

**Publication List**

1. O. Hinrichsen, F. Rosowski, M. Muhler  
Die Mikrokinetische Modellierung der temperaturprogrammierten Stickstoffdesorption vom technischen Eisenkatalysator für die Ammoniaksynthese  
*Chem.-Ing.-Tech.* **66** (1994) 1375-1378.
2. O. Hinrichsen, F. Rosowski, M. Muhler, G. Ertl  
The Microkinetics of Ammonia Synthesis Catalyzed by Cs-promoted Supported Ruthenium  
*Chem. Eng. Sci.* **51** (1996) 1683-1690.
3. Rosowski, O. Hinrichsen, M. Muhler, G. Ertl  
The Temperature-programmed Desorption of N<sub>2</sub> from a Ru/MgO Catalyst Used for Ammonia Synthesis  
*Catal. Lett.* **36** (1996) 229-235.
4. M. Muhler, F. Rosowski, O. Hinrichsen, A. Hornung, G. Ertl  
Ruthenium as Catalyst for Ammonia Synthesis  
*Stud. Surf. Sci. Catal.* **101** (1996) 317-326.
5. O. Hinrichsen, F. Rosowski, A. Hornung, M. Muhler, G. Ertl  
The Kinetics of Ammonia Synthesis over Ru-based Catalysts:  
Part 1: The Dissociative Chemisorption and Associative Desorption of N<sub>2</sub>  
*J. Catal.* **165** (1997) 33-44.
6. F. Rosowski, A. Hornung, O. Hinrichsen, D. Herein, M. Muhler, G. Ertl  
Ruthenium Catalysts for Ammonia Synthesis at High Pressures:  
Preparation, Characterization, and Power-Law Kinetics  
*Appl. Catal. A: General* **151** (1997) 443-460.
7. Z. Kowalczyk, J. Sentek, S. Jodzis, M. Muhler, O. Hinrichsen  
Effect of Potassium on the Kinetics of Ammonia Synthesis and Decomposition over Fused Iron Catalyst at Atmospheric Pressure  
*J. Catal.* **169** (1997) 407-414.
8. O. Hinrichsen, F. Rosowski, M. Muhler, G. Ertl  
Microkinetic Analysis of Temperature-Programmed Experiments in a Microreactor Flow System  
*Stud. Surf. Sci. Catal.* **109** (1997) 389-400.
9. T. Genger, O. Hinrichsen, M. Muhler  
The Temperature-Programmed Desorption of Hydrogen from Copper Surfaces  
*Catal. Lett.* **59** (1999) 137-141.

10. O. Hinrichsen  
Kinetic Simulation of Ammonia Synthesis Catalyzed by Ruthenium  
*Catal. Today* **53** (1999) 177-188.
11. O. Hinrichsen, A. Hornung, M. Muhler  
Modeling of Temperature-Programmed Surface Reactions  
*Chem. Eng. Technol.* **22** (1999) 1039-1042.
12. T. Genger, O. Hinrichsen, M. Muhler  
Chemisorption of N<sub>2</sub>O und H<sub>2</sub> for Cu Surface Area Determination  
*Chem. Eng. Technol.* **23** (2000) 956-959.  
Die Chemisorption von N<sub>2</sub>O und H<sub>2</sub> zur Oberflächenbestimmung von Kupfer-Katalysatoren  
*Chem.-Ing.-Tech.* **72** (2000) 94-98.
13. O. Hinrichsen, T. Genger, M. Muhler  
Probing the Elementary Steps of the Water-Gas Shift Reaction with Transient Experiments  
*Stud. Surf. Sci. Catal.* **130** (2000) 3825-3830.
14. A.C. van Veen, H.W. Zanthoff, O. Hinrichsen, M. Muhler  
Fixed-bed Microreactor for Transient Kinetic Experiments with Strongly Adsorbing Gases under High Vacuum  
*J. Vac. Sci. Technol. A* **19**(2) (2001) 651-655.
15. M.M. Günter, T. Ressler, B. Bems, C. Büscher, T. Genger, O. Hinrichsen, M. Muhler, R. Schlögl  
Implication of the Microstructure of Binary Cu/ZnO Catalysts for Their Catalytic Activity in Methanol Synthesis  
*Catal. Lett.* **71** (2001) 37-44.
16. H. Bielawa, O. Hinrichsen, A. Birkner, M. Muhler  
The Ammonia Synthesis Catalyst of the Next Generation: Barium-Promoted Oxide-Supported Ruthenium  
*Angew. Chem. Int. Ed.* **40** (2001) 1061-1063.  
Der Ammoniakkatalysator der nächsten Generation: Barium-promotiertes Ruthenium auf oxidischen Trägern  
*Angew. Chem.* **113** (2001) 1093-1096.
17. H. Bielawa, M. Kurtz, T. Genger, O. Hinrichsen  
Rapid Kinetic Measurements in Methanol and Ammonia Syntheses  
*Ind. Eng. Chem. Res.* **40** (2001) 2793-2800.
18. H. Bielawa, M. Kurtz, O. Hinrichsen  
The Quasi-Isothermal Temperature-Programmed Method for Rapid Kinetic Measurements  
*Chem.-Ing.-Tech.* **73** (2001) 685.
19. A.C. van Veen, O. Hinrichsen, M. Muhler  
TAP Reactor Experiments over an Unsupported Polycrystalline Silver Catalyst: The Influence of Different Oxygen States on the Reactivity in Selective Oxida-

tion Reactions

*in: 4<sup>th</sup> World Congress on Oxidation Catalysis (Hrsg. H. Geiling), 2001, 113-117.*

20. S. Besselmann, C. Freitag, O. Hinrichsen, E. Löffler, M. Muhler  
On the Role of Different Vanadia Species in the Adsorption and Oxidation of Toluene over  $V_2O_5/TiO_2$  Catalysts (Eurocat)  
*in: 4<sup>th</sup> World Congress on Oxidation Catalysis (Hrsg. H. Geiling), 2001, 305-308.*
21. S. Besselmann, C. Freitag, O. Hinrichsen, M. Muhler  
Temperature-Programmed Reduction and Oxidation Experiments with  $V_2O_5/TiO_2$  Catalysts  
*Phys. Chem. Chem. Phys.* **3** (2001) 4633-4638.
22. D. Szmigiel, H. Bielawa, M. Kurtz, O. Hinrichsen, M. Muhler, W. Raróg, S. Jodzis, Z. Kowalczyk, L. Znak, J. Zieliński  
The Kinetics of Ammonia Synthesis over Ruthenium-based Catalysts: The Role of Barium and Caesium  
*J. Catal.* **205** (2002) 205-212.
23. G.W. Busser, O. Hinrichsen, M. Muhler  
The Temperature-Programmed Desorption of Oxygen from an Alumina-Supported Silver Catalyst  
*Catal. Lett.* **79** (2002) 49-54.
24. C. Zupanc, A. Hornung, O. Hinrichsen, M. Muhler  
The Interaction of Hydrogen with Ru/MgO Catalysts  
*J. Catal.* **209** (2002) 501-514.
25. A.C. van Veen, O. Hinrichsen, M. Muhler  
Mechanistic Studies on the Oxidative Dehydrogenation of Methanol over Polycrystalline Silver Using the Temporal-Analysis-of-Products Approach  
*J. Catal.* **210** (2002) 53-66.
26. H. Wilmer, O. Hinrichsen  
Dynamical Changes in Cu/ZnO/Al<sub>2</sub>O<sub>3</sub> Catalysts  
*Catal. Lett.* **82** (2002) 117-122.
27. M. Kurtz, H. Wilmer, T. Genger, O. Hinrichsen, M. Muhler  
Deactivation of Supported Copper Catalysts for Methanol Synthesis  
*Catal. Lett.* **86** (2003) 77-80.
28. H. Wilmer, T. Genger, O. Hinrichsen  
The Interaction of Hydrogen with Alumina-Supported Copper Catalysts: A TPA/TPD/IER Study  
*J. Catal.* **215** (2003) 188-198.
29. H. Wilmer, M. Kurtz, K. Klemendiev, O.P. Tkachenko, W. Grünert, O. Hinrichsen, A. Birkner, S. Rabe, K. Merz, M. Driess, C. Wöll, M. Muhler  
Methanol Synthesis over ZnO - A Structure-Sensitive Reaction?  
*Phys. Chem. Chem. Phys.* **5** (2003) 4736-4742.

