

List of Publications

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- 1 Verhalten von Festbettreaktoren bei periodischen Gasdurchsatz- und Totaldruckschwankungen, A. Baiker and W. Richarz, *Chem. Ing. Tech.* **48**, 1203-1203 (1976).
- 2 Instationäre Betriebsart in der heterogenen Katalyse, A. Baiker and W. Richarz, *Chimia*, **30**, 502-508 (1976).
- 3 Vergleich von Messmethoden zur Bestimmung der Porenradienverteilung und spezifischen Oberfläche poröser Katalysatoren, A. Baiker and W. Richarz, *Chem. Ing. Tech.* **49**, 399-403 (1977).
- 4 Synthesis of Long Chain Aliphatic Amines from the Corresponding Alcohols, A. Baiker and W. Richarz, *Tetrahedron Lett.*, **22**, 1937-1938 (1977).
- 5 Some Aspects of Catalytic Amination of Fatty Alcohols, A. Baiker and W. Richarz, *Proc. 5th Can. Symp. Catal., Chem. Inst. Can.*, 1977, pp. 289-300.
- 6 Catalytic Amination of Long Chain Aliphatic Alcohols, A. Baiker and W. Richarz, *Ind. Eng. Chem. Prod. Res. Dev.*, **16**, 261-266 (1977).
- 7 Catalytic C(1), C(2)-Bond Cleavage of Long Chain Aliphatic Alcohols and Omega-Phenylalkyl Alcohols, A. Baiker and W. Richarz, *Helv. Chim. Acta*, **60**, 2958-2963 (1977).
- 8 Analysis of CO, CO₂, COCl₂, HCl and Cl₂ Gas Mixtures, A. Baiker, H. Geisser and W. Richarz, *J. Chromatogr.* **147**, 453-455 (1978).
- 9 Synthesis of Omega-Phenylalkyl Methyl Amines from the Corresponding Alcohols, A. Baiker and W. Richarz, *Synth. Commun.* **8**, 27-32 (1978).
- 10 Activity, Selectivity and Decay of Amination Catalysts, A. Baiker and W. Richarz, *Helv. Chim. Acta*, **61**, 1169-1174 (1978).
- 11 Diffusion and Surface Reaction in Heterogeneous Catalysis, A. Baiker and W. Richarz, *Chem. Eng. Educ.*, **2**, 112-119 (1978).
- 12 Anwendung des Wirbelschichtreaktors zur Chlorierung von Tonerde, H.P. Müller, A. Baiker, H.P. Alder and W. Richarz, *Chem. Ing. Tech.* **51**, 124-127 (1979).
- 13 Thermogravimetrische Untersuchung der reduzierenden Chlorierung von Tonerde, H.P. Müller, A. Baiker and W. Richarz, *Helv. Chim. Acta*, **62**, 76-85 (1979).
- 14 Kinetics of Ethylene Oxidation on a Supported Silver Catalyst, H.R. Dettwiler, A. Baiker and W. Richarz, *Helv. Chim. Acta*, **62**, 1689-1700 (1979).
- 15 Dynamisches Verhalten eines Festbettreaktors im Bereich instabiler Betriebszustände, R. Casanova, A. Baiker and W. Richarz, *Chem. Ing. Tech.* **51**, 978-979 (1979).

- 16 The Chlorination of Alumina - A Comparison of the Kinetics with Different Reduction Agents, H. P. Alder, H. Geisser, A. Baiker and W. Richarz, *Light Met.* (New York), 337 (1979).
- 17 Diffusionszelle zur Bestimmung effektiver Diffusionskoeffizienten, M. New, A. Baiker and W. Richarz, *Chem. Ing. Tech.* **51**, 972-974 (1979).
- 18 Transient Behaviour of an Adiabatic Fixed-Bed Catalytic Reactor in the Range of Multiple Steady-States, A. Baiker, R. Casanova and W. Richarz, *Ger. Chem. Eng.* **3**, 112-116 (1980).
- 19 Kinetische Interpretation der Struktursensitivität der Ammoniaksynthese, A. Baiker, *Habilitationsschrift*, ETH-Zürich, 1980.
- 20 Determination of Interparticular Gas Diffusion Coefficients in Catalyst Pellets, A. Baiker, M. New and W. Richarz, *Proc. 7th Can. Symp. Catal., Chem. Inst. Can.*, 1980, pp. 289 - 300.
- 21 On the Problem of Catalyst Deactivation in Amination Processes, A. Baiker and W. Richarz, *Stud. Surf. Sci. Catal. (Pt. B, New Horiz. Catal.)*, **7**, 1428-1429 (1981).
- 22 Order-Disorder Transformation of Graphite Aluminum Chloride Intercalation Compound, A. Baiker, E. Habegger, V.K. Sharma and W. Richarz, *Carbon*, **19**, 327-329 (1981).
- 23 Equilibrium Conditions and Kinetics of the Intercalation of AlCl_3 and FeCl_3 with Graphite, A. Feichtinger, A. Baiker and W. Richarz, *Proc. 15th Bienn. Conf. Carbon*, 1981, pp. 375 - 377.
- 24 Experimentelle Methoden der Katalysatorcharakterisierung. I. Gasadsorptionsmethoden, Pyknometrie und Porosimetrie, A. Baiker, *Chimia*, **35**, 408-419 (1981).
- 25 Catalytic Amination of Aliphatic Alcohols: The Role of Hydrogen as Inhibitor for Catalyst Deactivation, A. Baiker, *Ind. Eng. Chem. Prod. Res. Dev.* **20**, 615-618 (1981).
- 26 Experimentelle Methoden der Katalysatorcharakterisierung. II. Röntgendiffraktion, Temperaturprogrammierte Desorption und Reduktion, Thermogravimetrie und Differentialthermoanalyse, A. Baiker, *Chimia*, **35**, 440-446 (1981).
- 27 Experimentelle Methoden der Katalysatorcharakterisierung. III. Elektronenmikroskopie, Elektronenstrahl-Mikroanalyse, Auger-elektronen-Spektroskopie, Photoelektronen-Spektroskopie und Sekundärionen-Massenspektroskopie, A. Baiker, *Chimia*, **35**, 485-492 (1981).
- 28 Superparamagnetic Effects in the Ferrromagnetic Resonance of Silica Supported Nickel Particles, V.K. Sharma and A. Baiker, *J. Chem. Phys.*, **75**, 5596-5601 (1981).

- 29 Determination of Intraparticle Diffusion Coefficients in Catalysts: A Comparative Study of Measuring Methods, A. Baiker, M. New and W. Richarz, *Chem. Eng. Sci.*, **37**, 643-656 (1982).
- 30 Determination of Macropore Diffusion in Molecular Sieve Particles by Pulse Gas Chromatography, A. Baiker and M. New, *J. Chromatogr.*, **3**, 13-28 (1982).
- 31 Surface Nitride Formation of Metal Catalysts Studied by Temperature Programmed Desorption, A. Baiker and D. Monti, *Proc. 8th Can. Symp. Catal., Chem. Inst. Can.*, 1982, pp. 20-27.
- 32 Simultaneous Uncorrelated Changes of Process Variables in a Fixed-Bed Reactor, A. Baiker, M. Bergougnan and W. Richarz, *ACS Symp. Ser.*, **196**, 15-27 (1982).
- 33 On the Reliability of the Gas Chromatographic Method for the Determination of Diffusion Constants, A. Baiker and M. New, *Proc. 8th Can. Symp. Catal., Chem. Inst. Can.*, 1982, pp. 70-77.
- 34 Contact Angle of Mercury against Catalyst Materials for Use in Intrusion Porosimetry, A. Baiker and A. Reithaar, *Ind. Eng. Chem. Prod. Res. Dev.*, **21**, 590-591 (1982).
- 35 Impregnation of Alumina with Copper Chloride: Equilibrium Behaviour, Impregnation Profiles and Immobilization Kinetics, by R.J. Ott and A. Baiker, *Stud. Surf. Sci. Catal.*, **16** (Prep. Catal. 3), 685-696 (1983).
- 36 Catalytic Amination of Aliphatic Alcohols in the Gas and Liquid Phases, Kinetics and Reaction Pathway. A. Baiker, W. Caprez and W.L. Holstein, *Ind. Eng. Chem. Prod. Res. Dev.*, **22**, 217-225 (1983).
- 37 Temperature Programmed Reduction: Parametric Sensitivity and Estimation of Kinetic Parameters, D. Monti and A. Baiker, *J. Catal.*, **83**, 323-335 (1983).
- 38 Interaction of Ammonia with Metallic Copper, Nickel and Cobalt Studied by Temperature Programmed Desorption, A. Baiker and D. Monti, *Ber. Bunsenges. Phys. Chem.*, **87**, 602-605 (1983).
- 39 Impregnation of Alumina with Copper Chloride. Modeling of Impregnation Kinetics and Internal Copper Profiles, A. Baiker and W.L. Holstein, *J. Catal.*, **84**, 178-188 (1983).
- 40 Deactivation of Copper, Nickel and Cobalt Catalysts by Interaction with Aliphatic Amines, A. Baiker, D. Monti and Yuan Son Fan, *J. Catal.*, **88**, 81-88 (1984).
- 41 Formation and Thermal Stability of Copper and Nickel Nitrides, A. Baiker and M. Maciejewski, *J. Chem. Soc., Faraday Trans. I*, **80**, 2331-2341 (1984).
- 42 Enhanced Raman Scattering: Preparation of Copper Substrates for Catalytic Studies, S.K. Miller, A. Baiker, M. Meier and A. Wokaun, *J. Chem. Soc., Faraday Trans. I*, **80**, 1305-1312 (1984).

