

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 N₂ 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 N₂
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 N₂O und H₂ for Cu Surface Area Determination
Chem. Eng. Technol. **23** (2000) 956-959.
Die Chemisorption von N₂O und H₂ 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: 4th 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 V₂O₅/TiO₂ Catalysts (Eurocat)
in: 4th 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 V₂O₅/TiO₂ 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/Al₂O₃ 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 H₂
Angew. Chem. **117** (2005) 2850-2854.
Active Sites on Oxide Surfaces: Zinc Oxide Catalyzed Methanol Synthesis from CO and H₂
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/Al₂O₃ 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/Al₂O₃ 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
Miomixing 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/Al₂O₃ 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 CO₂
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. Donaubauer, 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/Al₂O₃ 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/Al₂O₃
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/SiO₂ 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 CO₂ in water-based electrolytes KHCO₃ and K₂SO₄ 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 CO₂ to CO conversion in aqueous solutions on silver gas diffusion electrodes
Journal of CO₂ 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 Al₂O₃-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
CO₂ methanation over promoted Ni/Al(O)_x 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 CO₂ methanation
Journal of CO₂ 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 CO₂ 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 CO₂ 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
CO₂ vs. CO 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 CO₂
Journal of CO₂ Utilization **32** (2019) 80-91.
doi: 10.1016/j.jcou.2019.03.003
118. S. Ewald, O. Hinrichsen
On the interaction of CO₂ 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 CO₂ towards multi-carbon products at high current densities
Journal of CO₂ 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. Donaubaueer, D. Melzer, K. Wanniger, G. Mestl, M. Sanchez-Sanchez, J.A. Lercher, O. Hinrichsen
Intrinsic Kinetic Model for Oxidative Dehydrogenation of Ethane over MoVTeNb 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 CO₂ 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_x promoted by Mn, Fe, Co, Cu and Zn for the methanation of CO₂ based on an ex situ poisoning approach
Journal of CO₂ 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 CO₂
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 CO₂ 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 X-Ray Tomography Analysis on 3D Structure of Packed Beds
Consisting of Smooth, Homo-Sized 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. Schmölz, 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 electrocata-
lysts for oxygen evolution reaction towards industrial application in PEM elec-
trolysis at high current densities
Electrochemical Science Advances (2021) e202100073
doi: 10.1002/elsa.202100073
145. J. Bachmann, P. Obst, L. Knorr, S. Schmölz, G. Fruhmann, G. Witt, T. Oss-
wald, 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⁺ Transport in Perfluorosulfonic Acid Membranes and Its Influence on Mem-
brane Resistance in CO₂ Electrolysis

ChemElectroChem (2021) e202101165
doi: 10.1002/celec.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 Al₂O₃ Supports Used in Heterogeneous Catalysis
Additive Manufacturing **50** (2022) 102498.
doi: 10.1016/j.addma.2021.102498

150. J. Bachmann, S. Schmölzer, 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 CO₂ 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 CO₂ 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/Al₂O₃ 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. Hin-
richsen
In situ impregnated Ni/Al₂O₃ 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. Kimberley Raymond, F. Ntourmas, R. Pastusiak, K. Wiesner-Fleischer, M. Fleischer, E. Simon, O. Hinrichsen
Accumulation of liquid by-products in electrolyte as critical factor that compro-mises long-term functionality of CO₂ to C₂H₄ electrolysis

ACS Applied Materials & Interfaces (2023)
doi: 10.1021/acsami.3c08454

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 CO₂ Reduction in Aqueous Electrolytes
in: Zukünftige Kraftstoffe (Hrsg. W. Maus), 1. Auflage, Springer Vieweg, Berlin 2019.