30. M. Schur, B. Bems, A. Dassenoy, I. Kassatkine, J. Urban, H. Wilmer, O. Hinrichsen, M. Muhler, R. Schlögl  
Continuous Coprecipitation of Catalysts in a Micromixer: Nanostructured: Cu/ZnO Composite for the Synthesis of Methanol  
*Angew. Chem. Int. Ed.* **42** (2003) 3815-3817.  
Kontinuierliche Cofällung von Katalysatoren in einem Mikromischer: nanostrukturierte Cu/ZnO-Komposite für die Methanolsynthese  
*Angew. Chem.* **115** (2003) 3945-3947.
31. M. Kurtz, H. Wilmer, O. Hinrichsen, M. Muhler  
The Relevance of Metal-Support Interactions in Methanol Synthesis and Water-Gas Shift Reaction  
*Proc. of the DGMK-Conference „Innovation in the Manufacture and Use of Hydrogen“*, Hamburg, 2003, p. 307-312.
32. M. Kurtz, N. Bauer, C. Büscher, H. Wilmer, O. Hinrichsen, R. Becker, S. Rabe, K. Merz, M. Driess, R.A. Fischer, M. Muhler  
New Synthetic Routes to Cu/ZnO Catalysts Used for Methanol Synthesis  
*Catal. Lett.* **92** (2004) 49-52.
33. M. Kurtz, N. Bauer, H. Wilmer, O. Hinrichsen, M. Muhler  
Rationales Katalysatordesign am Beispiel des Methanolkatalysators  
*Chem.-Ing.-Tech.* **76** (2004) 42-46.  
Rational Catalyst Design of Methanol Synthesis Catalysts  
*Chem. Eng. Technol.* **27** (2004) 1146-1150.
34. R. Becker, H. Parala, F. Hipler, O.P. Tkachenko, K.V. Klementiev, W. Grünert, H. Wilmer, O. Hinrichsen, M. Muhler, A. Birkner, C. Wöll, S. Schäfer R.A. Fischer  
MOCVD-Loading of Mesoporous Siliceous Matrices with Cu/ZnO:Supported Catalysts for Methanol Synthesis  
*Angew. Chem. Int. Ed.* **43** (2004) 2839-2842.  
MOCVD-Beladung mesoporöser Silikatmatrizen mit Cu/ZnO: neuartige Trägerkatalysatoren für die Methanolsynthese  
*Angew. Chem.* **116** (2004) 2899-2903.
35. J. Aßmann, V. Narkhede, L. Khodeir, E. Löffler, O. Hinrichsen, A. Birkner, H. Over, M. Muhler  
On the Nature of the Active State of Supported Ruthenium Catalysts Used for the Oxidation of Carbon Monoxide: Steady-state and Transient Kinetics Combined with *in situ* Infrared Spectroscopy  
*J. Phys. Chem. B* **108** (2004) 14634-14642.
36. J. Strunk, M. Bergmann, O. Hinrichsen, K. Fink, I. Hegemann, B. Meyer  
Mikrokinetische Modellierung als Brücke zwischen Quantenchemie und Bilanzgleichungen  
*Chem.-Ing.-Tech.* **76** (2004) 1424-1425.
37. D. Hu, S. Geisler, O. Hinrichsen  
Transiente Experimente zur Aufklärung mechanistischer Vorgänge bei der oxidativen Dehydrierung von Ethylbenzol

- Chem.-Ing.-Tech.* **76** (2005) 1033.
38. M. Kurtz, J. Strunk, O. Hinrichsen, M. Muhler, K. Fink, B. Meyer, C. Wöll  
Aktive Zentren an Oxidoberflächen: Die ZnO-katalysierte Methanolsynthese aus CO und H<sub>2</sub>  
*Angew. Chem.* **117** (2005) 2850-2854.  
Active Sites on Oxide Surfaces: Zinc Oxide Catalyzed Methanol Synthesis from CO and H<sub>2</sub>  
*Angew. Chem. Int. Ed.* **44** (2005) 2790-2794.
  39. R. Naumann d'Alnoncourt, M. Bergmann, E. Löffler, O. Hinrichsen, M. Muhler  
The Coverage-Dependent Adsorption of Carbon Monoxide on Hydrogen-Reduced Copper Catalysts: the Combined Application of Microcalorimetry, Temperature-Programmed Desorption and FTIR Spectroscopy  
*Thermochimica Acta* **434** (2005) 132-139.
  40. J. Strunk, R. Naumann d'Alnoncourt, M. Bergmann, S. Litvinov, X. Xia, O. Hinrichsen M. Muhler,  
Microkinetic Modeling of CO TPD Spectra Using Coverage Dependent Microcalorimetric Heats of Adsorption  
*Phys. Chem. Chem. Phys.* **13**, (2006) 1556-1565.
  41. R. Naumann d'Alnoncourt, X. Xia, J. Strunk, E. Löffler, O. Hinrichsen, M. Muhler  
The Influence of Strongly Reducing Conditions on Strong Metal-Support Interactions in Cu/ZnO Catalysts Used for Methanol Synthesis  
*Phys. Chem. Chem. Phys.* **13**, (2006) 1525-1538.
  42. S. Polarz, J. Strunk, V. Ischenko, M.W.E. van den Berg, O. Hinrichsen, M. Muhler, M. Driess  
Über den Einfluss von Sauerstoffdefektstellen auf die katalytische Aktivität von Zinkoxid  
*Angew. Chem.* **118** (2006) 2850-2854.  
S. Polarz, J. Strunk, V. Ischenko, M.W.E. van den Berg, O. Hinrichsen, M. Muhler, M. Driess  
On the Role of Oxygen Defects in the Catalytic Performance of Zinc Oxide  
*Angew. Chem. Int. Ed.* **45** (2006) 2965-2969.
  43. J. Strunk, O. Hinrichsen  
Basischemikalie Methanol  
*Nachrichten aus der Chemie* **11** (2006) 1080-1084.
  44. H. Marschall, O. Hinrichsen, W. Polifke, Numerische Simulation von Mehrphasenreaktoren mittels hybridem CFD-Modell in OpenFOAM (HIRES-TFM),  
*Chem.-Ing.-Tech.* **80** (2008) 1303.
  45. S. Witt, O. Hinrichsen,  
Hochdisperse Nickelkatalysatoren für einen neuen Weg der Propensynthese  
*Chem.-Ing.-Tech.* **80** (2008) 1250.
  46. H. Marschall, R. Mornhinweg, A. Kossmann, S. Oberhauser, K. Langbein, O. Hinrichsen