- 43 Structural Dynamics of Vanadium Oxide Catalyst in the Oxidative Ammonolysis of 3-Picoline, A. Baiker and P. Zollinger, *Proc. 8th Int. Congr. Catal.*, Vol. **5**, , Verlag Chemie, 1984, pp. 463 -475.
- 44 Ammonoxidation of Alkylpyridines on Vanadium Oxides with and without Oxygen, A. Baiker and P. Zollinger, *Appl. Catal.*, **10**, 231-249 (1984).
- 45 Copper Catalyzed Disproportionation of Benzylamine Methyl Derivatives, J. Kijenski, J. Burger and A. Baiker, *Appl. Catal.*, **11**, 295-304 (1984).
- 46 Modellieren eines Festbettreaktors mit ausgeprägten radialen Temperaturprofilen mit eindimensionalem, pseudohomogenem Modell, D. Epple and A. Baiker, *Chem. Ing. Tech.*, **56**, 796-797, (1984).
- 47 Investigation of a Fixed-Bed Pilot Plant Reactor by Dynamic Experimentation. - I. Apparatus and Experimental Results, A. Baiker and M. Bergougnan, *Can. J. Chem. Eng.*, **63**, 138-145 (1985).
- 48 Investigation of a Fixed-Bed Pilot Plant Reactor by Dynamic Experimentation. - II. Simulation of Reactor Behaviour, A. Baiker and M. Bergougnan, *Can. J. Chem. Eng.*, **63**, 146-154 (1985).
- 49 Experimental Methods for Catalyst Characterization. - I. Gas Adsorption Methods, Pycnometry and Porosimetry, A. Baiker, *Int. Chem. Eng.*, **25**, 16-29 (1985).
- 50 Experimental Methods for Catalyst Characterization. - II. X-Ray Diffraction, Temperature Programmed Desorption and Reduction, Thermogravimetry and Differential Thermoanalysis, A. Baiker, *Int. Chem. Eng.*, **25**, 30-37 (1985).
- 51 Experimental Methods for Catalyst Characterization. - III. Electron Microscopy, Electron Probe Microanalysis, Auger Electron Spectroscopy, Photoelectron Spectroscopy and Secondary-Ion Mass Spectroscopy, by A. Baiker, *Int. Chem. Eng.*, **25**, 38-42 (1985).
- 52 Intercalation of Graphite by Aluminum Chloride. Influence of Graphite Properties on Intercalation Rate, A. Baiker, E. Habegger and R. Schlögl, *Ber. Bunsenges. Phys. Chem.* **89**, 530-538 (1985).
- 53 Methanol Oxidation on K_2SO_4 -Promoted Vanadium Pentoxide. Activity, Reducibility, and Structure of Catalyst, D. Monti, A. Baiker and A. Reller, *J. Catal.*, **93**, 360-367 (1985).
- 54 Adsorption on Catalyst Surfaces Studied by Enhanced Raman Scattering, A. Wokaun, A. Baiker, S.K. Miller and W. Fluhr, *J. Phys. Chem.*, **89**, 1910-1914 (1985).
- 55 Influence of the Grain Morphology of V_2O_5 on its Reducibility and Selectivity for Methanol Oxidation, A. Baiker and D. Monti, *J. Catal.*, **91**, 361-365 (1985).

- 56 Structure Sensitivity of Carbon Monoxide Oxidation on Vanadium Pentoxide, A. Baiker, P. Dollenmeier and He Renjin, *J. Chem Soc., Chem. Commun.*, 413-414 (1985).
- 57 Catalytic Synthesis of Higher Aliphatic Amines from the Corresponding Alcohols, A. Baiker and J. Kijenski, *Catal. Rev. Sci. & Eng.*, **27**, 653-697 (1985).
- 58 Ferromagnetic Resonance Study of Reduced NiCl_2 - Graphite Intercalation Compounds, V.K. Sharma and A. Baiker, *Synth. Metals*, **11**, 1-8 (1985).
- 59 Influence of the Grain Morphology of V_2O_5 on its Reduction - Reoxidation Behaviour, M. Maciejewski, A. Reller and A. Baiker, *Thermochim. Acta*, **96**, 81-90 (1985).
- 60 Hydrogenation of CO on Amorphous $\text{Fe}_{81}\text{B}_{13.5}\text{Si}_{3.5}\text{C}_2$: Activity, and Segregational Behaviour of Alloy, M. Peuckert and A. Baiker, *J. Chem. Soc., Faraday Trans. I.*, **81**, 2797-2803 (1985).
- 61 Raman Characterization of Catalysts, A. Wokaun, A. Baiker, W. Fluhr, M. Meier and S.K. Miller, *J. Vac. Sci. Technol. B*, **3**, 1397-1403 (1985).
- 62 Copper Catalyzed Amination of Ethylene Glycole, J. Runeberg, A. Baiker and J. Kijenski, *Appl. Catal.*, **17**, 309-319 (1985).
- 63 Carbon Monoxide Oxidation on Vanadium Pentoxides of Different Grain Morphology - Structure Sensitivity of Reaction, A. Baiker, P. Dollenmeier, R. He and A. Wokaun, *J. Catal.*, **100**, 345-352 (1986).
- 64 Simple Method for the Modelling of a Non-Isothermal Non-Adiabatic Fixed-Bed Catalytic Reactor, A. Baiker and D. Epple, *Appl. Catal.*, **22**, 55-69 (1986).
- 65 Analysis of Reaction Networks Based on Common Intermediates, A. Baiker, W.L. Holstein and A. Wokaun, *Chimia*, **40**, 261-269 (1986).
- 66 Monolayers and Double Layers of Vanadium Pentoxide on Different Carriers: Preparation, Characterization and Catalytic Activities, J. Kijenski, A. Baiker, M. Glinski, P. Dollenmeier and A. Wokaun, *J. Catal.*, **101**, 1-11 (1986).
- 67 Copper Catalyzed Synthesis of Cyclic Amines from Amino-Alcohols, W. Hammerschmidt, A. Baiker, A. Wokaun and W. Fluhr, *Appl. Catal.*, **20**, 305-312 (1986).
- 68 Behaviour of a Pilot Plant Fixed-Bed Reactor During Catalyst Deactivation, A. Baiker, D. Epple and A. Wokaun, *Chem. Eng. Sci.*, **41**, 779-786 (1986).
- 69 ESR Characterization of V_2O_5 Monolayers and Double Layers Supported on Various Carriers, V.K. Sharma, A. Wokaun and A. Baiker, *J. Phys. Chem.*, **90**, 2715-2718 (1986).

- 70 Ammonia Synthesis over Novel Catalyst Prepared from an Amorphous $\text{Fe}_{91}\text{Zr}_9$ Precursor, E. Armbruster, A. Baiker, H. Baris, H.J. Güntherodt and R. Schlögl, *J. Chem. Soc., Chem. Commun.*, 299-301 (1986).
- 71 Potential of Surface Enhanced Raman Scattering for Catalysis Research, A. Wokaun and A. Baiker, *Chimia*, **40**, 2-11 (1986).
- 72 Impregnation of Alumina with Copper Chloride: Evidence for Differently Immobilized Copper Species, A. Baiker, D. Monti and A. Wokaun, *Appl. Catal.*, **23**, 425-436 (1986).
- 73 Novel Hydrogenation Catalyst Prepared from an Amorphous $\text{Cu}_{70}\text{Zr}_{30}$ Precursor, A. Baiker, H. Baris and H.J. Güntherodt, *J. Chem. Soc., Chem. Commun.*, 930-932 (1986).
- 74 Structural Modification of Amorphous Copper-Zirconium Alloys and their Catalytic Activity, A. Baiker, H. Baris and H.J. Güntherodt, *Appl. Catal.*, **22**, 389-393 (1986).
- 75 Potassium Promotion of Supported V_2O_5 Catalysts, A. Baiker, M. Glinski, J. Kijenski, V.K. Sharma and A. Wokaun, *J. Phys. Chem.*, **90**, 4217-4218 (1986).
- 76 Influence of the Grain Morphology of Molybdenum Trioxide on its Catalytic Properties: Oxidation of Methanol to Formaldehyde, A. Baiker and D. Gasser, *Z. Phys. Chem. (neue Folge)*, **149**, 119-124 (1986).
- 77 Ammonia Synthesis over Alumina and Magnesia Supported Ruthenium. Comparative Kinetic Study of the Promotive Action of Metallic and Ionic Potassium, H. Baris, M. Glinski, J. Kijenski, A. Wokaun and A. Baiker, *Appl. Catal.*, **28**, 295-301 (1986).
- 78 Amorphous Metal Alloys as Precursors in Catalyst Preparation: Ammonia Synthesis Catalysts From Amorphous Nickel-Zirconium Systems, by E. Armbruster, A. Baiker, H.J. Güntherodt, R. Schlögl and B. Walz, *Stud. Surf. Sci. Catal.*, **31** (Prep. Catal. 4), 389 (1987).
- 79 Copper Catalyzed Amination of 1,6-Hexanediol, R. Vultier, A. Baiker and A. Wokaun, *Appl. Catal.*, **30**, 167-176 (1987).
- 80 Ammonia Synthesis over Supported Iron Catalyst Prepared from Amorphous Iron-Zirconium Precursor. - I. Bulk and Surface Chemical Changes of Precursor During its Transition to the Active Catalyst, A. Baiker, R. Schlögl, E. Armbruster and H.J. Güntherodt, *J. Catal.*, **107**, 221-231 (1987).
- 81 Ammonia Synthesis over Supported Iron Catalyst Prepared from Amorphous Iron-Zirconium Precursor. - II. Surface Morphological Changes During Genesis of Catalyst, R. Schlögl, R. Wiesendanger and A. Baiker, *J. Catal.*, **108**, 452-466 (1987).
- 82 Ammonia Synthesis over Supported Iron Catalyst Prepared from Amorphous Iron-Zirconium Precursor. - III. Mechanism of Nitrogen Adsorption and Ammonia Synthesis Kinetics, A. Baiker, H. Baris and R. Schlögl, *J. Catal.*, **108**, 467-479 (1987).

