

Publikationsliste von Dr. Thomas Lunkenbein

2009

[1] **Shaping Colloidal Rutile into Thermally Stable and Porous Mesoscopic Titania Balls**

R. S. Yelamanchili, Y. Lu, T. Lunkenbein, N. Miyajima, L. T. Yan, M. Ballauff, J. Breu.
Small **2009**, 5, 1326-1333.

[2] **Deformation Measurements on Thin Clay Tactoids**

D. A. Kunz, E. Max, R. Weinkamer, T. Lunkenbein, J. Breu, A. Fery.
Small **2009**, 5, 1816-1820.

[3] **Template-Directed Synthesis of Hybrid Titania Nanowires within Core-Shell Bishydrophilic Cylindrical Polymer Brushes**

J. Yuan, Y. Lu, F. Schacher, T. Lunkenbein, S. Weiss, H. Schmalz, A. H. E. Müller.
Chemistry of Materials **2009**, 21, 4146-4154.

2010

[4] **Tailoring Shear-Stiff, Mica-like Nanoplatelets**

M. W. Möller, U. A. Handge, D. A. Kunz, T. Lunkenbein, V. Altstädt, J. Breu.
ACS Nano **2010**, 4, 717-724.

[5] **Composites of Metal Nanoparticles and TiO₂ Immobilized in Spherical Polyelectrolyte Brushes**

Y. Lu, T. Lunkenbein, J. Preussner, S. Proch, J. Breu, R. Kempe, M. Ballauff.
Langmuir **2010**, 26, 4176-4183.

[6] **Barrier Properties of Synthetic Clay with a Kilo-Aspect Ratio**

M. W. Möller, T. Lunkenbein, H. Kalo, M. Schieder, D. A. Kunz, J. Breu.
Advanced Materials **2010**, 22, 5245-5249.

[7] **Kilo Aspect Ratio Clay Platelets**

M. W. Möller, T. Lunkenbein, D. A. Kunz, H. Kalo, M. Schieder, J. Breu.
Zeitschrift für Anorganische und Allgemeine Chemie **2010**, 636, 2113.

2011

[8] **Shear Stiff, Surface Modified, Mica-like Nanoplatelets: a Novel Filler for Polymer Nanocomposites**

M. R. Schütz, H. Kalo, T. Lunkenbein, A. H. Gröschel, A. H. E. Müller, C. A. Wilkie, J. Breu.
Journal of Materials Chemistry **2011**, 21, 12110-12116.

[9] **Intumescent-like Behavior of Polystyrene Synthetic Clay Nanocomposites**

M. R. Schütz, H. Kalo, T. Lunkenbein, J. Breu, C. A. Wilkie.
Polymer **2011**, 52, 3288-3294.

2012

[10] **Particle Nanosomes with Tailored Silhouettes**

C. S. Wagner, A. Fortini, E. Hofmann, T. Lunkenbein, M. Schmidt, A. Wittemann.
Soft Matter **2012**, *8*, 1928-1933.

[11] **Catalytic activity of nanoalloys from gold and palladium**

J. Kaiser, L. Leppert, H. Welz, F. Polzer, S. Wunder, N. Wanderka, M. Albrecht,
T. Lunkenbein, J. Breu, S. Kümmel, Y. Lu, M. Ballauff.
Physical Chemistry Chemical Physics **2012**, *14*, 6487-6495.

[12] **UV-Cured, Flexible, and Transparent Nanocomposite-Coating with Remarkable Oxygen Barrier**

M. W. Möller, D. A. Kunz, T. Lunkenbein, S. Sommer, A. Nennemann, J. Breu.
Advanced Materials **2012**, *24*, 2142-2147.

[13] **Template-Directed Synthesis of Hollow Silica Nanowires and Nanotubes from Cylindrical Core-Shell Polymer Brushes**

M. Müllner, T. Lunkenbein, J. Breu, F. Caruso, A. H. E. Müller.
Chemistry of Materials **2012**, *24*, 1802-1810.

[14] **A Facile Polymer Templating Route Towards High Aspect Ratio Crystalline Titania Nanostructures**

M. Müllner, T. Lunkenbein, N. Miyajima, J. Breu, A. H. E. Müller.
Small **2012**, *8*, 2636-2640.

[15] **Template-Directed Mild Synthesis of Anatase Nanotubes within Cylindrical Core-Shell-Corona Polymer Brushes**

M. Müllner, T. Lunkenbein, M. Schieder, N. Miyajima, M. Förtsch, J. Breu, F. Caruso, A.H.E. Müller.
Macromolecules, **2012**, *45*, 6981-6988.