- Numerische Simulation disperser Gas-Flüssigströmungen in Blasensäulen bei hohen Gasgehalten mit OpenFOAM® - Teil I: Grundlagen der Modellierung  
*Chem.-Ing.-Tech.* **82** (2010) 2129-2140.
47. H. Marschall, R. Mornhinweg, A. Kossmann, S. Oberhauser, K. Langbein, O. Hinrichsen  
Numerische Simulation disperser Gas-Flüssigströmungen in Blasensäulen bei hohen Gasgehalten mit OpenFOAM® - Teil II: Numerische Simulation und Ergebnisse  
*Chem.-Ing.-Tech.* **82** (2010) 2141-2149.
48. H. Marschall, R. Mornhinweg, A. Kossmann, S. Oberhauser, K. Langbein, O. Hinrichsen  
Numerical Simulation of Dispersed Gas/Liquid Flows in Bubble Column at High Phase Fractions Using OpenFOAM® - Part I: Modeling Basics  
*Chem. Eng. Technol.* **34** (2011) 1204-1209.
49. H. Marschall, R. Mornhinweg, A. Kossmann, S. Oberhauser, K. Langbein, O. Hinrichsen  
Numerical Simulation of Dispersed Gas/Liquid Flows in Bubble Column at High Phase Fractions Using OpenFOAM® - Part II: Numerical Simulations and Results  
*Chem. Eng. Technol.* **34** (2011) 1321-1327.
50. F. Habla, H. Marschall, O. Hinrichsen, L. Dietsche, H. Jasak, J.L. Favero  
Numerical Simulation of Viscoelastic Two-Phase Flows Using OpenFOAM®  
*Chem. Eng. Sci.* **66** (2011) 5487-5496.
51. C. Irrgang, O. Hinrichsen, W.M. Lau  
Effects of orifice angle and surface roughness on the bubbling to jetting regime transition in a bubble column  
*IEC Research* **51** (2012) 4445-4451.
52. M. Peter, J. Fendt, H. Wilmer, O. Hinrichsen  
Modeling of temperature-programmed desorption (TPD) flow experiments from Cu/ZnO/Al<sub>2</sub>O<sub>3</sub> catalysts  
*Catal. Lett.* **142** (2012) 547-556.
53. H. Marschall, K. Hinterberger, C. Schüler, F. Habla, O. Hinrichsen  
Numerical Simulation of Species Transfer across Fluid Interfaces in Free-Surface Flows Using OpenFOAM®  
*Chem. Eng. Sci.* **78** (2012) 111-117.
54. M. Peter, M.B. Fichtl, H. Ruland, S. Kaluza, M. Muhler O. Hinrichsen  
Detailed kinetic modeling of methanol synthesis over a ternary copper catalyst  
*Chemical Engineering Journal* **203** (2012) 480-491.  
doi: 10.1016/j.cej.2012.06.066
55. M. Peter, J. Fendt, S. Pleintinger, O. Hinrichsen

- On the interaction of carbon monoxide with ternary Cu/ZnO/Al<sub>2</sub>O<sub>3</sub> catalysts: Modeling of dynamic morphology changes and of the influence on elementary step kinetics  
*Catalysis Science & Technology* **11** (2012) 2249-2257.  
doi: 10.1039/C2CY20189E
56. F. Habla, A. Woitalka, S. Neuner, O. Hinrichsen  
Development of a methodology for numerical simulation of non-isothermal viscoelastic fluid flows with application to axisymmetric 4:1 contraction flows  
*Chemical Engineering Journal*, **207** (2012) 772-778.  
doi: 10.1016/j.cej.2012.07.060
57. A.S. Frey, O. Hinrichsen  
Comparison of differently synthesized Ni/MCM-48 catalysts in the ETP reaction  
*Microporous Mesoporous Materials* **164** (2012) 164-171.  
doi: 10.1016/j.micromeso.2012.07.015
58. N. Jacobsen, O. Hinrichsen  
Mixing Efficiency of a Spinning Disc Reactor  
*Industrial & Engineering Chemistry Research* **51** (2012) 11643-11652.  
doi: 10.1016/j.cej.2012.07.060
59. G. Simson, E. Prasetyo, S. Reiner, O. Hinrichsen  
Continuously operated precipitation of Cu/ZnO/Al<sub>2</sub>O<sub>3</sub> catalysts for methanol synthesis in microstructured reactors with alternative precipitating agents  
*Applied Catalysis General: A* **450** (2013) 1-12.  
doi: 10.1016/j.apcata.2012.06.040
60. Y. Liu, O. Hinrichsen  
Numerical Simulation of Tube Erosion in a Bubbling Fluidized Bed with a Dense Tube Bundle  
*Chemical Engineering Technology* **36** (2013) 635-644.  
doi: 10.1002/ceat.201200625
61. F. Haseidl, N.C. Jacobsen, O. Hinrichsen  
Process Intensification on Synthesis of Nanoparticles in a Spinning Disc Reactor  
*Chemie Ingenieur Technik* **85** (2013) 540-549.  
doi: 10.1002/cite.201200224
62. F. Habla, A. Obermeier, O. Hinrichsen  
Semi-implicit stress formulation for viscoelastic models: Application to three-dimensional contraction flows  
*Journal of Non-Newtonian Fluid Mechanics* **199** (2013) 70-79.  
doi: 10.1016/j.jnnfm.2013.06.006
63. F. Habla, O. Hinrichsen  
Modeling and Simulation of Conditionally Volume Averaged Viscoelastic Two-Phase Flows  
*AIChE Journal* **59** (2013) 3928-2942.  
doi: 10.1002/aic.14095

64. F. Habla, S. Obermeier, L. Dietsche, O. Kintzel, O. Hinrichsen  
CFD Analysis of the Frame Invariance of the Melt Temperature Rise in a Single-Screw Extruder  
*International Polymer Processing* **28** (2013) 463-469.  
doi: 10.3139/217.2753
65. H. Marschall, O. Hinrichsen  
Numerical Simulation of Multi-Scale Two-Phase Flows Using a Hybrid Interface-Resolving Two-Fluid Model (HIRES-TFM)  
*Journal of Chemical Engineering of Japan* **46** (2013) 517-523.  
doi: 10.1252/jcej.12we074
66. D. Schlereth, O. Hinrichsen  
A fixed-bed reactor modeling study on the methanation of CO<sub>2</sub>  
*Chemical Engineering Research and Design* **92** (4) (2014) 702-712.  
doi: 10.1016/j.cherd.2013.11.014
67. M.B. Fichtl, J. Schumann, M. Behrens, N.C. Jacobsen, M. Muhler, R. Schlögl, O. Hinrichsen  
Counting of oxygen defects vs. metal surface sites in methanol synthesis catalysts by different probe molecules  
*Angewandte Chemie International Edition* **53** (2014) 7043-7047.  
doi: 10.1002/anie.201400575
68. D. Schmidtke, U. Heiser, O. Hinrichsen  
A simulation enhanced value stream mapping approach for optimization of complex production environments  
*Journal of Process Control* **52** (2014) 6146-6160.  
doi: 10.1080/00207543.2014.917770
69. C. Ablasser, O. Hinrichsen  
The influence of interfacial areas for gas absorption in presence of solid particles  
*Chemical Engineering Technology* **37** (2014) 1468-1474.  
doi: 10.1002/cite.201400104.
70. D. Schlereth, O. Hinrichsen  
A fixed-bed reactor modeling study Comparison of a pseudo-continuous, heterogeneous 2D conductive monolith reactor model to a 3D CFD model  
*Industrial & Engineering Chemistry Research* **53** (2014) 11550-11556.  
doi: 10.1021/ie500041e.
71. Y. Liu, O. Hinrichsen  
CFD modeling of bubbling fluidized beds using OpenFOAM®: Model validation and comparison of TVD differencing schemes  
*Computers and Chemical Engineering* **69** (2014) 75-88.  
doi: 10.1016/j.compchemeng.2014.07.002
72. Y. Liu, O. Hinrichsen