- 83 Influence of the Grain Morphology of Molybdenum Trioxide on its Catalytic Properties: Reduction of Nitric Oxide with Ammonia, A. Baiker, P. Dollenmeier and A. Reller, *J. Catal.*, **103**, 394-398 (1987).
- 84 Selective Catalytic Reduction of Nitric Oxide with Ammonia. Part 1: Monolayer and Multilayers of Vanadia Supported on Titania, A. Baiker, P. Dollenmeier, M. Glinski and A. Reller, *Appl. Catal.*, **35**, 351-364 (1987).
- 85 Selective Catalytic Reduction of Nitric Oxide with Ammonia. Part 2: Vanadia Layers Immobilized on Mixed Gels of Silica and Titania, A. Baiker, P. Dollenmeier, M. Glinski and A. Reller, *Appl. Catal.*, **35**, 365-380 (1987).
- 86 Effect of Oxygen and Hydrogen on the Surface Segregation of Amorphous and Crystalline Zirconium Alloys, F. Vanini, S. Büchler, Xin-nan Yu, M. Erbudak, L. Schlapbach and A. Baiker, *Surf. Sci.*, **189/190**, 1117-1121 (1987).
- 87 Highly Active Catalyst for the Oxidation of Carbon Monoxide Prepared from Amorphous Palladium-Zirconium Alloy, A. Baiker, D. Gasser and J. Lenzner, *J. Chem. Soc., Chem. Commun.*, 1750-1751 (1987).
- 88 Mixed Gels of Vanadia and Silica: Structural Properties and Catalytic Behavior in Reduction of Nitric Oxide with Ammonia, A. Baiker, P. Dollenmeier, M. Glinski, A. Reller and V.K. Sharma, *J. Catal.*, **111**, 273-285 (1988).
- 89 Structural and Catalytic Properties of Hydrogenation Catalyst Prepared from Amorphous Copper-Zirconium Alloy, by A. Baiker, H. Baris, F. Vanini and M. Erbudak, *Proc. 9th Int. Cong. Catal.*, (*Catalysis: Theory and Practice*), Vol. **4**, Chem. Inst. Can., 1988, pp. 1928-1935.
- 90 Catalytic Properties of Supported Rhenium Catalysts Prepared From $H_3Re_3(CO)_{12}$ Precursors, M. Garland and A. Baiker, *J. Mol. Catal.*, **45**, 345-353 (1988).
- 91 Auger Electron Spectroscopy of Amorphous Copper-Zirconium Activated for Catalysis, F. Vanini, M. Erbudak, G. Kostorz and A. Baiker, *Proc. Mat Res. Soc. Symp.*, Vol. **111**, (*Microstructure of Materials and Properties of Catalysts*), M.M.J. Treacy, J.M. Thomas and J.M. White (Eds.), Materials Research Society, 1988, pp. 375-378.
- 92 Methanol Oxidation on Vanadium Oxide Catalyst Prepared by In Situ Activation of Amorphous Vanadium Pentoxide Precursor, D. Gasser and A. Baiker, *J. Catal.*, **113**, 325-333 (1988).
- 93 The Role of Hydrogen in the Catalytic Amination of Alcohols and the Disproportionation of Amines, A. Baiker, in *Stud. Surf. Sci. Catal.*, Vol. **41** (*Heterogeneous Catalysis and Fine Chemicals*), M. Guisnet, J. Barrault, C. Bouchoule, D. Duprez, C. Montassier and G. Perot (Eds.), Elsevier, 1988, pp. 283-290.

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- 94 Water Desorption Kinetics from Alumina Supported Copper Studied by FTIR Spectroscopy, A. Wokaun, J. Jobson and A. Baiker, *Ber. Bunsenges. Phys. Chem.*, **92**, 1553-1557 (1988).
- 95 Characterization of Heterogeneous Catalysts, A. Baiker and M. Kohler, in *Handbook of Heat and Mass Transfer, Vol. 3: Catalysis, Kinetics and Reaction Engineering*, P.N. Cheremisinoff (Ed.), Gulf Publishing, Houston, 1989, Chapter 1, pp. 3-62.
- 96 Particle Size Effect on Enantioselective Hydrogenation of Ethylpyruvate over Alumina Supported Platinum Catalyst, J. Wehrli, A. Baiker, D. Monti and H.U. Blaser, *J. Mol. Catal.*, **49**, 195203 (1989).
- 97 Acidic Sites on Catalyst Surfaces and their Determination: A Monograph, J. Kijenski and A. Baiker, *Catal. Today*, **5** (1), 1989, pp. 1-120.
- 98 Supported Palladium Catalyst Prepared from Amorphous Palladium-Zirconium Alloy: Structural Properties and Catalytic Behavior in the Hydrogenation of Carbon Dioxide, A. Baiker and D. Gasser, *J. Chem. Soc., Faraday Trans. I*, **85**, 999-1007 (1989).
- 99 Interaction of Ethylene Glycole with Alumina Supported Copper: An FTIR Study, E. Jobson, A. Baiker and A. Wokaun, *Ber. Bunsenges. Phys. Chem.*, **93**, 64-70 (1989).
- 100 Stability of Alcohols and Ethers under Hydrogenation Conditions, W.K. Schumann, O.M. Kut, A. Baiker and G. Gut, *J. Chem. Tech. Biotechnol.*, **46**, 303-312 (1989).
- 101 Influence of Reaction Parameters on the Stereoselectivity of the Gasphase Hydrogenation of o-Cresol over Silica Supported Nickel. Part 1: Kinetics and Reaction Pathway, W.K. Schumann, O.M. Kut and A. Baiker, *Ind. Eng. Chem. Res.*, **28**, 693-697 (1989).
- 102 Influence of Reaction Parameters on the Stereoselectivity of the Gasphase Hydrogenation of o-Cresol over Silica Supported Nickel. Part 2: Reaction Modelling, W.K. Schumann, O.M. Kut and A. Baiker, *Ind. Eng. Chem. Res.*, **28**, 693-697 (1989).
- 103 Vanadia Layers Supported on TiO₂ - An FTIR and Raman Investigation, M. Schraml, W. Fluhr, A. Wokaun and A. Baiker, *Ber. Bunsenges. Phys. Chem.*, **93**, 852-857 (1989).
- 104 Characterization of Vanadia/Silica Mixed Gel Catalysts by Vibrational Spectroscopy, A. Wokaun, M. Schraml and A. Baiker, *J. Catal.*, **116**, 595-599 (1989).
- 105 Hydrogenation of Carbon Dioxide over Copper-Zirconia Catalyst Prepared by In Situ Activation of Amorphous Copper-Zirconium Alloy, D. Gasser, and A. Baiker, *Appl. Catal.*, **48**, 279-294 (1989).
- 106 Surface Oxidation of Amorphous Ni-Zr Alloys by B. Walz, P. Oelhafen, H.-J. Güntherodt, and A. Baiker, *Appl. Surf. Sci.*, **37**, 337-352 (1989).

- 107 Enantioselective Hydrogenation of α -Ketoesters: Effect of Reaction Medium and Conversion, by J.T. Wehrli, A. Baiker, D.M. Monti, H.U. Blaser and H.P. Jalett, *J. Mol. Catal.*, **57**, 245-257 (1989).
- 108 Verweilzeitverhalten von Flüssigkeiten in Schaumkeramik Mischelementen, L. Padeste, A. Baiker and J. P. Gabathuler, *Chem. Ing. Tech.*, **61**, 482-484 (1989).
- 109 Progress Towards Tailoring of Solid Catalysts: Supported Vanadium Oxide Catalyst for the Selective Reduction of Nitric Oxide, A. Baiker and A. Wokaun, *Naturwissenschaften*, **76**, 168-170 (1989).
- 110 Metallic Glasses in Heterogeneous Catalysis, A. Baiker, *Faraday Discuss. Chem. Soc.*, **87**, 239-308 (1989).
- 111 Selee Ceramic Foam for Pollution Reduction, T. Mizrah, J.P. Gabathuler, L. Gauckler, A. Baiker, L. Padeste and H.P. Meyer, *Proc. 1st Int. Conf. Ceramics for Environmental Protection, Berichte der Deutschen Keramischen Gesellschaft*, **4**, 143-150 (1989).
- 112 Synthesis of Cyclic Amines and their Alkyl Derivatives from Amino-Alcohols over Supported Copper Catalysts, J. Kijenski, P.J. Niedzielski and A. Baiker, *Appl. Catal.*, **53**, 107-115 (1989).
- 113 Preparation and Characterisation of a Model System for the Study of Monolayers and Multilayers of Vanadia Supported on Titania, J. Nickl, R. Schlögl, A. Baiker, H. Knözinger and G. Ertl, *Catal. Letters*, **3**, 379-387 (1989).
- 114 Oxidation and Crystallisation Behaviour of Amorphous Ni₆₄Zr₃₆ Alloy, M. Maciejewski and A. Baiker, *J. Chem. Soc., Faraday Trans.*, **86**, 843-848 (1990).
- 115 Copper-Catalyzed Dehydroamination of 1-Hexanol with Dimethylamine: An In situ FTIR Study, E. Jobson, A. Baiker and A. Wokaun, *J. Mol. Catal.*, **60**, 399-416 (1990).
- 116 Grafting of V₂O₅ Monolayers onto TiO₂ from Alkoxide Precursors- an FTIR Study, M. Schraml, A. Wokaun and A. Baiker, *J. Catal.*, **124**, 86-96 (1990).
- 117 Adsorption of Ammonia and Methylamines on Alumina and Copper/Alumina Studied by Dynamic FTIR Experiment, E. Jobson, A. Baiker and A. Wokaun, *J. Chem. Soc., Faraday Trans.*, **86**, 1131-1137 (1990).
- 118 Enantioselective Hydrogenation of α -Ketoesters: Preparation and Catalytic Behavior of Alumina Supported Platinum Catalysts Modified with Cinchonidine, J. Wehrli, A. Baiker, D.M. Monti and H.U. Blaser, *J. Mol. Catal.*, **61**, 207-226 (1990).
- 119 Vanadia Layer Catalysts Supported on TiO₂/SiO₂ Mixed Oxide Carriers - an ESR and Raman Investigation, K. L. Walther, A. Wokaun and A. Baiker, *Catal. Lett.*, **4**, 327-338 (1990).

- 120 FTIR Evidence for Surface Azides Formed upon Adsorption of Ammonia on Copper Catalysts, J. Kritzenberger, E. Jobson, A. Wokaun and A. Baiker, *Catal. Lett.*, **5**, 73-79 (1990).
- 121 Amorphous Chromia for Low Temperature Selective Catalytic Reduction of Nitric Oxide, H.E. Curry-Hyde and A. Baiker, *Ind. Eng. Chem. Res.*, **29**, 1985-1989 (1990).
- 122 Enantioselective Hydrogenation of Ethyl Pyruvate: Effect of Catalyst and Modifier Structure, H.U. Blaser, H.P. Jalett, D.M. Monti A. Baiker and J.T. Wehrli, *Preprints, Div. of Petrol. Chem., ACS*, **35**, 79-85 (1990).
- 123 Supported Metal Catalysts Prepared from Amorphous Metal Alloys by A. Baiker, J. De Pietro, M. Maciejewski and B. Walz, *Preprints, Div. of Petrol. Chem., ACS*, **35**, 123-129 (1990).
- 124 Catalytic Amination of 1-Methoxy-2-Propanol over Silica Supported Nickel. A Study of the Influence of the Reaction Parameters, V.A. Bassili and A. Baiker, *Appl. Catal.*, **65**, 293-308 (1990).
- 125 Oxidation of Carbon Monoxide over Palladium on Zirconia Prepared from Amorphous Pd_1Zr_2 Alloy: I. Bulk Structural, Morphological and Catalytic Properties, A. Baiker, D. Gasser, J. Lenzner, A. Reller, and R. Schlögl, *J. Catal.*, **126**, 555-571 (1990).
- 126 On the Mechanism of CO and CO_2 Hydrogenation Reactions on Zirconia-Supported Catalysts - A Diffuse Reflectance FTIR Study. Part I: Identification of Surface Species and Methanation Reactions on Palladium/Zirconia Catalysts, Ch. Schild, A. Wokaun and A. Baiker, *J. Mol. Catal.*, **63**, 223-242 (1990).
- 127 On the Mechanism of CO and CO_2 Hydrogenation Reactions on Zirconia-Supported Catalysts - A Diffuse Reflectance FTIR Study. Part II: Surface Species on Copper/Zirconia Catalysts-Implication for Methanol Synthesis Selectivity, Ch. Schild, A. Wokaun and A. Baiker, *J. Mol. Catal.*, **63**, 243-254 (1990).
- 128 Selective Catalytic Reduction of Nitric Oxide over Amorphous and Crystalline Chromia. (1) Comparative Study of Activities, H. E. Curry-Hyde, H. E. Musch and A. Baiker, *Appl. Catal.*, **65**, 211-223 (1990).
- 129 Chemical and Structural Transformations in the Mo- MoO_x System under Reducing and Oxidizing Atmospheres, M. Maciejewski, A. Baiker and A. Reller, *Solid State Ionics*, **43**, 203-215 (1990).
- 130 Preparation and Structural Properties of Various Titania-Silica Mixed Gels, B.E. Handy, A. Baiker, K.L. Walther and A. Wokaun, in *Synthesis and Properties of New Catalysts: Utilization of Novel Materials Components and Synthetic Techniques*, E.W. Corcoran and M.J. Ledoux (Eds.), Materials Research Society, 1990. pp. 107-111.