[16] **Direct Synthesis of Inverse Hexagonally Ordered Diblock Copolymer/Polyoxometalate Nanocomposite Films**

T. Lunkenbein, M. Kamperman, Z. Li, H. Sai, C. Bojer, S. Förster, U. Wiesner, A.H.E. Müller, J. Breu.
Journal of the American Chemical Society **2012**, *134*, 12685-12692.

[17] **Packing of Cylindrical Keggin-Type Polyoxometalate Hybrid Micelles as a Function of Aspect Ratio**

T. Lunkenben, M. Schieder, C. Bojer, A. H. E. Müller, J. Breu.
Zeitschrift für Physikalische Chemie **2012**, *226*, 815-826.

[18] **Access to Ordered Porous Molybdenum Oxycarbide/Carbon Nanocomposites**

T. Lunkenbein, D. Rosenthal, F. Girgsdies, T. Otremba, Z. Li, H. Sai, C. Bojer, U. Wiesner, J. Breu.
Angewandte Chemie **2012**, *124*, 13066-13070; *Angewandte Chemie- International Edition* **2012**, *51*, 12892-12896.

2013

[19] **Controlled Preparation of Highly Crystalline Tungsten Oxide Nanotubes**

M. Schieder, T. Lunkenbein, T. Martin, W. Milius, J. Breu.

Journal of Materials Chemistry A **2013**, *1*, 381-387.

[20] **Towards Mesoporous Keggin-Type Polyoxometalate –Systematic Removal of Organic Templates**

T. Lunkenbein, M. Kamperman, M. Schieder, S. With, Z. Li, H. Sai, S. Förster, U. Wiesner, J. Breu.

Journal of Materials Chemistry A **2013**, *1*, 6238-6248.

[21] **63rd Meeting of the Nobel-Prize Winners in Lindau**

T. Lunkenbein

Chemie in unserer Zeit **2013**, *47*, 209.

2014

[22] **Electrocatalytic Oxygen Evolution on Iridium Oxide: Uncovering Catalyst-Substrate Interactions and Active Iridium Oxide Species**

T. Reier, D. Teschner, T. Lunkenbein, A. Bergmann, S. Selve, R. Krähnert, R. Schlögl, P. Strasser

Journal of the Electrochemical Society **2014**, *161*, F876-F882.

[23] **Facile large-scale synthetic route to monodisperse ZnO nanocrystals**

S. Ehlert, T. Lunkenbein, J. Breu, S. Förster

Colloids and Surfaces A- Physicochemical and Engineering Aspects **2014**, *444*, 76-80.

[24] **Trendberichte zur Festkörperchemie**

M. Behrens, T. Lunkenbein, R. Weihreich

Nachrichten der Chemie **2014**, *62*, 251-263.

[25] **Synthesis and Characterisation of a Highly Active Cu/ZnO:Al Catalyst**

J. Schumann, T. Lunkenbein, A. Tarasov, N. Thomas, R. Schlögl, M. Behrens

ChemCatChem **2014**, *6*, 2889-2897.

[26] **Decomposition synthesis of tuneable, macroporous carbon foams from crystalline precursors via in situ templating**

D. Ressnig, T. Corbiere, T. Lunkenbein, U. Braun, M. G. Willinger, M. Antonietti

Journal of Materials Chemistry A **2014**, *2*, 18076-18081.

2015

[27] Direct Observation of Graphene Growth and Associated Copper Substrate Dynamics by in Situ Scanning Electron Microscopy

Z. J. Wang, G. Weinberg, Q. Zhang, T. Lunkenbein, A. Klein-Hoffmann, M. Kurnatowska, M. Plodinec, Q. Li, L. Chi, R. Schlögl, M. G. Willinger
ACS Nano, **2015**, *9*, 1506-1519.

[28] Formation of a ZnO Overlayer in Industrial Cu/ZnO/Al₂O₃ Catalysts Induced by Strong Metal-Support Interactions

T. Lunkenbein, J. Schumann, M. Behrens, R. Schlögl, M. G. Willinger
Angewandte Chemie-International Edition **2015**, *54*, 4544-4548.