- CFD Simulation of Hydrodynamics and Methanation Reactions in a Fluidized Bed Reactor for the Production of Synthetic Natural Gas  
*Industrial & Engineering Chemistry Research* **53** (2014) 9338-9356.  
doi: 10.1021/ie500774s
73. C. Ablasser, A. Hilger, O. Hinrichsen  
Kinetic study of heterogeneously catalyzed glucose oxidation in a stirred cell  
*Chemie Ingenieur Technik* **86** (2014) 1948-1953.  
doi: 10.1002/cite.201400104.
74. F. Habla, M.W. Tan, J. Haßlberger, O. Hinrichsen  
Numerical Simulation of the Viscoelastic Flow in a Three-dimensional Lid-driven Cavity using the Log-conformation Reformulation in OpenFOAM  
*Journal of Non-Newtonian Fluid Mechanics* **212** (2014) 47-62.  
doi: 10.1016/j.jnnfm.2014.08.005
75. Y. Liu, O. Hinrichsen  
Study on turbulence closures by standard  $k-\varepsilon$  and Reynolds stress models in CFD-PBM method for bubble column flows  
*Computers and Fluids* **105** (2014) 91-100.  
doi: 10.1016/j.compfluid.2014.09.023.
76. M.B. Fichtl, O. Hinrichsen  
On the temperature programmed desorption of hydrogen from polycrystalline copper  
*Catalysis Letters* **144** (2014) 2114-2120.  
doi: 10.1007/s10562-014-1384-4
77. T. von Aretin, O. Hinrichsen  
Single-Event Kinetic Model for Cracking and Isomerization of 1-Hexene on ZSM-5  
*Industrial & Engineering Chemistry Research* **53** (2014) 19460-19470.  
doi: 10.1021/ie503628p
78. J. Saayman, M. Aumann, J.R. Grace, J.C. Lim, P.A. Reyes-Ramirez, O. Hinrichsen, N. Ellis  
Hydrodynamics of Lime-based Pellets in a Dual Fluidized Bed and the Effect of Temperature  
*Chemical Engineering Journal* **260** (2015) 532-540.  
doi: 10.1016/j.cej.2014.08.096
79. F. Habla, C. Waas, L. Dietsche, O. Hinrichsen  
Simulation of Transient Droplet Deformations Under Simple Shear Flow with a Conditionally Volume Averaged Viscoelastic Two-Phase Model  
*Chemical Engineering Science* **126** (2015) 32-41.  
doi: 10.1016/j.ces.2014.12.002
80. D. Schlereth, P.J. Donaubaue, O. Hinrichsen  
Metallic honeycombs as catalyst supports for the methanation of carbon dioxide  
*Chemical Engineering Technology* **38** (2015) 1890-1903.

doi: 10.1002/ceat.201400717

81. F. Haseidl, P. Schuh, O. Hinrichsen  
Weiterentwicklung und Charakterisierung eines Spinning-Disc-Reaktors nach dem Rotor-Stator-Prinzip  
*Chemie Ingenieur Technik* **126** (2015) 830-836.  
doi: 10.1002/cite.201400136
82. M.B. Fichtl, D. Schlereth, N. Jacobsen, I. Kasatkin, J. Schumann, M. Behrens, R. Schlögl, O. Hinrichsen  
Kinetics of deactivation on Cu/ZnO/Al<sub>2</sub>O<sub>3</sub> methanol synthesis catalysts  
*Applied Catalysis A: General* **502** (2015) 262-270.  
doi: 10.1016/j.apcata.2015.06.014
83. S. Ewald, F. Koschany, D. Schlereth, M. Wolf, O. Hinrichsen  
Die Rolle der heterogenen Katalyse im Power-to-Gas-Konzept  
*Chemie in unserer Zeit* **49** (2015) 270-278.  
doi: 10.1002/ciuz.201500715
84. T. Aretin, S. Schallmoser, S. Standl, M. Tonigold, J.A. Lercher, O. Hinrichsen  
Single-Event Kinetic Model for 1-Pentene on ZSM-5  
*Industrial & Engineering Chemistry Research* **54** (2015) 11792-11803.  
doi: 10.1021/acs.iecr.5b02629
85. F. Koschany, D. Schlereth, O. Hinrichsen  
On the kinetics of the methanation of carbon dioxide on coprecipitated Ni/Al<sub>2</sub>O<sub>3</sub>  
*Applied Catalysis B: Environmental* **181** (2016) 504-516.  
doi: 10.1016/j.apcatb.2015.07.026
86. C. Fernandes, F. Habla, O.S. Carneiro, O. Hinrichsen, J.M. Nobrega  
Development of a New 3D OpenFOAM (R) Solver to Model the Cooling Stage in Profile Extrusion  
PROCEEDINGS OF PPS-31: THE 31ST INTERNATIONAL CONFERENCE OF THE POLYMER PROCESSING SOCIETY, AIP Conference Proceedings, Vol. 1713 (2016).  
doi: 10.1063/1.4942260
87. F. Haseidl, J. Pottbäcker, O. Hinrichsen  
Gas-liquid Transfer in a Rotor-Stator Spinning Disk Reactor: Experimental Study and Correlation  
*Chemical Engineering Processing Process Intensification* **104** (2016) 181-189.  
doi: 10.1016/j.cep.2016.03.003
88. F. Habla, C. Fernandes, M. Maier, L. Densky, L.L. Ferras, A. Rajkumar, O.S. Carneiro, O. Hinrichsen, J.M. Nobrega  
Development and validation of a model for the temperature distribution in the extrusion calibration stage  
*Applied Thermal Engineering* **100** (2016) 538-552.  
doi: 10.1016/j.applthermaleng.2016.01.166
89. F. Haseidl, B. Müller, O. Hinrichsen