- 131 Hydrogenation of Carbon Dioxide Over Metal/Zirconia Catalysts Derived from Glassy Metal Alloys: Structural and Catalytic Properties, A. Wokaun, Ch. Schild, R. A. Köppel and A. Baiker, in *Synthesis and Properties of New Catalysts: Utilization of Novel Materials Components and Synthetic Techniques*, E.W. Corcoran and M.J. Ledoux (Eds.), Materials Research Society, 1990, pp. 213-217.
- 132 Amorphous Metal Alloys in Catalysis, A. Baiker, in *Synthesis and Properties of New Catalysts: Utilization of Novel Materials Components and Synthetic Techniques*, E.W. Corcoran and M.J. Ledoux (Eds.), Materials Research Society, 1990, pp. 199-204.
- 133 Role of the Modifier in the Enantioselective Hydrogenation of Ethyl Pyruvate over Pt/Al₂O₃ Catalysts, J.L. Margitfalvi, P. Marti, A. Baiker, L. Botz and O. Sticher, *Catal. Lett.*, **6**, 281-288 (1990).
- 134 Characterization of Porous Silica Gels Prepared via the Sol-Gel Process by ²⁹Si CP/MAS Solid-State NMR Spectroscopy, K.L. Walther, A. Wokaun and A. Baiker, *J. Mol. Phys.*, **71**, 769-780 (1990).
- 135 Surface Species on a Palladium/Zirconia CO Oxidation Catalyst Prepared from a Glassy Metal Precursor - Characterization by Diffuse Reflectance FTIR Spectroscopy, P. Barnickel, A. Wokaun and A. Baiker, *J. Chem. Soc., Faraday Trans.*, **87**, 333-336 (1991).
- 136 XRD and Raman Identification of the Zirconia Phases in Copper/Zirconia and Palladium/Zirconia Catalysts Prepared from Amorphous Precursors, Ch. Schild, A. Wokaun, R. Köppel and A. Baiker, *J. Catal.*, **130**, 657-661 (1991).
- 137 Oxidative Dehydrogenation of 3-Hydroxy-4-Methyl-4-Penten-2-One to 4-Methyl-4-Penten-2,3-Dione over CuO Based Catalysts, H. J. Rotgerink, G. Penn, P. Fünfschilling and A. Baiker, in *Stud. Surf. Sci. Catal.*, Vol. 59, (Heterogeneous Catalysis and Fine Chemicals), M. Guisnet, J. Barrault, C. Bouchoule, D. Duprez, G. Perot, R. Maurel and C. Montassier, (Eds.), Elsevier, 1991, pp. 413-421.
- 138 Influence of Preparation Parameters on Pore Structure of Silica Gels Prepared from Tetraethoxy Orthosilicate, B. Handy, K.L. Walther, A. Wokaun and A. Baiker, in *Stud. Surf. Sci. Catal.*, Vol. **63**, (*Preparation of Catalysts V*), G. Poncelet, P.A. Jacobs, P. Grange and B. Delmon, (Eds.), Elsevier, 1991, pp. 239-246.
- 139 Effect of Preparation Variables on Catalytic Behaviour of Copper/Zirconia Catalysts for the Synthesis of Methanol from Carbon Dioxide, R.A. Köppel and A. Baiker, in *Stud. Surf. Sci. Catal.*, Vol. **63**, (*Preparation of Catalysts V*), G. Poncelet, P.A. Jacobs, P. Grange and B. Delmon, (Eds.), Elsevier, 1991, pp. 59-68.
- 140 Alumina-Supported Platinum-Rhenium Dehydrogenation Catalysts. Influence of Metal Ratio and Precursors on Catalytic Behavior, M. Garland, A. Baiker and A. Wokaun, *Ind. Eng. Chem. Res.*, **30**, 440-447 (1991).

- 141 Supported Metal Catalysts Prepared from Amorphous Metal Alloys, A. Baiker, J. De Pietro, M. Maciejewski and B. Walz, *Stud. Surf. Sci. Catal.*, **67**, 169-178 (1991).
- 142 Enantioselective Hydrogenation of Ethyl Pyruvate: Effect of Catalyst and Modifier Structure. H.U. Blaser, H.P. Jalett, D.M. Monti A. Baiker and J.T. Wehrli, *Stud. Surf. Sci. Catal.*, **67**, 147-155 (1991).
- 143 Characterization of Vanadia/Silica Mixed Gel Catalysts by ESR Spectroscopy at 110 K, K.L. Walther, A. Wokaun and A. Baiker, *J. Chem. Soc. Faraday Trans.*, **87**, 1217-1220 (1991).
- 144 $\text{TiO}_2/\text{SiO}_2$ Mixed Oxide Catalysts Prepared by Sol-Gel Techniques. Characterization by Solid State CP/MAS, K.L. Walther, A. Wokaun, B.E. Handy and A. Baiker, *J. Non-Cryst. Solids*, **134**, 47-57 (1991).
- 145 Partial Oxidation of Methane to Methanol in a Flow Reactor at Elevated Pressure, D.W. Rytz and A. Baiker, *Ind. Eng. Chem. Res.*, **30**, 2287-2292 (1991).
- 146 Catalytic Amination of 1-Methoxy-2-Propanol over Silica Supported Nickel. Modelling of Reaction Kinetics, V. A. Bassili and A. Baiker, *Appl. Catal.*, **70**, 325-333 (1991).
- 147 Carbon Dioxide Hydrogenation over Gold/Zirconia Catalysts from Amorphous Precursors: Structural Properties and Catalytic Reaction Mechanism, R.A. Köppel, A. Baiker, Ch. Schild and A. Wokaun, *J. Chem. Soc. Faraday Trans.*, **87**, 2821-2828 (1991).
- 148 CO_2 Hydrogenation over Nickel/Zirconia Catalysts from Amorphous Precursors: On the Mechanism of Methane Formation, Ch. Schild, A. Wokaun and A. Baiker, *J. Phys. Chem.*, **95**, 6341-6346 (1991).
- 149 Surface Species in CO_2 Methanation over Amorphous Palladium/Zirconia Catalysts, Ch. Schild, A. Wokaun and A. Baiker, *J. Mol. Catal.*, **69**, 347-357 (1991).
- 150 Liquid Phase Oxidation of 1-Methoxy-2-Propanol with Air. I Lead- and Bismuth Promotion and Deactivation of Supported Palladium Catalysts, T. Mallat and A. Baiker, *Appl. Catal.*, **79**, 41-58 (1991).
- 151 Liquid Phase Oxidation of 1-Methoxy-2-Propanol with Air. II. Structural and Chemical Properties of Lead-Promoted Supported Palladium Catalysts, T. Mallat, A. Baiker and J. Patschneider, *Appl. Catal.*, **79**, 59-75 (1991).
- 152 Enantioselective Hydrogenation of Ethyl Pyruvate on Tin Promoted Pt/Alumina Catalysts, J.M. Margitfalvi, H.P. Jallet, E. Talas, A. Baiker and H.U. Blaser, *Catal. Lett.*, **10**, 325-333 (1991).
- 153 Comparison of Grafted Vanadia Species on ZrO_2 , TiO_2 , SiO_2 and $\text{TiO}_2/\text{SiO}_2$ Mixed Oxides, U. Scharf, M. Schraml-Marth, A. Wokaun and A. Baiker, *J. Chem. Soc., Faraday Trans.*, **87**, 3299-3307 (1991).

- 154 Oxidation State of Lead Promoter on a Palladium/Carbon Catalyst Before and During the Oxidation of Alcohol, T. Mallat, T. Almendinger and A. Baiker, *Appl. Surf. Sci.*, **52**, 189-197 (1991).
- 155 Characterization of V_2O_5/SiO_2 - and TiO_2/SiO_2 Mixed Gel Catalysts by Raman Spectroscopy, M. Schraml-Marth, A. Wokaun, and A. Baiker, *Fresenius J. Anal. Chem.*, **341**, 87-91 (1991).
- 156 On the Hydrogenation of CO and CO_2 over Copper/Zirconia and Palladium/Zirconia Catalysts, Ch. Schild, A. Wokaun, and A. Baiker, *Fresenius J. Anal. Chem.*, **341**, 395-401 (1991).
- 157 Porous Silica Gels and TiO_2/SiO_2 Mixed Oxides Prepared via the Sol-Gel Process. Characterization by Spectroscopic Techniques, M. Schraml-Marth, K.L. Walther, A. Wokaun, B.E. Handy and A. Baiker, *J. Non. Cryst Solids.*, **143**, 93-111 (1992).
- 158 New Perspectives in the Design of Solid Catalysts, A. Baiker, *Proceedings of 4th World Congress of Chemical Engineering*, Dechema-Verlag, 1992, pp. 635-650.
- 159 Vanadia Supported on TiO_2-SiO_2 Mixed Oxide Gels: Structure of the Dispersed Phase and Activity for the Selective Catalytic Reduction of NO with NH_3 , B.E. Handy, A. Baiker, M. Schraml-Marth and A. Wokaun, *J. Catal.*, **133**, 1-20 (1992).
- 160 Surface Structure of Crystalline and Amorphous Chromia Catalysts for Selective Catalytic Reduction of Nitric Oxide. I. Characterization by Temperature Programmed Reaction and Desorption, H.E. Curry-Hyde, H. Musch, A. Baiker, M. Schraml-Marth and A. Wokaun, *J. Catal.*, **133**, 397-414 (1992).
- 161 Surface Structure of Crystalline and Amorphous Chromia Catalysts for Selective Catalytic Reduction of Nitric Oxide. II. Diffuse Reflectance FTIR Study of Thermal Treatment and Oxygen Adsorption, M. Schraml-Marth, A. Wokaun, H.E. Curry-Hyde and A. Baiker, *J. Catal.*, **133**, 415-430 (1992).
- 162 Surface Structure of Crystalline and Amorphous Chromia Catalysts for Selective Catalytic Reduction of Nitric Oxide. III. Diffuse Reflectance FTIR Study of Ammonia Desorption from Brönsted and Lewis Acid Sites, M. Schraml-Marth, A. Wokaun, H.E. Curry-Hyde and A. Baiker, *J. Catal.*, **133**, 431-444 (1992).
- 163 Struktur und Aktivität von oxidischen SCR-De NO_x -Katalysatoren an ausgewählten Beispielen, J. Nickl und A. Baiker, in *SCR-De NO_x -Katalysatoren, Qualitätssicherung, Beurteilung und neue Entwicklungen*, Haus der Technik Fachbuchreihe, (Herausgeber, H. Köser), Vulkan Verlag, Essen, 1992, pp. 42-55.
- 164 Oxidation of Carbon Monoxide over Palladium on Zirconia Prepared from Amorphous Pd_1Zr_2 Alloy. Part II: The Nature of the Active Surface, R. Schlögl, G. Loose, M. Wesemann and A. Baiker, *J. Catal.*, **137**, 139-157 (1992).