[29] Direct Imaging of Octahedral Distortion in a Complex Molybdenum Vanadium Mixed Oxide

T. Lunkenbein, F. Girgsdies, A. Wernbacher, J. Noack, G. Auffermann, A. Yasuhara, A. Klein-Hoffmann, W. Ueda, M. Eichelbaum, A. Trunschke, R. Schlögl, M. G. Willinger
Angewandte Chemie International Edition **2015**, *54*, 6828-6831.

[30] Promoting Strong Metal Support Interaction: Doping ZnO for Enhanced Activity of Cu/ZnO: M (M= Al, Ga, Mg) Catalysts

J. Schumann, M. Eichelbaum, T. Lunkenbein, N. Thomas, M. C. Alvarez-Galvan, R. Schlögl, M. Behrens
ACS Catalysis **2015**, *5*, 3260–3270.

[31] Selective Template Removal by Thermal Depolymerization to Obtain Mesostructured Molybdenum Oxycarbide

M. Schieder, T. Lunkenbein, C. Bojer, M. Dulle, J. vom Stein, G. Auffermann, T. Löbbling, J. Schöbel, H. Schmalz, J. Breu
Zeitschrift für anorganische und allgemeine Chemie **2015**, *641*, 1829-1834.

[32] CO oxidation as a test reaction for strong metal–support interaction in nanostructured Pd/FeO x powder catalysts

P. Kast, M. Friedrich, D. Teschner, F. Girgsdies, T. Lunkenbein, R. Naumann d'Alnoncourt, M. Behrens, R. Schlögl
Applied Catalysis A: General **2015**, *502*, 8-17.

[33] Structure sensitivity of the oxidative activation of methane over MgO model catalysts: II. Nature of active sites and reaction mechanism

P. Schwach, N. Hamilton, M. Eichelbaum, L. Thum, T. Lunkenbein, R. Schlögl, A. Trunschke
Journal of Catalysis **2015**, *329*, 574-587.

2016

[34] **Selective Alkane Oxidation by Manganese Oxide: Site Isolation of MnO_x Chains at the Surface of MnWO₄ Nanorods**

X. Li, T. Lunkenbein, V. Pfeifer, M. Jastak, P. Kjaer-Nielsen, F. Girgsdies, A. Knop-Gericke, F. Rosowski, R. Schlögl, A. Trunschke

Angewandte Chemie International Edition **2016**, *55*, 4092-4096.

[35] **Strong metal-support interaction and alloying in Pd/ZnO catalysts for CO oxidation**

P. Kast, M. Friedrich, F. Girgsdies, J. Kröhnert, D. Teschner, T. Lunkenbein, M. Behrens, R. Schlögl

Catalysis Today **2016**, *260*, 21-31.

[36] **Is Nanostructuring Sufficient to Get Catalytically Active Au?**

A. Y. Klyushin, M. T. Greiner, X. Huang, T. Lunkenbein, X. Li, O. Timpe, M. Friedrich, M. Hävecker, A. Knop-Gericke, R. Schlögl

ACS Catalysis **2016**, *6*, 3372-3380.

[37] **Hydrothermal synthesis of bi-functional nanostructured manganese tungstate catalysts for selective oxidation**

X. Li, T. Lunkenbein, J. Kröhnert, V. Pfeifer, F. Girgsdies, F. Rosowski, R. Schlögl, A. Trunschke

Faraday Discussions **2016**, *188*, 99-113.

[38] **Promotion Mechanisms of Iron Oxide-Based High Temperature Water–Gas Shift Catalysts by Chromium and Copper**

M. Zhu, T. C. R. Rocha, T. Lunkenbein, A. Knop-Gericke, R. Schlögl, I. E. Wachs

ACS Catalysis **2016**, *6*, 4455-4464.

[39] **Room-temperature CO oxidation catalyst: low temperature metal-support interaction between platinum nanoparticles and nanosized Ceria**

S. Gatla, D. Aubert, G. Agostini, O. Mathon, S. Pascarelli, T. Lunkenbein, M. G. Willinger, H. Kaper

ACS Catalysis **2016**, *6*, 6151-6155.

[40] **Bridging the time gap: Cu/ZnO/Al₂O₃ methanol synthesis catalyst studied under industrial relevant conditions and time scales**

T. Lunkenbein, F. Girgsdies, T. Kandemir, N. Thomas, M. Behrens, R. Schlögl, E. Frei

Angewandte Chemie International Edition **2016**, *55*, 12708-12712.