- Continuous Flow Synthesis and Functionalization of Magnetite: Intensified Process for Tailored Nanoparticles  
*Chemical Engineering Technology* **39** (2016) 2051-2058.  
doi: 10.1002/ceat.201600163
90. F. Haseidl, P. König, O. Hinrichsen  
Single-Phase Flow Residence Time Distributions in a Rotor-Stator Spinning Disc Reactor  
*Chemical Engineering Technology* **39** (2016) 2435-2443.  
doi: 10.1002/ceat.201600247
91. C. Schüler, O. Hinrichsen  
Entwicklung eines optisch zugänglichen Reaktors zur Thermographiemessung in einer Katalysatorschüttung  
*Chemie Ingenieur Technik* **88** (2016) 1693-1702.  
doi: 10.1002/cite.201600081
92. T. von Aretin, S. Standl, M. Tonigold, O. Hinrichsen  
Optimization of the product spectrum for 1-pentene cracking on ZSM-5 using single-event methodology. Part one: recycle reactor  
*Chemical Engineering Journal* **309** (2017) 886-897.  
doi: 10.1016/j.cej.2016.04.089
93. T. von Aretin, S. Standl, M. Tonigold, O. Hinrichsen  
Optimization of the product spectrum for 1-pentene cracking on ZSM-5 using single-event methodology. Part two: two-zone reactor  
*Chemical Engineering Journal* **309** (2017) 873-885.  
doi: 10.1016/j.cej.2016.10.103
94. J. Pottbäcker, O. Hinrichsen  
Experimental Study on the Influence of Filling Method and Particle Material on the Packed-Bed Porosity  
*Chemie Ingenieur Technik* **89** (2017) 454-458.  
doi: 10.1002/cite.201600151
95. S. Standl, M. Tonigold, O. Hinrichsen  
Single-event Kinetic Modeling of Olefins Cracking on ZSM-5: Proof of Feed Independence  
*Industrial & Engineering Chemistry Research* **56** (2017) 13096-13108.  
doi: 10.1021/acs.iecr.7b01344
96. J. Kleiner, O. Hinrichsen  
Rotor-stator spinning disc reactor: characterization of the single-phase stator-side heat transfer  
*Chemical Engineering & Technology* **40** (2017) 2123-2133.  
doi: 10.1002/ceat.201700422
97. S. Ewald, S. Standl, O. Hinrichsen  
Characterization of nickel catalysts with transient methods  
*Applied Catalysis A: General* **549** (2018) 93-101.  
doi: 10.1016/j.apcata.2017.09.023

98. C. Schüler, F. Betzenbichler, C. Drescher, O. Hinrichsen  
The preparation of Ni/SiO<sub>2</sub> catalysts via chemical vapor deposition in a fluidized-bed reactor  
*Chemical Engineering Research and Design* **133** (2018) 303-312.  
doi: 10.1016/j.cherd.2018.01.015
99. N.S. Romero, K. Wiesner-Fleischer, O. Hinrichsen, M. Fleischer  
Electrochemical reduction of CO<sub>2</sub> in water-based electrolytes KHCO<sub>3</sub> and K<sub>2</sub>SO<sub>4</sub> using Boron Doped Diamond electrodes  
*ChemistrySelect* **3** (2018) 3591-3595.  
doi: 10.1002/slct.201702414
100. P. Jeanty, C. Scherer, E. Magori, K. Wiesner-Fleischer, O. Hinrichsen, M. Fleischer  
Upscaling and continuous operation of electrochemical CO<sub>2</sub> to CO conversion in aqueous solutions on silver gas diffusion electrodes  
*Journal of CO<sub>2</sub> Utilization* **24** (2018) 454-462.  
doi: 10.1016/j.jcou.2018.01.011
101. J. Fernengel, F. Habla, O. Hinrichsen  
Scripting as an approach to automated CFD simulation for packed bed catalytic reactor modelling  
*Chemie Ingenieur Technik* **90** (2018) 685-689.  
doi: 10.1002/cite.201700153
102. M. Moreno Pastor, T. Schatz, M. Traverso, V. Wagner, O. Hinrichsen  
Social aspects of water consumption: risk of access to unimproved drinking water and to unimproved sanitation facilities-an example from the automobile industry  
*International Journal Life Cycle Assessment* **23** (2018) 940-956.  
doi: 10.1007/s11367-017-1342-7
103. T. Ludwig, J. von Seckendorff, C. Troll, M. Tonigold, R.W. Fischer, B. Rieger, O. Hinrichsen  
Additive Manufacturing of Al<sub>2</sub>O<sub>3</sub>-based carriers for heterogeneous catalysis modelling  
*Chemie Ingenieur Technik* **90** (2018) 703-707.  
doi: 10.1002/cite.201700151
104. T. Burger, F. Koschany, O. Thomys, K. Köhler, O. Hinrichsen  
CO<sub>2</sub> methanation over promoted Ni/Al(O)<sub>x</sub> catalysts: Synthesis, characterization and catalysis Study  
*Applied Catalysis A* **558** (2018) 44-55.  
doi: 10.1016/j.apcata.2018.03.021
105. C. Schüler, M. Wolf, O. Hinrichsen  
Contactless temperature measurements under static and dynamic reaction conditions in a single-pass fixed bed reactor for CO<sub>2</sub> methanation  
*Journal of CO<sub>2</sub> Utilization* **25** (2018) 158-169.  
doi: 10.1016/j.jcou.2018.03.016

106. P. Donaubaueer, O. Hinrichsen  
A Monte-Carlo-based Sensitivity Analysis of Multicomponent Diffusion in Porous Catalysts  
*Chemical Engineering Science* **185** (2018) 282-
107. J. Sundberg, S. Standl, T. von Aretin, M. Tonigold, S. Rehfeldt, O. Hinrichsen, Harald Klein  
Optimal process for catalytic cracking of higher olefins on ZSM-5  
*Chemical Engineering Journal* **340** (2018) 454-462.  
doi: 10.1016/j.cej.2018.04.060
108. J. Fernengel, J. Seckendorff, O. Hinrichsen  
Influence of Cylinder-to-Particle Diameter Ratio and Filling Speed on Bed Porosity of Random Packed Beds of Spheres  
*Proceedings of the 28th European Symposium on Computer Aided Process Engineering*, 2018.  
doi: 10.1016/b978-0-444-64235-6.50019-x
109. J. Kleiner, B. Münch, F. Rössler, F. Habla, J. Fernengel, O. Hinrichsen  
CFD simulation of single-phase heat transfer in a rotor-stator spinning disc reactor  
*Chemical Engineering Processing Process Intensification* **131** (2018) 150-160.  
doi: 10.1016/j.cep.2018.07.010
110. T. Burger, F. Koschany, A. Wenng, O. Thomys, K. Köhler, O. Hinrichsen  
Simultaneous activity and stability increase of coprecipitated Ni-Al CO<sub>2</sub> methanation catalysts by synergistic effects of Fe and Mn promoter  
*Catalysis Science & Technology* **8** (2018) 5920-5932.  
doi: 10.1039/c8cy01834k
111. S. Standl, O. Hinrichsen  
Kinetic Modeling of Catalytic Olefin Cracking and Methanol-to-Olefins (MTO) on Zeolites: A Review  
*Catalysts* **8** (2018) 626-714.  
doi: 10.3390/catal8120626
112. S. Ewald, M. Kolbeck, T. Kratky, M. Wolf, O. Hinrichsen  
On the deactivation of Ni-Al catalysts in CO<sub>2</sub> methanation  
*Applied Catalysis A: General* **570** (2019) 376-386.  
doi: 10.1016/j.apcata.2018.10.033
113. P.J. Donaubaueer, O. Hinrichsen  
Evaluation of Effectiveness Factors for Multicomponent Diffusion Models inside 3D Catalyst Shapes  
*Industrial & Engineering Chemistry Research* **58** (2019) 110-119.  
doi: 10.1021/acs.iecr.8b04922
114. N. Hupp, U. Stahl, K. Kunze, P. Wilde, H. Sinske, O. Hinrichsen