- 165 Vanadia Supported on Titania Prepared by Grafting: Influence of Support Properties on Structure and Activity of Vanadia for the Selective Catalytic Reduction of NO by NH₃, B.E. Handy, I. Gorzkowska, J. Nickl, A. Baiker, M. Schraml-Marth and A. Wokaun, *Ber. Bunsenges. Phys. Chem.*, **96**, 1832-1840 (1992).
- 166 Planar Chromatographic Separation of Cinchona Alkaloids Formed During Enantioselective Hydrogenation of Ethyl Pyruvate, E. Talas, L. Botz, J. Margitfalvi, O. Sticher, and A. Baiker, *J. Planar Chromatography*, **5**, 28-34 (1992).
- 167 Vanadia, Vanadia-Titania, and Vanadia-Titania-Silica Gels: Structural Genesis and Catalytic Behavior in the Reduction of Nitric Oxide with Ammonia, B. E. Handy, M. Maciejewski and A. Baiker, *J. Catal.*, **134**, 75-86 (1992).
- 168 Criteria for Gradientless Operation of Internal Recycle Reactors, R. Dümpelmann and A. Baiker, *Chem. Ing. Sci.*, **47**, 2665-2670 (1992).
- 169 Partial Oxidation of Methane: The Role of Surface Reactions, F.J. Thomas, and A. Baiker, *Ind. Eng. Chem. Res.*, **31**, 2272-2278 (1992).
- 170 Transformation of Amorphous Glassy Metal/Zirconium Alloys Into CO₂ Hydrogenation Catalysts: An XPS, SIMS, and SNMS Investigation, Ch. Schild, A. Wokaun, and A. Baiker, *Surf. Sci.*, **269/270**, 520-528 (1992).
- 171 Copper/Zirconia Catalysts for the Synthesis of Methanol from Carbon Dioxide - Influence of Preparation Variables on Structural and Catalytic Properties of Catalysts, R.A. Koeppl, A. Baiker and A. Wokaun, *Appl. Catal. A: General*, **84**, 77-102 (1992).
- 172 Genesis and Structural Properties of Alkoxide-Prepared Titania-Silica Xerogels, B.E. Handy, M. Maciejewski, A. Baiker and A. Wokaun, *J. Mater. Chem.*, **2**, 833-840 (1992).
- 173 Titania Supported V₂O₅ Catalysts for the Selective Oxidation of o-Xylene to Phthalic Anhydride: Influence of Vanadia Content and Preparation Conditions on Catalytic Behavior and Structural Properties of Catalysts, M. Nobbenhuis, A. Baiker, P. Barnickel and A. Wokaun, *Appl. Catal. A: General*, **85**, 157-172 (1992).
- 174 CO Oxidation over Au/ZrO₂ Catalysts: Activity, Deactivation Behavior, and Reaction Mechanism, A. Knell, P. Barnickel, A. Baiker, and A. Wokaun, *J. Catal.*, **137**, 306-321 (1992).
- 175 Surface Oxidic Phases of Binary and Ternary Zirconia-Supported Metal Catalysts Investigated by Raman Spectroscopy, M. Kilo, Ch. Schild, A. Wokaun and A. Baiker, *J. Chem. Soc. Faraday Trans.*, **88**, 1453-1457 (1992).
- 176 Selective Catalytic Reduction of Nitric Oxide over Vanadia Grafted on Titania: Influence of Vanadia Loading on Structural and Catalytic Properties of Catalysts, A. Baiker, B. Handy, J. Nickl, M. Schraml-Marth and A. Wokaun, *Catal. Lett.*, **14**, 89-99 (1992).

- 177 High Surface Area Titania Aerogels: Preparation and Structural Properties, M. Schneider and A. Baiker, *J. Mater. Chem.*, **2**, 587-589 (1992).
- 178 Liquid-phase oxidation of 1-methoxy-2-propanol with air III. Chemical Deactivation and Oxygen Poisoning of Platinum Catalysts, T. Mallat, A. Baiker, and L. Botz, *Appl. Catal. A: General*, **86**, 147-163 (1992).
- 179 Surface Structure of Crystalline and Amorphous Chromia Catalysts for the Selective Catalytic Reduction of Nitric Oxide. IV. Diffuse Reflectance FTIR Study of NO Adsorption and Reaction, M. Schraml-Marth, A. Wokaun, and A. Baiker, *J. Catal.*, **138**, 306-321 (1992).
- 180 Liquid Phase Air-Oxidation of Secondary Alcohols on Bimetallic Catalysts, T. Mallat, Z. Bodnar and A. Baiker, *Proc. DGMK Conference Selective Oxidations in Petrochemistry*, (Tagungsbericht 9204), Goslar, 1992, pp. 237-246.
- 181 Promotion and Deactivation of Platinum Catalysts in the Liquid Phase Oxidation of Secondary Alcohols, T. Mallat, Z. Bodnar and A. Baiker, *Preprints, Div. of Petrol. Chem., ACS*, **37**, 1151-1156 (1992).
- 182 Catalytic Reduction of Nitric Oxide Over Amorphous and Crystalline Chromia. II. Structural Dependence of Selective and Non-Selective Reactions, H. E. Curry-Hyde and A. Baiker, *Appl. Catal. A: General*, **90**, 183-197 (1992).
- 183 A New Hydrosol of Gold Clusters, D. G. Duff, A. Baiker and P.P. Edwards, *J. Chem. Soc., Chem. Commun.*, 96-98 (1993).
- 184 Enantioselective Hydrogenation of Alpha Ketoesters over Pt/Al₂O₃ Catalyst. New Aspects of the Rate Acceleration Effect Induced by Addition of Cinchona Alkaloids, J.L. Margitfalvi, B. Minder, E. Talas, L. Botz and A. Baiker, *Stud. Surf. Sci. Catal.*, **75**, 2471-2474 (1993).
- 185 Hydrogenation of CO₂ over Copper, Silver and Gold/Zirconia Catalysts. Comparative Study of Catalyst Properties and Reaction Pathways, A. Baiker, S. Menzi, M. Maciejewski, M. Kilo and A. Wokaun, *Stud. Surf. Sci. Catal.* **75**, 1257-1272 (1993).
- 186 Catalytic Amination of Alcohols and its Potential for the Synthesis of Amines, A. Baiker, in: *Catalysis of Organic Reactions* (Eds. J. R. Kosak and T.A. Johnson), Marcel Dekker, New York, 1993, pp. 91-102.
- 187 Vanadia Catalysts for the Selective Catalytic Reduction of NO by NH₃ Prepared by Vapour Deposition of Vanadyl Alkoxide onto Various Supports, J. Nickl, D. Dutoit, A. Baiker, U. Scharf and A. Wokaun, *Ber. Bunsenges. Phys. Chem.*, **97**, 217-228 (1993).
- 188 Vanadia on Titania Prepared by Vapour Deposition of Vanadyl Alkoxide: Influence of Preparation Variables on Structure and Activity for the Selective Catalytic Reduction of Nitric Oxide by Ammonia, J. Nickl, D. Dutoit, A. Baiker, U. Scharf and A. Wokaun, *Appl. Catal. A*, **98**, 173-193 (1993).

- 189 Methane Oxidation over Palladium on Zirconia Prepared from Amorphous Pd_1Zr_3 Alloys, P. Marti, M. Maciejewski and A. Baiker, *J. Catal.*, **139**, 494-509 (1993).
- 190 Preparation of Promoted Platinum Catalysts of Designed Geometry and Role of Promotors in the Liquid Phase Oxidation of 1-Methoxy-2-Propanol, T. Mallat, Z. Bodnar, A. Baiker, O. Greis, H. Strübig and A. Reller, *J. Catal.*, **142**, 237-253 (1993).
- 191 Chromia on Titania Catalysts. I. An EPR Study of the Chemical and Structural Changes Occurring During Catalyst Genesis, K. Köhler, C. W. Schläpfer, A. von Zelewsky, J. Nickl, J. Engweiler and A. Baiker, *J. Catal.*, **143**, 201-214 (1993).
- 192 On the Characterization of Surface VO_x -Species by XPS: Layered Oxidic Systems as Model Catalysts, J. Nickl, Ch. Schild, A. Baiker and A. Wokaun, *Fresenius J. Anal. Chem.*, **346**, 79-83 (1993).
- 193 Transformation of Glassy Palladium-Zirconium Alloys to Highly Active CO-Oxidation Catalysts During In Situ Activation Studied by Thermoanalytical Methods and X-Ray Diffraction, A. Baiker, M. Maciejewski and S. Tagliaferri, *Ber. Bunsenges. Phys. Chem.*, **97**, 288-292 (1993).
- 194 A New Hydrosol of Gold Clusters. I. Formation and Particle Size Variation, D. G. Duff, A. Baiker and P.P. Edwards, *Langmuir*, **9**, 2301-2309 (1993).
- 195 A New Hydrosol of Gold Clusters. II. A Comparison of Some Different Measurement Techniques, D. G. Duff, A. Baiker, I. Gameson and P.P. Edwards, *Langmuir*, **9**, 2310-2317 (1993).
- 196 Structure and Thermochemical Reactivity of $\text{Cu}(\text{NH}_3)_2\text{CO}_3$, M. Maciejewsky, A. Baiker, H. Viebrock, U. Sazama, P.M. Wilde and A. Reller, *Solid State Ionics*, 63-65, 346-350 (1993).
- 197 Amorphous Metal Alloys in Catalysis, A. Baiker, in *Advances in Catalyst Design* Vol. 2, (Eds., M. Graziani and C.N.R. Rao) World Scientific, 1993, pp. 217-244.
- 198 Hydrogenation of Carbon Dioxide over Silver Promoted Copper/Zirconia Catalysts, Ch. Fröhlich, R. Köppel, A. Baiker, M. Kilo and A. Wokaun, *Appl. Catal. A.*, **106**, 275-293 (1993).
- 199 Heterogeneous Catalytic Reduction of Carbon Dioxide over Metal/Zirconia Catalysts, A. Baiker and R. Köppel, *Proc. Int. Conf. on Carbon Dioxide Utilization*, Bari, Italy, 1993, pp. 295-302.
- 200 Characterization of Vanadia/Silica Mixed Gel Catalysts by ^{51}V and ^{29}Si CP/MAS Solid State NMR Spectroscopy, K.L. Walther, J. Kümmelen, A. Baiker and A. Wokaun, *Ber. Bunsenges. Phys. Chem.*, **97**, 772-777 (1993).