[41] **High-temperature stable Ni nanoparticles for the dry reforming of methane**

K. Mette, S. Kühn, A. Tarasov, M. G. Willinger, J. Kröhnert, S. Wrabetz, A. Trunschke, M. Scherzer, F. Girgsdies, H. Düdder, K. Kähler, K. Friedel-Ortega, M. Muhler, R. Schlögl, M. Behrens, T. Lunkenbein

ACS Catalysis **2016**, *6*, 7238-7248.

2017

[42] Template Removal via Boudouard Equilibrium Allows for Synthesis of Mesostructured Molybdenum Compounds

M. Schieder, C. Bojer, J. vom Stein, S. Koch, T. Martin, H. Schmalz, J. Breu, T. Lunkenbein
Angewandte Chemie International Edition **2017**, *56*, 13968–13972.

[43] Methanol Synthesis from Industrial CO₂ Sources: A Contribution to Chemical Energy Conversion

M. Bukhtiyarova, T. Lunkenbein, K. Kähler, R. Schlögl
Catalysis Letters **2017**, *147*, 416-427.

[44] Role of Composition and Size of Cobalt Ferrite Nanocrystals in the Oxygen Evolution Reaction

K. Chakrapani, G. Bendt, H. Hajiyani, I. Schwarzrock, T. Lunkenbein, S. Salamon, J. Landers, H. Wende, R. Schlögl, R. Pentcheva, M. Behrens, S. Schulz
ChemCatChem **2017**, *9*, 2988-2995.

[45] The Impact of the Bulk Structure on Surface Dynamics of Complex Mo-V-based Oxide Catalysts

A. Trunschke, J. Noack, S. Trojanov, F. Girgsdies, T. Lunkenbein, V. Pfeifer, M. Hävecker, P. Kube, C. Sprung, F. Rosowski, R. Schlögl
ACS Catalysis **2017**, *7*, 3061-3071.

[46] Topotactic Synthesis of Porous Cobalt Ferrite Platelets from a Layered Double Hydroxide Precursor and their Application in Oxidation Catalysis

K. Friedel-Ortega, S. Anke, S. Salamon, F. Özcan, J. Heese, C. Andronesco, J. Anders, H. Wende, W. Schuhmann, M. Muhler, T. Lunkenbein, M. Behrens
Chemistry- A European Journal **2017**, *23*, 12443–12449.

[47] Exploring structural complexity: local nano-structures in a molybdenum vanadium mixed oxide

L. Masliuk, M. Heggen, J. Noack, F. Girgsdies, A. Trunschke, K. Hermann, M. G. Willinger, R. Schlögl, T. Lunkenbein
The Journal of Physical Chemistry C, **2017**, *121*, 24093–24103.

[48] Mesostructured ZnO/Au Nanoparticle Composites with Enhanced Photocatalytic Activity

C. Bojer, J. Schöbel, T. Martin, T. Lunkenbein, D. Wagner, A. Greiner, J. Breu, H. Schmalz
Polymer **2017**, *128*, 65-70.

[49] Strategy to Optimize the Composition of Uniform and Highly Dispersed Cobalt Vanadium Iron Spinel Nanocrystals for Oxygen Electrocatalysis

K. Chakrapani, G. Bendt, H. Hajiyani, T. Lunkenbein, M. Greiner, L. Masliuk, S. Salamon, J. Landers, H. Wende, R. Pentcheva, S. Schulz, M. Behrens
ACS Catalysis **2017**, DOI: 10.1021/acscatal.7b03529.

2018

[50] **Strong Metal Support Interaction as a key factor of Au activation in CO oxidation**

A.Y. Klyushin, T.E. Jones, T. Lunkenbein, P. Kube, X. Li, M. Hävecker, A. Knop-Gericke, R. Schlögl
submitted.

[51] **Facile synthesis of high-surface area platinum-doped ceria for low temperature CO oxidation**

S. Gatla, D. Aubert, V. Flaud, R. Grosjean, T. Lunkenbein, O. Mathon, S. Pascarelli, H. Kaper
submitted.

[52] **A quasi in-situ TEM reactor for decoupling catalytic gas phase reaction and analysis**

L. Masliuk, M. Swoboda, R. Schlögl, T. Lunkenbein
to be submitted.