- Influence of Fire Intensity, Fire Impingement Area and Internal Pressure on the Fire Resistance of Composite Pressure Vessels for the Storage of Hydrogen in Automobile Applications  
*Fire Safety Journal* **104** (2019) 1-7.  
doi: 10.1016/j.firesaf.2018.12.004
115. J. Kleiner, O. Hinrichsen  
Epoxidation of methyl oleate in a rotor-stator spinning disc reactor  
*Chemical Engineering Processing Process Intensification* **136** (2019) 152-162.  
doi: 10.1016/j.cep.2019.01.004
116. N.S. Romero, K. Wiesner-Fleischer, M. Fleischer, A. Rucki, O. Hinrichsen  
Advantages of CO<sub>2</sub> over CO as Reactant for Electrochemical Reduction towards Ethylene, Ethanol and *n*-Propanol at High Current Densities  
*Electrochimica Acta* **307** (2019) 164-175.  
doi: 10.1016/j.electacta.2019.03.142
117. M. Wolf, C. Schüler, O. Hinrichsen  
Sulfur Poisoning of Co-Precipitated Ni-Al Catalysts for the methanation of CO<sub>2</sub>  
*Journal of CO<sub>2</sub> Utilization* **32** (2019) 80-91.  
doi: 10.1016/j.jcou.2019.03.003
118. S. Ewald, O. Hinrichsen  
On the interaction of CO<sub>2</sub> with Ni-Al catalysts  
*Applied Catalysis A: General* **580** (2019) 71-80.  
doi: 10.1016/j.apcata.2019.04.005
119. J. Fernengel, L. Bolton, O. Hinrichsen  
Characterisation and design of single pellet string reactors using numerical simulation  
*Chemical Engineering Journal* **373** (2019) 1397-1408.  
doi: 10.1016/j.cej.2019.03.114
120. P.J. Donaubaue, L. Schmalhorst, O. Hinrichsen  
2D Flow Fields in Fixed-Bed Reactor Design: A Robust Methodology for Continuum Models  
*Chemical Engineering Science* **208** (2019) 115137  
doi: 10.1016/j.ces/2019.07.055
121. S. Standl, T. Kühlewind, M. Tonigold, O. Hinrichsen  
On Reaction Pathways and Intermediates During Catalytic Olefin Cracking over ZSM-5  
*Industrial & Engineering Chemistry Research* **58** (2019) 18107-18124.  
doi: 10.1021/acs.iecr.9b02989
122. D. Hirche, F. Birkholz, O. Hinrichsen  
A Hybrid Eulerian-Eulerian-Lagrangian Model for Gas-Solid Simulations  
*Chemical Engineering Journal* **377** (2019) 119743.  
doi: 10.1016/j.cej.2018.08.129
123. D. Hirche, C. Chew, O. Hinrichsen

- Numerical study on effects of built-in impediments in an AnFMBR  
*Chemical Engineering Journal* **379** (2020) 122336.  
doi: 10.1016/j.cej.2019.122336
124. N.S. Romero, C. Scherer, B. Kaçkar, W. Eisenreich, C. Huber, K. Wiesner-Fleischer, M. Fleischer, O. Hinrichsen  
Two-step electrochemical reduction of CO<sub>2</sub> towards multi-carbon products at high current densities  
*Journal of CO<sub>2</sub> Utilization* **36** (2020) 263-275.  
doi: 10.1002/cctc.201901331
125. J. Fernengel, L. Bolton, O. Hinrichsen  
Numerical investigation of pressure drop in single pellet string reactors  
*Chemical Engineering Technology* **43** (2020) 172-182.  
doi: 10.1002/ceat.201900372
126. P.J. Donaubauer, D. Melzer, K. Wanniger, G. Mestl, M. Sanchez-Sanchez, J.A. Lercher, O. Hinrichsen  
Intrinsic Kinetic Model for Oxidative Dehydrogenation of Ethane over MoVTaNb Mixed Metal Oxides: a Mechanistic Approach  
*Chemical Engineering Journal* **383** (2020) 123195.  
doi: 10.1016/j.cej.2019.123195
127. T. Burger, H.M.S. Augenstein, K. Köhler, O. Hinrichsen  
Controlled Doping of Supported Nickel Nanoparticles with Iron by Electrochemical and Organometallic Approaches for Enhanced Performance of CO<sub>2</sub> Methanation Catalysts  
*ChemCatChem* **12** (2020) 649–662.  
doi: 10.1002/cctc.201901331
128. M. Wolf, L.H. Wong, C. Schüler, O. Hinrichsen  
Comparing activity and sulfur resistance of NiAlO<sub>x</sub> promoted by Mn, Fe, Co, Cu and Zn for the methanation of CO<sub>2</sub> based on an ex situ poisoning approach  
*Journal of CO<sub>2</sub> Utilization* **36** (2020) 276–287.  
doi: 10.1016/j.jcou.2019.10.014
129. J. von Seckendorff, N. Szesni, R. Fischer, O. Hinrichsen  
Experimental Characterization of Random Packed Spheres, Cylinders and Rings, and their Influence Pressure Drop  
*Chemical Engineering Science* **222** (2020) 115644.  
doi: 10.1016/j.ces.2020.115644
130. T. Ried, G. Salazar Duarte, O. Hinrichsen  
Experimental validation of a multidimensional model for an indirect temperature swing adsorption unit  
*Chemie Ingenieur Technik* **92** (2020) 711-719.  
doi: 10.1002/cite.201900170
131. R. Walter, J. Neumann, O. Hinrichsen

- Extended Model for Filtration in Gasoline Particulate Filters under Practical Driving Conditions  
*Environmental Science & Technology* **54** (2020) 9285-9294.  
doi: 10.1021/acs.est.0c02487
132. S. Standl, F. Kirchberger, T. Kühlewind, M. Tonigold, M. Sanchez-Sanchez, J.A. Lercher, O. Hinrichsen  
Single-Event Kinetic Model for Methanol-to-Olefins (MTO) over ZSM-5: Fundamental Kinetics for the Olefin Co-Feed Reactivity  
*Chemical Engineering Journal* **402** (2020) 126023.  
doi: 10.1016/j.cej.2020.126468
133. K.-M. Vetter, T. Reichbauer, N. Martić, D. Reinisch, O. Hinrichsen, G. Schmid  
Morphological Tuning of Membrane Processing by Temporal Proton-Metal Cation Substitution in Perfluorosulfonic Acid Membrane  
*Electrochimica Acta* **362** (2020) 137182.  
doi: 10.1016/j.electacta.2020.137182
134. T. Burger, S. Ewald, A. Niederdränk, F. E. Wagner, K. Köhler, O. Hinrichsen  
On the deactivation behavior of Fe-promoted co-precipitated Ni-Al catalysts in the methanation reaction of CO<sub>2</sub>  
*Applied Catalysis A: General* **604** (2020) 117778.  
doi: 10.1016/j.apcata.2020.117778
135. D. Hirche, O. Hinrichsen  
Implementation and evaluation of a three-level grid method for CFD-DEM simulations of dense gas–solid flows Beds  
*Chemical Engineering Journal Advances* **4** (2020) 100048.  
doi: 10.1016/j.cej.2020.100048
136. J. Bachmann, E. Gleis, G. Fruhmann, J. Riedelbauch, S. Schmölz, O. Hinrichsen  
Investigation of the temperature influence on the dual curing urethane-methacrylate resin Rigid Polyurethane 70 (RPU 70) in digital light synthesis (DLS) properties  
*Additive Manufacturing* **37** (2021) 101677.  
doi: 10.1016/j.addma.2020.101677
137. T. Burger, P.J. Donaubaue, O. Hinrichsen  
On the kinetics of the co-methanation of CO and CO<sub>2</sub> on a coprecipitated Ni-Al catalyst  
*Applied Catalysis B: Environmental* **282** (2021) 119408.  
doi: 10.1016/j.apcatb.2020.119408
138. J. von Seckendorff, P. Scheck, M. Tonigold, R. Fischer, O. Hinrichsen  
Numerical Shape Development Study in View of Random Packed Beds - The Yo-Yo Shape  
*Chemical Engineering Journal* **404** (2021) 126468.  
doi: 10.1016/j.cej.2020.126468
139. J. von Seckendorff, K. Achterhold, F. Pfeiffer, R. Fischer, O. Hinrichsen