- 201 Partial Oxidation of Water-insoluble Alcohols over Bi-Promoted Pt-Alumina. Electrochemical Characterization of the Catalyst in its Working State, T. Mallat, Z. Bodnar and A. Baiker, in *Stud. Surf. Sci. Catal., (Heterogeneous Catalysis and Fine Chemicals III)*, M. Guisnet et al. (Eds.), Elsevier, 1993, pp. 377-384.
- 202 Ab Initio and Semiempirical Investigations of the Complexation of Methyl Pyruvate by Ammonia and the Ammonium Cation, O. Schwalm, J. Weber, J. Margitfalvi and A. Baiker, *J. Mol. Struct.* **297**, 285-293 (1993).
- 203 Bulk Alloy Formation During Germanium Adsorption onto a Palladium Powder Catalyst Z. Bodnar, T. Mallat and A. Baiker, *J. Electroanal. Chem.*, **358**, 327-331 (1993).
- 204 Amorphous Alloys as Catalyst Precursors in Organic Synthesis, J. Heveling, E. Armbruster and A. Baiker, *Proc. Intern. Conference on Catalysis & Catalytic Processing*, Cape Town, South Africa, 1993, pp. 85-92.
- 205 Promotion and Deactivation of Platinum Catalysts in Liquid-Phase Oxidation of Secondary Alcohols, T. Mallat, Z. Bodnar and A. Baiker, *ACS Symp. Series*, **523**, 308-317 (1993).
- 206 Use of Positron Emitting ^{13}N for Studies of the Selective Reduction of NO by NH_3 over Vanadia/Titania Catalyst at Extremely Low Reactant Concentrations, U. Baltensperger, M. Amman, U. Borchert, B. Eichler, H.W. Gäggeler, D.T. Jost, J. A. Kovacs, A. Türler, U. W. Scherrer, and A. Baiker, *J. Phys. Chem.*, **97**, 12325-12330 (1993).
- 207 Enantioselective Hydrogenation on Solid Catalysts, A. Baiker, *Proc. DGMK Conference Selective Hydrogenations and Dehydrogenations*, (Tagungsbericht 9305), Kassel, 1993, pp. 119-130.
- 208 Partial Oxidation of Cinnamyl Alcohol on Bimetallic Catalysts of Improved Resistance to Self-Poisoning, T. Mallat, Z. Bodnar, M. Maciejewski and A. Baiker, *Stud. Surf. Sci. Catal.*, **82**, 561-570 (1994).
- 209 Hydrogen Cyanide Formation in Selective Reduction of Nitrogen Oxides by Hydrocarbons over Cu-ZSM 5 Catalyst, F. Radtke, R.A. Köppel and A. Baiker, *Appl. Catal. A, General*, **107**, L125-L132 (1994).
- 210 Aerogel Catalysts, M. Schneider and A. Baiker, in *Encyclopedia of Advanced Materials* (Eds. D. Bloor et al.), Vol. 1, Pergamon, 1994, pp. 49-54.
- 211 Metal/Zirconia Catalysts for the Synthesis of Methanol: Characterization by Vibrational Spectroscopy, A. Wokaun, J. Weigel, M. Kilo and A. Baiker, *Fresenius J. Anal. Chem.*, **349**, 71-75 (1994).
- 212 Chromia on Titania Catalysts. II. Morphological Properties and Activity for the Selective Catalytic Reduction of Nitric Oxide by Ammonia, J. Engweiler, J. Nickl, A. Baiker, K. Köhler, C.W. Schläpfer and A. von Zelewsky, *J. Catal.*, **145**, 141-150 (1994).

- 213 Chromia on Titania Catalysts. III. Structure and Spectroscopic Properties, U. Scharf, H. Schneider, A. Baiker and A. Wokaun, *J. Catal.*, **145**, 464-478 (1994).
- 214 Characterization of V_2O_5/TiO_2 Eurocat Samples by Temperature Programmed Reduction, R. Köppel, J. Nickl and A. Baiker, *Catal. Today*, **20**, 45-52 (1994).
- 215 Glassy Metals in Catalysis, A. Baiker, in *Topics in Applied Physics*, Vol. **72**, (Eds. H. Beck and H.J. Güntherodt), Springer Verlag, Berlin, Heidelberg, 1994, pp. 121-162.
- 216 Influence of the A-Site Cation in $ACoO_3$ (A = La, Pr, Nd and Gd) Perovskite-Type Oxides on the Catalytic Activity for the Methane Combustion, A. Baiker, P.E. Marti, P. Keusch, E. Fritsch and A. Reller, *J. Catal.*, **146**, 268-276 (1994).
- 217 Enantioselective Hydrogenation of α -Ketoesters over Pt/Alumina Modified with Cinchonidine. Theoretical Investigation of Substrate-Modifier Interaction, O. Schwalm, B. Minder, J. Weber, and A. Baiker, *Catal. Lett.*, **23**, 271-279 (1994).
- 218 Vanadia/Silica Model Catalyst: AFM and XPS Investigation of Morphological and Chemical Changes Occuring Upon Exposure to Different Gas Atmospheres, Ch. Schild, J. Nickl and A. Baiker, *Catal. Lett.*, **25**, 179-189 (1994).
- 219 Incorporation of Carbon into Palladium During Low Temperature Disproportionation of CO over Pd/ZrO_2 Prepared from Glassy Pd-Zr Alloys, M. Maciejewski and A. Baiker, *J. Phys. Chem.*, **98**, 285-290 (1994).
- 220 Three-Way Catalysts in a Hybrid Drive Systems: I. Experimental Study of Dynamic Behaviour, L. Padeste and A. Baiker, *Ind. Eng. Chem. Res.*, **33**, 1113-1119 (1994).
- 221 Oxidation of Alcohols on Platinum Metal Catalysts in the Aqueous Phase, T. Mallat and A. Baiker, *Catal. Today*, **19**, 247-283 (1994).
- 222 Theoretical Investigation of the Enantioselective Hydrogenation of α -Ketoesters over Pt/Alumina Modified with Cinchonidine, O. Schwalm, B. Minder, J. Weber and A. Baiker, *Int. J. Quantum. Chem.*, **52**, 191-197 (1994).
- 223 In-Situ Diffuse Reflectance FTIR Study of Selective Catalytic Reduction of NO with NH_3 over Vanadia/Titania Aerogels, H. Schneider, S. Tschudin, M. Schneider, A. Wokaun, and A. Baiker, *J. Catal.*, **147**, 5-14 (1994).
- 224 Chromia Supported on Titania. IV. Nature of Active Sites for the Selective Catalytic Reduction of NO by NH_3 , H. Schneider, U. Scharf, A. Wokaun and A. Baiker, *J. Catal.*, **147**, 545-556 (1994).
- 225 Study of the Morphology of Vanadia/Titania and Tin-Oxide-Promoted Vanadia/Titania Catalysts by Electron Microscopic Methods, M.G. Nobbenhuis, R. Wessicken, W. Probst, T. Mallat and A. Baiker, *Appl. Surf. Sci.*, **78**, 99-106 (1994).

- 226 High Surface Area Platinum-Titania Aerogels: Preparation, Structural Properties and Hydrogenation Activity, M. Schneider, G.D. Duff, T. Mallat, M. Wildberger, and A. Baiker, *J. Catal.*, **147**, 500-514 (1994).
- 227 Promoted Vanadia/Titania Catalysts for o-Xylene Oxidation. Influence of Acid-Base and Redox Properties, M.G. Nobbenhuis, P. Hug, T. Mallat and A. Baiker, *Appl. Catal. A: General*, **108**, 241-260 (1994).
- 228 Palladium Promoted by Metal Ions. Oxidation State of Promotor During Liquid Phase Hydrogenations, Z. Bodnar, T. Mallat and A. Baiker, in: *Catalysis of Organic Reactions* (Eds. J. R. Kosak and T.A. Johnson), Marcel Dekker, New York, 1994, pp. 393-402.
- 229 Influence of the A-Site Cation in $AMnO_{3+x}$ and $AFeO_{3+x}$ (A = La, Pr, Nd and Gd) Perovskite-Type Oxides on the Catalytic Activity for Methane Combustion, P. Marti and A. Baiker, *Catal. Lett.*, **26**, 71-84 (1994).
- 230 New Chiral Modifiers for the Enantioselective Hydrogenation of Ethyl Pyruvate over Platinum/Alumina, G. Wang, T. Heinz, A. Pfaltz, B. Minder, T. Mallat and A. Baiker, *J. Chem. Soc., Chem. Commun.*, 2047-2048 (1994).
- 231 Methane Combustion over $La_{0.8}Sr_{0.2}MnO_{3-x}$ Supported on MAI_2O_4 (M = Mg, Ni and Co) Spinels, P.E. Marti, M. Maciejewski and A. Baiker, *Appl. Catal. B: Environmental*, **4**, 225-235 (1994).
- 232 Reactant Induced Restructuring (Corrosion) of Germanium-Palladium Catalysts During Hydrogenation Reactions, Z. Bodnar, T. Mallat and A. Baiker, *Catal. Lett.*, **26**, 61-70 (1994).
- 233 Preparation, Structural Properties and Hydrogenation Activity of Highly Porous Palladium-Titania Aerogels, M. Schneider, M. Wildberger, M. Maciejewski, D. Duff, T. Mallat and A. Baiker, *J. Catal.*, **148**, 625-638 (1994).
- 234 Vanadia-Titania Aerogels. I. Preparation, Morphological Properties and Activity for the Selective Catalytic Reduction of Nitric Oxide by Ammonia, M. Schneider, M. Maciejewski, S. Tschudin, A. Wokaun and A. Baiker, *J. Catal.*, **149**, 326-343 (1994).
- 235 Vanadia-Titania Aerogels. II. Spectroscopic Investigation of the Structural Properties, U. Scharf, M. Schneider, A. Baiker and A. Wokaun, *J. Catal.*, **149**, 344-355 (1994).
- 236 Vanadia-Titania Aerogels. III. Influence of Niobia on Structural Properties and Activity for the Selective Catalytic Reduction of Nitric Oxide by Ammonia, M. Schneider, U. Scharf, A. Wokaun and A. Baiker, *J. Catal.*, **150**, 284-300 (1994).
- 237 Direct Oxidation of L-Sorbose to 2-Keto-L-Gulonic Acid with Molecular Oxygen on Platinum- and Palladium-Based Catalysts, C. Brönnimann, Z. Bodnar, P. Hug, T. Mallat and A. Baiker, *J. Catal.*, **150**, 199-211 (1994).

