***as of September 28, 2019***

# Functional Materials related papers

**(other than sensor papers, ceramic microsystems related papers, and aerosol deposition papers)**

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

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. Michlik, A. Rosin, T. Gerdes, R. Moos:
Improved Discharge Capacity of Zinc Particles by Applying Bismuth-Doped Silica Coating for Zinc-Based Batteries
*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

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

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**, 2429-242 (2018), doi: 10.1109/TDEI.2018.007392

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

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

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

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

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

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

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

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. 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

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

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

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

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. 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
*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 $CuFeO_2$
*Materials*, **9**, 227 (2016), doi: 10.3390/ma9040227

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
*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

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
*Journal of Ceramic Science and Technology*, **6**, 147-182 (2015), doi: 10.4416/JCST2015-00018

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

I. Pricha, W. Rossner, R. Moos:
Pressureless sintering of luminescent $CaAlSiN_3$:Eu ceramics
*Journal of Ceramic Science and Technology*, **6**, 63-68 (2015), doi: 10.4416/JCST2014-00047

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 $CaAlSiN_3$: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

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

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
*Materials*, **7**, 5633-5642 (2014), doi: 10.3390/ma7085633

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

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

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

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

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

D. Chen, A. Groß, D.C. Bono, R. Moos, H.L. Tuller:
Electrical conductivity relaxation measurements: Application of low thermal mass heater stick
*Solid State Ionics 18*, June 2-7, 2013, Kyoto, Japan, Abstracts, p. 20

J. Exner, M. Maier, P. Fuierer, R. Moos:
Aerosol Deposition of Bismuth Vanadates
*Solid State Ionics 18*, June 2-7, 2013, Kyoto, Japan, Abstracts, p. 132

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

T. Stöcker, R. Moos, R. Rüger:
Defect chemistry and thermoelectric properties of doped Delafossite-type oxide $CuFeO_2$
*2nd International Conference on Materials for Energy*, EnMat II, Karlsruhe, Germany, May 12-16, 2013, 1.02-04

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

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

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

S. Denneler, C. Schuh, K. Benkert, R. Moos:
Piezoelectric ceramic compositions for oxygen poor sintering conditions
*Electroceramics XII*, June 13-16, 2010, Trondheim, Norway

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

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

R. Moos:
Kap. 2.5 Elektrische Eigenschaften.
In W. Kollenberg (Hrsg.): Technische Keramik, Vulkan-Verlag GmbH, Essen (2009), 121-135, 2. Auflage, ISBN 978-3-8027-2953-9

R. Moos:
Kap. 5.3 Anwendungen keramischer Werkstoffe in der Technik: Elektronik.
In W. Kollenberg (Hrsg.): Technische Keramik, Vulkan-Verlag GmbH, Essen (2009), 605-609, 2. Auflage, ISBN 978-3-8027-2953-9

A.S. Kumar, P. Suresh, M.M. Kumar, M.L. Post, K. Sahner, R. Moos, S. Srinath:
Magnetic and ferroelectric properties of Fe doped $SrTiO_3$ film
*International Conference on Magnetism - ICM 2009*, Karlsruhe, Germany, July 26-31, 2009,
*Journal of Physics: Conference Series* 200 (2010) 092010, doi:10.1088/1742-6596/200/9/092010

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

T. Richter, S. Denneler, C. Schuh, E. Suvaci, R. Moos:
Textured PMN-PT and PMN-PZT
*J. Am. Ceram. Soc.*, **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

S. Denneler, K. Benkert, C. Schuh, R. Moos:
Influence of sintering conditions on doped PZT ceramics for base-metal electrode multilayer actuators
*Electroceramics XI*, Manchester, United Kingdom, 31.8.08 - 3.9.08, D2-040-O

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

T. Richter, C. Schuh, S. Denneler, E. Suvaci, R. Moos:
Grain oriented PMN-PT and PMN-PZT
*10th International Conference and Exhibition of the European Ceramic Society*, June 17 - 21, 2007, Berlin

A. Dubbe, R. Moos:
$H^+/Na^+$ ion equilibria of ZSM-5 with respect to surface composition
*19. Deutsche Zeolith-Tagung*, Leipzig, 7. -9. März 2007, p. 150-151

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

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

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)

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)

K. Sahner, R. Moos, V. Vashook, U. Guth:
Initial Defect Chemical Studies of Temperature Independent Oxygen Sensors
*Solid State Ionics 15*, July 17-22, 2005, Baden-Baden, Germany, P 581

A. Baumgartner, R. Mariychuk, W. Seidl, H. Porteanu, F. E. Wagner, A. Dubbe, R. Moos, J. Breu:
Synthesis and Properties of Fluorovermiculite with High Contents of Iron
*12. Vortragstagung der GDCh-Fachgruppe Festkörperchemie und Materialforschung*, Gießen, 12.-15..9.2004, A5, *Z. Anorg. Allg. Chem.* 2004, 630, 1710, doi: 10.1002/zaac.200470037

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