- Experimental and numerical analysis of void structure in random packed beds of spheres  
*Powder Technology* **380** (2021) 613-628.  
doi: 10.1016/j.powtec.2020.11.026
140. J. Fernengel, O. Hinrichsen  
Influence of Material Properties on Voidage of Numerically Generated Random Packed Beds  
*Chemical Engineering Science* **233** (2021) 116406.  
doi: 10.1016/j.ces.2020.116406
141. J. von Seckendorff, O. Hinrichsen  
The Structure of Randomness: A Review on Random Packed beds  
*Canadian Journal of Chemical Engineering* **99** (2021) S703-733.  
doi: 10.1002/cjce.23959
142. J. Bachmann, E. Gleis, S. Schmözl, G. Fruhmann, O. Hinrichsen  
Photo-DSC method for liquid samples used in digital light synthesis (DLS)  
*Analytical Chimica Acta Journal* **1153** (2021) 338268.  
doi: 10.1016/j.aca.2021.338268
143. J. Fernengel, R. Weber, N. Szesni, R. Fischer, O. Hinrichsen  
Numerical Simulation of Pellet Shrinkage in Random Packed Beds  
*Industrial Chemistry & Engineering Research* **60** (2021) 6863-6867.  
doi: 10.1021/acs.iecr.0c05307
144. K.-M. Vetter, C. Aring da Silva, R. Mauro, D. Reinisch, T. Reichbauer, N. Martić, C. Jandl, O. Hinrichsen, G. Schmid  
Stability evaluation of earth-abundant metal based polyoxometalate electrocatalysts for oxygen evolution reaction towards industrial application in PEM electrolysis at high current densities  
*Electrochemical Science Advances* (2021) e202100073  
doi: 10.1002/elsa.202100073
145. J. Bachmann, P. Obst, L. Knorr, S. Schmölder, G. Fruhmann, G. Witt, T. Osswald, K. Wudy, O. Hinrichsen  
Cavity vat photopolymerisation of polymer-composite 3D objects  
*Communications Materials* **2:107** (2021) 1-9.  
doi: 10.1038/s43246-021-00211-5
146. S. Hölle, S. Scharner, S. Asanin, O. Hinrichsen  
Analysis on Thermal Runaway Behavior of Prismatic Lithium-Ion Batteries with Autoclave Calorimetry  
*Journal of The Electrochemical Society* **168** (2021) 120515.  
doi: 10.1149/1945-7111/ac3c27
147. K.-M. Vetter, J. Härtl, D. Reinisch, T. Reichbauer, N. Martić, K.-O. Hinrichsen, G. Schmid  
K<sup>+</sup> Transport in Perfluorosulfonic Acid Membranes and Its Influence on Membrane Resistance in CO<sub>2</sub> Electrolysis  
*ChemElectroChem* (2021) e202101165

doi: 10.1002/celc.202101165

148. R. Walter, J. Neumann, O. Hinrichsen  
Modeling the catalytic performance of coated Gasoline Particulate Filters under various operating conditions  
*Industrial & Engineering Chemistry Research* **60** (2021) 16993-17005.  
doi: 10.1021/acs.iecr.1c03631
  
149. H.M. Bui, R. Fischer, N. Szesni, M. Tonigold, K. Achterhold, F. Pfeiffer, O. Hinrichsen  
Development of a Manufacturing Process for Binder Jet 3D Printed Porous Al<sub>2</sub>O<sub>3</sub> Supports Used in Heterogeneous Catalysis  
*Additive Manufacturing* **50** (2022) 102498.  
doi: 10.1016/j.addma.2021.102498
  
150. J. Bachmann, S. Schmölder, M.A. Ruderer, G. Fruhmann, O. Hinrichsen  
Photo-DSC parameter study of photopolymers used in digital light synthesis (DLS).  
*SPE Polymers* **3** (2022) 41-53.  
doi: 10.1002/pls2.10063
  
151. M. Feigel, O. Hinrichsen  
Modelling of Process Operation Principles for the Immobilized Enzyme Candida Antarctica under Activity Decay  
*Chemie Ingenieur Technik* **94** (2022) 652-662.  
doi: 10.1002/cite.202100187
  
152. R. Walter, J. Neumann, O. Hinrichsen  
A Model-Based Analysis of Washcoat Distribution on Zoned Coated Gasoline Particulate Filters  
*Chemical Engineering Journal* **441** (2022) 135615.  
doi: 10.1016/j.cej.2022.135615
  
153. S. Hölle, S. Scharner, S. Asanin, O. Hinrichsen  
Analysis Experimental Investigation on Thermal Runaway Propagation in Lithium-Ion Battery Cell Stack  
*2022 IEEE Transportation Electrification Conference & Expo (ITEC)* (2022) 9812813.  
doi: 10.1109/itec53557.2022.9813813
  
154. R. Walter, J. Neumann, A. Velroyen, O. Hinrichsen  
Applying 3D X-Ray Microscopy to model coated Gasoline Particulate Filters under practical driving conditions  
*Environmental Science & Technology* **56** (2022) 12014-12023.  
doi: 10.1021/acs.est.2c01244
  
155. H.M. Bui, P.F. Grossmann, T. Gros, M. Blum, A. Berger, R. Fischer, N. Szesni, M. Tonigold, O. Hinrichsen  
3D printed co-precipitated Ni-Al CO<sub>2</sub> methanation catalysts by Binder Jetting: Fabrication, characterization and test in a single pellet string reactor  
*Applied Catalysis A, General* **643** (2022) 118760.

doi: 10.1016/j.apcata.2022.118760

156. B. Sahin, J. Leung, E. Magori, S. Laumen, A. Tawil, E. Simon, O. Hinrichsen  
Controlling product distribution of CO<sub>2</sub> reduction on CuO-based gas diffusion electrodes by manipulating back pressure  
*Energy Technology* **10** (2022) 20220972.  
doi: 10.1002/ente.20220972
  
157. H.M. Bui, P.F. Großmann, A. Berger, A. Seidel, R. Fischer, N. Szesni, M. Toni-gold, R. Fischer, B. Rieger, O. Hinrichsen  
Comparison of Direct Ink Writing and Binder Jetting for Additive Manufacturing of Pt/Al<sub>2</sub>O<sub>3</sub> Catalysts for the Dehydrogenation of Perhydro-dibenzyltoluene  
*Chemical Engineering Journal* **10** (2023) 141361.  
doi: 10.1016/j.cej.2023.141361
  