- 238 Platinum-Catalyzed Oxidation of Alcohols in Aqueous Solutions. The Role of Bi-Promotion in Suppression of Catalyst Deactivation, T. Mallat, Z. Bodnar, C. Brönnimann and A. Baiker, *Stud. Surf. Sci. Catal.* **88**, 385-392 (1994).
- 239 Determination of Carbon Dioxide Contents in Cuprate Superconductors of the $\text{Y}_2\text{Ba}_4\text{Cu}_{6+n}\text{O}_{14+n}$ Family, M. Maciejewski, A. Baiker, K. Conder, Ch. Krüger, J. Karpinski and E. Kaldis, *Physica C*, **227**, 343-350 (1994).
- 240 Harmful By-Products in Selective Catalytic Reduction of Nitrogen Oxides by Hydrocarbons over Alumina, F. Radtke, R.A. Köppel and A. Baiker, *Catal. Lett.*, **28**, 131-142 (1994).
- 241 Surface Diffusion of the Cyclohexadienyl Radical Adsorbed on Silica and on a Silica Supported Pd Catalyst Studied by Means of ALC-MU-SR, Schwager, H. Dilger, E. Roduner, I.D. Reid, P.W. Percival and A. Baiker, *Chem. Phys.*, **189**, 697-712 (1994).
- 242 Vanadia Supported on Titania Aerogels. Morphological Properties and Catalytic Behaviour in the Selective Reduction of NO by NH_3 , J. Engweiler and A. Baiker, *Appl. Catal. A: General*, **120**, 187-205 (1994).
- 243 Enantioselective Hydrogenation of Ethyl Pyruvate. Influence of Oxidative Treatment of Cinchonidine-Modified Platinum Catalyst and Hemiketal Formation in Alcoholic Solvents, B. Minder, T. Mallat, P. Skrabal and A. Baiker, *Catal. Lett.*, **29**, 115-124 (1994).
- 244 Semicontinuous Extraction of Methanolic Titania Gels with Liquid or Supercritical CO_2 . Influence of Extraction Conditions on Aerogel Structure, D.C.M. Dutoit and A. Baiker, *Proc. 3rd Intern. Symp. on Supercritical Fluids*, (ISBN 2-905267-23-8), Vol. **2**, Strasbourg, France, 1994, pp. 77-82.
- 245 Catalytic Dehydrogenation of 10,11-Dihydro-5H-Dibenz[b,f]Azepine (Iminodibenzyl) to 5H-Dibenz[b,f]azepine (Iminostilbene) over Potassium-Promoted Iron Oxides in the Presence of Steam, A. Knell, D. Monti and A. Baiker, *Appl. Catal. A: General*, **121**, 139-158 (1995).
- 246 Behaviour of Three-Way Catalysts in Hybrid Drive Systems. Dynamic Measurements and Kinetic Modelling, S. Tagliaferri, L. Padeste and A. Baiker, *Stud. Surf. Sci. Catal.*, **96**, 897-908 (1995).
- 247 Oxidation and Disproportionation of Carbon Monoxide over Pd/ZrO_2 Catalysts Prepared from Glassy Pd-Zr Alloy and by Coprecipitation, S. Tagliaferri, S. Gredig, M. Maciejewski and A. Baiker, *Stud. Surf. Sci. Catal.*, **96**, 285-295 (1995).
- 248 Enantioselective Hydrogenation of α -Ketoesters over Cinchona Alkaloid Modified Pt/Alumina: A Molecular View on the Enantio-differentiation, A. Baiker, T. Mallat, B. Minder, O. Schwalm, K.E. Simons, and J. Weber, in *Chiral Reactions in Heterogeneous Catalysis*, (Eds. G. Jannes and V. Dubois), Plenum Press, New York, 1995, pp. 95-103.

- 249 A Theoretical Investigation of the Enantioselective Hydrogenation Mechanism of α -Ketoesters, O. Schwalm, J. Weber, B. Minder and A. Baiker, *J. Mol. Struct., Theo. Chem.*, **330**, 353-357 (1995).
- 250 Selective Oxidation of o-Xylene to Phthalic Anhydride over Vanadia/Titania: Comparative Study of Integral and Recycle Reactor Operation, M. Nobbenhuis, P. Barnickl, A. Wokaun and A. Baiker, *Chem. Eng. Technol.* **18**, 17-22 (1995).
- 251 Carbon Monoxide Oxidation Catalysts Prepared by In Situ Activation of Amorphous $\text{Au}_5\text{FeZr}_{14}$ and $\text{Au}_5\text{AgZr}_{14}$, A. Baiker, S. Tagliaferri, M. Maciejewski and P. Hug, *J. Catal.*, **151**, 407-419 (1995).
- 252 X-ray Structure of a New Hydrosol of Gold Clusters, W. Vogel, D. Duff and A. Baiker, *Langmuir*, **11**, 401-404 (1995).
- 253 Selective Oxidation of Cinnamyl Alcohol to Cinnamylaldehyde with Air over Bi-Pt/Alumina Catalyst, T. Mallat, Z. Bodnar, P. Hug and A. Baiker, *J. Catal.*, **153**, 131-143 (1995).
- 254 $\text{La}_{0.8}\text{Sr}_{0.2}\text{MnO}_{3+x}$ Supported on LaAlO_3 and $\text{LaAl}_{11}\text{O}_{18}$ Prepared by Different Methods. Influence of Preparation Method on Morphological and Catalytic Properties in Methane Combustion, P.E. Marti, M. Maciejewski and A. Baiker, *Stud. Surf. Sci. Catal.*, **91**, 617-626 (1995).
- 255 Novel Procedure for the Preparation of Highly Active Platinum-Titania and Palladium-Titania Aerogel Catalysts with Favourable Textural Properties, M. Schneider, M. Wildberger, D.G. Duff, T. Mallat, M. Maciejewski and A. Baiker, *Stud. Surf. Sci. Catal.*, **91**, 75-84 (1995).
- 256 Preparation and Structural Properties of Ultrafine Gold Colloids for Oxidation Catalysis, D. Duff and A. Baiker, *Stud. Surf. Sci. Catal.*, **91**, 505-512 (1995).
- 257 Titania-Silica Mixed Oxides. I. Influence of Sol-Gel and Drying Conditions on Structural Properties, D. Dutoit, M. Schneider and A. Baiker, *J. Catal.*, **153**, 165-176 (1995).
- 258 Titania-Silica Mixed Oxides. II. Catalytic Behaviour on Olefin Epoxidation, R. Hutter, T. Mallat, and A. Baiker, *J. Catal.*, **153**, 177-189 (1995).
- 259 Surface Morphology and Electrical Properties of Copper Thin Films Prepared by MOCVD, M. Becht, K.H. Dahmen, F. Atamny and A. Baiker, *Fresenius J. Anal. Chem.*, **353**, 718-722 (1995).
- 260 AFM and XRD Investigation of Crystalline Vapor-Deposited C_{60} Films, F. Atamny, A. Baiker, H.J. Muhr and R. Nesper, *Fresenius J. Anal. Chem.*, **353**, 433-438 (1995).
- 261 Formation of Hydrogen Cyanide over Cu/ZSM-5 Catalyst Used for the Removal of Nitrogen Oxides from Exhausts of Lean-Burn Engines, F. Radtke, R.A. Köppel and A. Baiker, *Environ. Sci. Technol.*, **29**, 2703-& (1995).

- 262 Catalytic Dehydrogenation of Iminodibenzyl to Iminostilbene. A Comparison of Potassium-Promoted Manganese-, Iron- and Cobalt Oxide Catalysts, A. Knell, D. Monti and A. Baiker, *Catal. Lett.*, **31**, 197-207 (1995).
- 263 Titania Aerogels Prepared by Low-Temperature Supercritical Drying. Influence of Extraction Conditions, D. Dutoit, M. Schneider and A. Baiker, *J. Porous Mater.*, **1**, 165-174 (1995).
- 264 Catalyst Potential: A Key for Controlling Alcohol Oxidation in Multiphase Reactors, T. Mallat and A. Baiker, *Catal. Today*, **24**, 143-150 (1995).
- 265 Aerogels in Catalysis, M. Schneider and A. Baiker, *Catal. Rev. Sci. & Eng.*, **37**, 515-556 (1995).
- 266 A Novel Aminoalcohol Modifier for the Enantioselective Hydrogenation of Ethyl Pyruvate on Platinum/Alumina, B. Minder, T. Mallat, A. Baiker, G. Wang, T. Heinz and A. Pfaltz, *J. Catal.*, **154**, 371-378 (1995).
- 267 A New Class of Chiral Modifiers for the Enantioselective Hydrogenation of α -Ketoesters with Pt/Al₂O₃, K.E. Simons, G. Wang, T. Heinz, T. Mallat, A. Pfaltz and A. Baiker, *Tetrahedron Asymmetry*, **6**, 505-518 (1995).
- 268 Synthesis of Methylamines from Carbon Dioxide and Ammonia, S.V. Gredig, R.A. Koeppel and A. Baiker, *J. Chem. Soc. Chem. Commun.*, 73-74 (1995).
- 269 Interconversion of CrO₂ Formed by Decomposition of Chromium (III) Nitrate, M. Maciejewski, K. Köhler, H. Schneider and A. Baiker, *J. Solid State Chem.*, **119**, 13-23 (1995).
- 270 Direct Imaging of the Tip Shape by AFM, F. Atamny and A. Baiker, *Surf. Sci. Lett.*, **323**, L314-L318 (1995).
- 271 Chromia Supported on Titania. V. Control of the Composition of the Chromium Containing Phases, K. Köhler, M. Maciejewski, H. Schneider and A. Baiker, *J. Catal.*, **157**, 301-311 (1995).
- 272 Chromia Supported on Titania. VI. Properties of Different Chromium Oxide Phases in the Catalytic Reduction of NO by NH₃ Studied by In Situ Diffuse Reflectance FTIR Spectroscopy, H. Schneider, M. Maciejewski, K. Köhler, A. Wokaun and A. Baiker, *J. Catal.*, **157**, 312-320 (1995).
- 273 Catalytic Dehydrogenation of 10,11-Dihydro-5H-Dibenz[b,f]Azepine (Iminodibenzyl) to 5H-Dibenz[b,f]azepine (Iminostilbene] Over Potassium-promoted Iron Oxide Catalysts over Potassium-Promoted Iron Oxides, Effects of Steam, Potassium Promotion and Carbon Dioxide Treatment, A. Knell, D. Monti, M. Maciejewski and A. Baiker, *Appl. Catal. A: General*, **124**, 367-390 (1995).
- 274 Zirconia Aerogels and Xerogels: Influence of Solvent and Acid on Structural Properties, C. Stöcker, M. Schneider, and A. Baiker, *J. Porous Mater.*, **2**, 171-183 (1995).

