (2008)
ISBN: 978-3-8322-7631-7

T. Richter:
Piezoelektrische Einkristalle und texturierte Piezokeramik im System $Pb(Mg_{1/3}Nb_{2/3})O_3$-$PbTiO_3$-$PbZrO_3$
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zu Materialien und Prozessen, Bd. 1, Shaker-Verlag, Aachen (2008)
ISBN: 978-3-8322-7128-2

Year 2007

Peer Reviewed Journals

G. Hagen, A. Schulz, M. Knörr, R. Moos:
Four-Wire Impedance Spectroscopy on Planar Zeolite/Chromium Oxide Based Hydrocarbon Gas Sensors
Sensors, **7**, 2681-2692 (2007)
open access - free doi: 10.3390/s7112681

F. Rettig, R. Moos:
Direct thermoelectric hydrocarbon gas sensors based on SnO_2
IEEE Sensors Journal, **7**, 1490-1496 (2007), doi: 10.1109/JSEN.2007.906887

R. Mariychuk, A. Baumgartner, F. E. Wagner, A. Lerf, A. Dubbe, R. Moos, J. Breu:
Synthesis, Structure, and Electric Conductivity of Ferrous Tainiolite and its Oxidative Conversion into Coarse-Grained Swellable Smectite
Chemistry of Materials, **19**, 5377-5387 (2007), doi: 10.1021/cm0713778

K. Sahner, P. Gouma, R. Moos:
Electrodeposited and sol-gel precipitated p-type $SrTi_{1-x}Fe_xO_{3-\delta}$ semiconductors for gas sensing
Sensors, **7**, 1871-1886 (2007)
open access - free doi: 10.3390/s7091871

K. Sahner, R. Moos:
Modeling of hydrocarbon sensors based on *p*-type semiconducting perovskites
Phys. Chem. Chem. Phys., **9**, 635-642 (2007) , doi: 10.1039/b612965j

F. Rettig, R. Moos:
Direct thermoelectric gas sensors: Design aspects and first gas sensors
Sensors and Actuators B: Chemical, **123**, 413–419 (2007), doi: 10.1016/j.snb.2006.09.002

Doctoral Thesis

C. Zimmermann:
Neuartiger Sensor zur Bestimmung des Zustandes eines NOx-Speicherkatalysators
(Novel sensor for determining the state of a NOx storage catalyst)
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zur Sensorik und Messtechnik, Bd. 2, Shaker-Verlag, Aachen (2007)
ISBN: 978-3-8322-6084-2

Year 2006

Peer Reviewed Journals

R. Moos, K. Sahner, G. Hagen, A. Dubbe:
Zeolites for Sensors for Reducing Gases
Rare Metal Materials And Engineering, **35**, Suppl. 3, 447-451 (2006)
URL: http://en.cnki.com.cn/Article_en/CJFDTOTAL-COSE2006S3139.htm

A. Dubbe, G. Hagen, R. Moos:
Impedance Spectroscopy of Na^+ conducting zeolite ZSM-5
Solid State Ionics, **177**, 2321-2323 (2006), doi: 10.1016/j.ssi.2006.04.006

(*) G. Hagen, A. Dubbe, F. Rettig, A. Jerger, T. Birkhofer, R. Müller, C. Plog, R. Moos:
Selective impedance based gas sensors for hydrocarbons using ZSM-5 zeolite films with chromium(III)oxide interface
Sensors and Actuators B: Chemical, **119**, 441-448 (2006), doi: 10.1016/j.snb.2005.12.052

(*) R. Moos, B. Reetmeyer, A. Hürland, C. Plog:
Sensor for directly determining the exhaust gas recirculation rate - EGR sensor
Sensors and Actuators B: Chemical, **119**, 57-63 (2006), doi: 10.1016/j.snb.2005.11.055

G. Hagen, A. Dubbe, G. Fischerauer, R. Moos:
Thick-film impedance based hydrocarbon detection based on chromium(III) oxide / zeolite interfaces
Sensors and Actuators B: Chemical, **118**, 73-77 (2006), doi: 10.1016/j.snb.2006.04.005

K. Sahner, D. Schönauer, R. Moos, M. Matam, M.L. Post:
Effect of electrodes and zeolite cover layer on hydrocarbon sensing with *p*-type perovskite $SrTi_{0.8}Fe_{0.2}O_{3-\delta}$ thick and thin films
Journal of Materials Science, **41**, 5828–5835 (2006), doi: 10.1007/s10853-006-0299-x
free access: <click here>

S. Srinath, M. Mahesh Kumar, K. Sahner, M.L. Post, M. Wickles, R. Moos, H. Srikanth:
Magnetization in insulating phases of Ti^{4+} doped $SrFeO_{3-\delta}$
J. Appl. Phys., **99**, 08S904 (2006), doi: 10.1063/1.2167050