158. S. Hölle, F. Dengler, S. Zimmermann, O. Hinrichsen  
3D Thermal Simulation of Lithium-Ion Battery Thermal Runaway in Autoclave Calorimetry - Development and Comparison of Modeling Approaches  
*Journal of The Electrochemical Society* **170** (2023) 010509..  
doi: 10.1149/1945-7111/acac06
  
159. J. Breitsameter, N. Reinhardt, M. Feigel, O. Hinrichsen, K. Drechsler, B. Rieger  
Synthesis of a sustainable and Bisphenol A-free epoxy resin based on sorbic acid and characterization of the cured thermoset  
*Macromolecular Materials and Engineering* (2023) 2300068.  
doi: 10.1002/mame.202300068
  
160. S. Hölle, S. Zimmermann, O. Hinrichsen  
3D Thermal Simulation of Thermal Runaway Propagation in Lithium-Ion Battery Cell Stack - Comparison of Modeling Approaches  
*Journal of The Electrochemical Society* **170** (2023) 060516.  
doi: 10.1149/1945-7111/acd966
  
161. H.M. Bui, T. Kratky, I. Lee, R. Khare, M. Hiller, S. Wedig, S. Günther, O. Hinrichsen  
In situ impregnated Ni/Al<sub>2</sub>O<sub>3</sub> catalysts prepared by binder jet 3D printing using nickel nitrate-containing ink  
*Catalysis Communications* **182** (2023) 106783.  
doi: 10.1016/j.catcom.2023.106738
  
162. M. Feigel, J. Breitsameter, K. Lechner, B. Rieger, O. Hinrichsen  
Kinetic Modelling of the Synthesis Path for the Production of a Sustainable Epoxy Resin based on Allyl Sorbate  
*Industrial & Engineering Chemistry Research* **62** (2023) 13389-13400.  
doi: 10.1021/acs.iecr.3c01317
  
163. B. Sahin, S.K. Raymond, F. Ntourmas, R. Pastusiak, K. Wiesner-Fleischer, M. Fleischer, E. Simon, O. Hinrichsen  
Accumulation of liquid by-products in an electrolyte as critical factor that compromises long-term functionality of CO<sub>2</sub> to C<sub>2</sub>H<sub>4</sub> electrolysis  
*ACS Applied Materials & Interfaces* **15** (2023) 45844-45854.

doi: 10.1021/acsami/3c08454

164. M. Feigel, J. Breitsameter, B. Rieger, O. Hinrichsen  
Bridging the Gap from Laboratory to Production: Kinetic Modelling-Guided Process Development for a Novel Epoxy Resin  
*Industrial & Engineering Chemistry Research* **63** (2024) 1271-1285.  
doi: 10.1021/acs.iecr.3c03339
165. A.S Ambekar, E.A.J.F. Peters, O. Hinrichsen, V.V. Buwa, J.A.M. Kuipers  
Understanding the role of perforations on the local hydrodynamics of gas-liquid flows through structured packings  
*Chemical Engineering Journal* **186** (2024) 150084.  
doi: 10.1016/j.cej.2024.150084
166. V.V. Khanpit, V.S. Vishwanathan, O. Hinrichsen  
Environmental impact of Animal milk vs Plant-based milk: Critical review  
*Journal of Cleaner Production* **449** (2024) 141703.  
doi: 10.1016/j.jclepro.2024.141703
167. B. Sahin, M. Kraehling, V. Facci Allegrini, J.J. Leung, K. Wiesner-Fleischer, E. Magori, R. Pastusiak, A. Tawil, T. Hodges, E. Brooke, E.C. Corbos, M. Fleischer, E. Simon, O. Hinrichsen  
Fine-tuned Combination of Cell and Electrode Designs Unlocks Month-long Stable Low Temperature Cu-based CO<sub>2</sub>  
*Journal of CO<sub>2</sub> Utilization* **82** (2024) 102766.  
doi: 10.1016/j.jcou.2024.102766
168. A. Greve, H. Stein, T. Osterland, O. Hinrichsen  
SPEEK-based temperature-resistant catalyst for etherification and esterification reactions  
*Applied Catalysis O: Open* **190** (2024) 206951.  
doi: 10.1016/j.apcato.2024.206951
169. S. Wilmes, O. Hinrichsen  
Influencing factors on the wet impregnation of additive manufactured catalyst support structures  
*Chemie Ingenieur Technik* **96** (2024) 1668-1675.  
doi: 10.1002/cite.202400090

## Books

1. O. Hinrichsen  
Die mikrokinetische Modellierung der Ammoniaksynthese mit Ruthenium-Katalysatoren  
Fortschr.-Ber. VDI-Reihe 3, Nr.486, Düsseldorf: VDI-Verlag 1997.
2. M. Baerns, A. Behr, A. Brehm, J. Gmehling, O. Hinrichsen, H. Hofmann, M. Kleiber, N. Kockmann, U. Onken, R. Palkovits, A. Renken, D. Vogt  
Technische Chemie, 3. Auflage, Wiley-VCH, 2023

## Contributions in books and monographs

1. O. Hinrichsen, A.C. van Veen, H.W. Zanthoff, M. Muhler  
TAP Reactor Studies  
*in: In-Situ Spectroscopy in Heterogeneous Catalysis* (Hrsg. J.F. Haw), Wiley-VCH, Weinheim 2002, 237-269.
2. O. Hinrichsen  
Catalysis from A to Z: A Concise Encyclopedia (Hrsg. Herrmann, Cornils, Wong, Schlögl)  
desorption, Hertz Knudsen formula, Polanyi-Wigner equation, temperature-programmed reaction spectroscopy, Tanaka-Tamaru plot  
1. Auflage, Wiley-VCH, Weinheim 2000.  
Beiträge zu: elementary step kinetics, global kinetics, macrokinetics, microkinetics  
2. Auflage, Wiley-VCH, Weinheim 2003.  
Brönsted-Evans-Polanyi (BEP) relation, Frumkin isotherm, membrane catalysis, model discrimination, modeling of catalytic reactor, multiphase catalytic reactors, transient kinetics, transient response  
3. Auflage (Hrsg. Herrmann, Cornils, Wong, Muhler), Wiley-VCH, Weinheim 2007.
3. S. Reßler, M.P. Elsner, C. Dittrich, D.W. Agar, S. Geisler, O. Hinrichsen: Reactive Gas Adsorption *in* Process Intensification by Integrated Reaction and Separation Operations (H. Schmidt-Traub und A. Górak (Hrsg.)), Springer-Verlag, Berlin, 2006
4. M. Muhler und O. Hinrichsen  
Water Gas Shift  
*in: Handbook of Heterogeneous Catalysis* (Hrsg. G. Ertl, H. Knözinger, F. Schüth und J. Weitkamp), 2. Auflage, Wiley-VCH, Weinheim 2008.
5. O. Hinrichsen  
Transient Catalytic Studies  
*in: Handbook of Heterogeneous Catalysis* (Hrsg. G. Ertl, H. Knözinger, F. Schüth und J. Weitkamp), 2. Auflage, Wiley-VCH, Weinheim 2008.
6. M. Fleischer, P. Jeanty, K. Wiesner-Fleischer, O. Hinrichsen  
Industrial Approach for Direct Electrochemical CO<sub>2</sub> Reduction in Aqueous Electrolytes  
*in: Zukünftige Kraftstoffe* (Hrsg. W. Maus), 1. Auflage, Springer Vieweg, Berlin 2019.