K. Sahner, J. Straub, R. Moos:
Cuprate-ferrate compositions for temperature independent resistive oxygen sensors
J. Electroceramics, **16**, 179-186 (2006), doi: 10.1007/s10832-006-6203-x

R. Moos:
Automotive Exhaust Gas Sensors
In: C. A. Grimes, E. C. Dickey, M. V. Pishko (Eds.) *Encyclopedia of Sensors, Vol. 1*, p. 295 - 312, American Scientific Publishers (2006)
ISBN: 1-58883-056-X

K. Sahner, M. Fleischer, E. Magori, H. Meixner, J. Deerberg, R. Moos:
HC-sensor for exhaust gases based on semiconducting doped $SrTiO_3$ for On-Board Diagnosis
Sensors and Actuators B: Chemical, **114**, 861-868 (2006), doi: 10.1016/j.snb.2005.08.005

A. Dubbe, R. Moos:
Solid Electrolyte Hydrocarbon Gas Sensor Using Zeolite as the Sensitive Phase
Electrochemical and Solid-State Letters, **9**, H31-H34 (2006), doi: 10.1149/1.2181292

K. Sahner, R. Moos, N. Izu, W. Shin, N. Murayama:
Response kinetics of temperature independent resistive oxygen sensor formulations: a comparative study
Sensors and Actuators B: Chemical, **113**, 112-119 (2006), doi: 10.1016/j.snb.2005.02.035

Doctoral Thesis

K. Sahner:
Modeling of p-type semiconducting perovskites for gas sensor applications
In: R. Moos, G. Fischerauer (Hrsg.), Bayreuther Beiträge zur Sensorik und Messtechnik, Bd. 1, Shaker-Verlag, Aachen (2006)
ISBN: 978-3-8322-5538-1

Year 2005

Peer Reviewed Journals

R. Moos:
A Brief Overview on Automotive Exhaust Gas Sensors Based on Electroceramics
International Journal of Applied Ceramic Technology, **2**, 401-413 (2005), doi: 10.1111/j.1744-7402.2005.02041.x

J. Kita, F. Rettig, R. Moos, K.-H. Drüe, H. Thust:
Hot-Plate Gas Sensors - Are Ceramics Better?
International Journal of Applied Ceramic Technology, **2**, 383-389 (2005), doi: 10.1111/j.1744-7402.2005.02037.x

U. Röder, A. Kipka, C. Modes, R. Moos:
Untersuchung der Kompatibilität von Silberleitpasten mit bleifreien LTCC-Folien
cfi/Ber. DKG, **82** (13), 201-204 (2005)
Direct access - free: http://www.funktionsmaterialien.de/docs/Cfi-HLK-Tagung-2005-A33.pdf

F. Rettig, M. Wickles, J. Kita, R. Moos:
Anwendbarkeit von kommerziellen LTCC-Materialien für Gassensoren
cfi/Ber. DKG, **82** (13), 197-200 (2005)
Direct access - free: http://www.funktionsmaterialien.de/docs/Cfi-HLK-Tagung-2005-A3.pdf

J. Kita, F. Rettig, R. Moos:
Cofiring von LTCC Strukturen mit gebrannten Keramiken
cfi/Ber. DKG, **82** (13), 193-196 (2005)
Direct access - free: http://www.funktionsmaterialien.de/docs/Cfi-HLK-Tagung-2005-A7.pdf

K. Sahner, M. Wickles, D. Schönauer, F. Rettig, A. Roosen, R. Moos:
Strontium aluminate: a novel tape material for HTCC gas sensors
cfi/Ber. DKG, **82** (13), 170-173 (2005)
Direct access - free: http://www.funktionsmaterialien.de/docs/Cfi-HLK-Tagung-2005-A145.pdf

K. Sahner, R. Moos, M. Matam, J.J. Tunney, M. Post:
Hydrocarbon sensing with thick and thin film p-type conducting perovskite materials
Sensors and Actuators B: Chemical, **108**, 102–112 (2005), doi: 10.1016/j.snb.2004.12.104
free access: <click here>

J. Kita, F. Rettig, R. Moos, K.-H. Drüe, H. Thust:
Laser forming of LTCC Ceramics for Hot-Plate Gas Sensors
J. Microelectronics and Electronic Packaging, **2**, 14-18 (2005), doi: 10.4071/1551-4897-2.1.14

Year 2004

Peer Reviewed Journals

(*) F. Rettig, R. Moos, C. Plog:
Poisoning of Temperature Independent Resistive Oxygen Sensors by Sulfur Dioxide
J. Electroceramics, **13**, 733-738 (2004), doi: 10.1007/s10832-004-5184-x

F. Rettig, R. Moos:
Ceramic meso hot-plates for gas sensors
Sensors and Actuators B: Chemical, **103**, 91–97 (2004), doi: 10.1016/j.snb.2004.04.040

Year 2003

Peer Reviewed Journals

(*) M.E. Franke, U. Simon, R. Moos, A. Knezevic, R. Müller, C. Plog:
Development and Working Principle of an Ammonia Gas Sensor based on a Refined Model for Solvate Supported Proton Transport in Zeolites
Phys. Chem. Chem. Phys., **5**, 5195 - 5198 (2003)
Free access doi: 10.1039/b307502h

(*) A. Hürland, C. Plog, R. Moos, U. Simon:
Amperometric measurements with a nitrosyl cation conducting ceramic membrane
Phys. Chem. Chem. Phys., **5**, 5199 - 5202 (2003)
Free access doi: 10.1039/b307411k

(*) R. Moos, F. Rettig, A. Hürland, C. Plog:
Temperature-independent resistive oxygen exhaust gas sensor for lean-burn engines in thick-film technology
Sensors and Actuators B: Chemical, **93**, 43-50 (2003), doi: 10.1016/S0925-4005(03)00333-2

(*) F. Rettig, R. Moos, C. Plog:
Sulfur adsorber for thick-film exhaust gas sensors
Sensors and Actuators B: Chemical, **93**, 36-42 (2003), doi: 10.1016/S0925-4005(03)00334-4

Year 1995 - 2002

Peer Reviewed Journals (Prof. Moos only)

(*) R. Moos, R. Müller, C. Plog, A. Knezevic, H. Leye, E. Irion, T. Braun, K.-J. Marquardt , K. Binder:
Selective Ammonia Exhaust Gas Sensor for Automotive Applications
Sensors and Actuators B: Chemical, **83**, 181-189 (2002), doi: 10.1016/S0925-4005(01)01038-3

(*) A. Hürland, R. Moos, R. Müller, C. Plog, U. Simon:
A new potentiometric NO sensor based on a NO^+ cation conducting ceramic membrane
Sensors and Actuators B: Chemical, **77**, 287-292 (2001), doi: 10.1016/S0925-4005(01)00744-4

(**) R. Moos, W. Menesklou, H.J. Schreiner, K.H. Härdtl:
Materials for temperature independent resistive oxygen sensors for combustion exhaust gas control
Sensors and Actuators B: Chemical, **67**, 178-183 (2000), doi: 10.1016/S0925-4005(00)00421-4

(*) R. Moos, M. Fandel, W. Schäfer:
High-load resistors of doped titanate ceramics showing PTCR-behavior in the entire range of operation
J. Eur. Ceram. Soc., **19**, 759-763 (1999), doi: 10.1016/S0955-2219(98)00307-0

(**) R. Moos, S. Schöllhammer, K.H. Härdtl:
Electron mobility of $Sr_{1-x}La_xTiO_3$ ceramics between 600°C and 1300°C
Appl. Phys. A., **65**, 291-294 (1997), doi: 10.1007/s003390050581

(**) R. Moos, K.H. Härdtl:
Defect Chemistry of Donor Doped and Undoped Strontium Titanate Ceramics between 1000°C and 1400°C
J. Am. Ceram. Soc., **80**, 2549-2562 (1997), doi: 10.1111/j.1151-2916.1997.tb03157.x

(**) R. Moos, T. Bischoff, W. Menesklou, K.H. Härdtl:
Solubility of lanthanum in strontium titanate in oxygen-rich atmospheres
J. Mat. Sci., **32**, 4247-4252 (1997), doi: 10.1023/A:1018647117607

(**) R. Moos, K.H. Härdtl:
Electronic Transport Properties of $Sr_{1-x}La_xTiO_3$ Ceramics
J. Appl. Phys., **80**, 393-400 (1996), doi: 10.1063/1.362796

(**) R. Moos, W. Menesklou, K.H. Härdtl:
Hall mobility of undoped n-type conducting strontium titanate single crystals between 19K and 1373K
Appl. Phys. A., **61**, 389-395 (1995), doi: 10.1007/s003390050218

(**) R. Moos, A. Gnudi, K.H. Härdtl:
Thermopower of $Sr_{1-x}La_xTiO_3$ Ceramics
J. Appl. Phys., **78**, 5042-5047 (1995), doi: 10.1063/1.359731

(**) R. Moos, K.H. Härdtl:
Dependence of the Intrinsic Conductivity Minimum of $SrTiO_3$ Ceramics on the Sintering Atmosphere
J. Am. Ceram. Soc., **78**, 2569-2571 (1995), doi: 10.1111/j.1151-2916.1995.tb08707.x

(*) Work was conducted (mostly between 1995 and 2001) at DaimlerChrysler AG, Research and Technology, Friedrichshafen, Germany
(**) Work was conducted between 1990 and 1995 at Institut für Technologie der Elektrotechnik (head Prof. K.H. Härdtl; now Institut für Werkstoffe der Elektrotechnik, head Prof. Ellen Ivers-Tiffée), Universität Karlsruhe (TH), Germany