- 275 Chiral Nitrogen Compounds as New Modifiers for the Enantioselective Hydrogenation of Ethyl Pyruvate, B. Minder, M. Schürch, T. Mallat and A. Baiker, *Catal. Lett.*, **31**, 143-151 (1995).
- 276 Chromium Oxide Supported on Titania: Preparation of Highly Dispersed Cr(III) Systems by Grafting, K. Köhler, J. Engweiler and A. Baiker, *Langmuir*, **11**, 3423-3430 (1995).
- 277 Formation of HNCO During Catalytic Reduction of NO_x with Olefins over Cu/ZSM-5, F. Radtke, R.A. Koeppl and A. Baiker, *J. Chem. Soc. Chem. Commun.*, 427-428 (1995).
- 278 Enantioselective Hydrogenation of Ethyl Pyruvate in Supercritical Fluids, B. Minder, T. Mallat, K.H. Pickel, K. Steiner and A. Baiker, *Catal. Lett.*, **34**, 1-9 (1995).
- 279 Novel Mesoporous Titania-Silica Aerogels Highly Active for the Selective Epoxidation of Cyclic Olefins, R. Hutter, D.C.M. Dutoit, T. Mallat, M. Schneider and A. Baiker, *J. Chem. Soc., Chem. Commun.*, 163-164 (1995).
- 280 Localized Basification of Catalytic Surfaces Enhances the Selective Oxidation of L-Sorbose over Supported Pt Catalysts Modified with Tertiary Amines, C. Brönnimann, T. Mallat and A. Baiker, *J. Chem. Soc., Chem. Commun.*, 1377-1378 (1995).
- 281 Catalysts Derived from Polymer-Stabilized Colloidal Platinum: The Effect of Support and Calcination on Catalytic Behaviour in Hydrogenations, D.G. Duff, T. Mallat, M. Schneider and A. Baiker, *Appl. Catal. A: General*, **133**, 133-148 (1995).
- 282 STM and TEM Investigation of a Technical Platinum/Graphite Catalyst, F. Atamny, D. Duff, R. Wessicken and A. Baiker, *Catal. Lett.*, **34**, 305-311 (1995).
- 283 Titania-Silica Mixed Oxides. III. Epoxidation of Isophorone with Alkyl-hydroperoxides, R. Hutter, T. Mallat and A. Baiker, *J. Catal.*, **157**, 665-675 (1995).
- 284 1-(1-Naphthyl)ethylamine and Derivatives thereof as Chiral Modifiers in the Enantioselective Hydrogenation of Ethyl Pyruvate over Pt/Alumina, T. Heinz, G. Wang, A. Pfaltz, B. Minder, M. Schürch, T. Mallat and A. Baiker, *J. Chem. Soc., Chem. Commun.*, 1421-1422 (1995).
- 285 Improving Methylcyclohexane Dehydrogenation with Ex-Situ Hydrogen Separation in a Reactors-Interstaged Membrane System, J.K. Ali, D.W.T. Rippin and A. Baiker, *Ind. Eng. Chem. Res.*, **34**, 2940-2948 (1995).
- 286 Measuring Conversions in Dehydrogenation Reactions with the Aid of a Pd-Ag Membrane, J.K. Ali and A. Baiker, *Ind. Eng. Chem. Res.*, **34**, 3166-3169 (1995).
- 287 Novel Heterogeneous Route for the Coupling of Phenylethyne by Catalyst Derived from Cu-Mg-Al Hydrotalcite, S. M. Auer, M. Schneider and A. Baiker, *J. Chem. Soc., Chem. Commun.*, 2057-2058 (1995).

- 288 Selective Epoxidation of β -Isophorone with Mesoporous Titania-Silica Aerogels and t-Butyl Hydroperoxide, R. Hutter, T. Mallat and A. Baiker, *J. Chem. Soc., Chem. Commun.*, 2487-2488 (1995).
- 289 Formation of Undesired By-Products in DeNO_X Catalysis by Hydrocarbons, F. Radtke, R.A. Köppel and A. Baiker, *Catal. Today*, **26**, 159-167 (1995).
- 290 Incorporation and Reactivity of Carbon in Palladium, M. Maciejewski and A. Baiker, *J. Pure and Appl. Chem.*, **67**, 1879-1884 (1995).
- 291 Vibrational Spectroscopic Study of IB Metal/Zirconia Catalysts for the Synthesis of Methanol, J. Weigel, C. Fröhlich, A. Baiker and A. Wokaun, *Appl. Catal. A: General*, **140**, 29-45 (1996).
- 292 Surface Species in CO and CO₂ Hydrogenation over Copper/Zirconia Catalyst and their Role in Methanol Synthesis, J. Weigel, R. A. Köppel, A. Baiker and A. Wokaun, *Langmuir*, **12**, 5319-5329 (1996).
- 293 Zirconia Aerogels: Effect of Acid Used in the Sol-Gel Process on Morphological Properties, C. Stöcker, M. Schneider and A. Baiker, *J. Porous Mater.*, **2**, 325-330 (1996).
- 294 Titania-Silica Mixed Oxides. IV. Influence of Ti -Content and Aging on Structural and Catalytic Properties of Aerogels, C. Dutoit, M. Schneider, R. Hutter and A. Baiker, *J. Catal.*, **161**, 651-658 (1996).
- 295 Selective Reduction of NO by NH₃ over Commercial Vanadia-Based Catalyst: Parametric Sensitivity and Kinetic Modelling, R. Willi, B. Roduit, R. Köppel, A. Wokaun and A. Baiker, *Chem. Eng Sci.*, **51**, 2897-2902 (1996).
- 296 Vanadia-Silica Low-Temperature Aerogels: Influence of Aging and Vanadia Loading on Structural and Chemical Properties, D. Dutoit, M. Schneider, P. Fabrizioli and A. Baiker, *Chem. Mater.*, **8**, 734-743 (1996).
- 297 Towards Molecular Design of Solid Catalysts, A. Baiker, *Stud. Surf. Sci. Catal.*, **101**, 51-62 (1996).
- 298 Quantum Chemistry Techniques Applied to the Modeling of the Enantioselective Hydrogenation Mechanism of α -Ketoesters, O. Schwalm, J. Weber, B. Minder and A. Baiker, in *Modeling Complex Data for Creating Information*, (J. E. Dubois and N. Gershon, Eds.), Springer Verlag, 1996, pp. 269-274.
- 299 Platinum Catalysts Modified by Adsorbed Amines: A New Method of Enhancing Rate and Selectivity of L-Sorbose Oxidation, C. Brönnimann, Z. Bodnar, R. Aeschiman, T. Mallat and A. Baiker, *J. Catal.*, **161**, 720-729 (1996).
- 300 Oxidation of 2,3,6-Trimethylphenol to Trimethyl-1,4-Benzoquinone with Catalytic Amount of CuCl₂, Z. Bodnar, T. Mallat and A. Baiker, *J. Mol. Catal.*, **110**, 55-63 (1996).

- 301 Influence of Experimental Conditions on Kinetic Parameters of Gas-Solid Reactions - Parametric Sensitivity of Thermal Analysis, B. Roduit, M. Maciejewski and A. Baiker, *Thermochim. Acta*, **282/283**, 101-119 (1996).
- 302 Enantioselective Hydrogenation of Ethyl Pyruvate over Pt/Alumina Modified by (R)-1-(1-Naphthyl)ethylamine and Derivatives, B. Minder, M. Schürch, T. Mallat, T. Heinz, A. Pfaltz and A. Baiker, *J. Catal.*, **160**, 261-268 (1996).
- 303 Methane Combustion over Catalysts Prepared by Controlled Oxidation of Ternary $Pd_{15}X_{10}Zr_{75}$ ($X = Co, Cr, Cu, Ni, Mn$) Amorphous Metal Alloys, C. A. Müller, R.A. Köppel, M. Maciejewski, J. Heveling and A. Baiker, *Appl. Catal. A: General*, **145**, 335-349 (1996).
- 304 Synthesis of *N,N*-Dimethylformamide by Heterogeneous Catalytic Hydrogenation of Supercritical Carbon Dioxide, O. Kröcher, R. Köppel and A. Baiker, in *High Pressure Chemical Engineering*, (Ph. R. von Rohr, Ch. Trepp, Eds.), Vol. 12, Elsevier, 1996, pp. 91-97.
- 305 n-Heptane Reforming in a System of Reactors-Interstage Membrane to Separate Hydrogen, J.K. Ali and A. Baiker, *Appl. Catal. A: General*, **140**, 99-110 (1996).
- 306 Preparation of Thin Silver Films on Mica Studied by XRD and AFM, J.D. Grunwaldt, F. Atamny, U. Göbel and A. Baiker, *Appl. Surf. Sci.*, **99**, 353-359 (1996).
- 307 Synthesis of Methylamines from Carbon Dioxide and Ammonia, S. Gredig, R.A. Köppel and A. Baiker, *Catal. Today*, **29**, 339-342 (1996).
- 308 Performance of Three-Way Catalysts in Emission Control of a Hybrid Drive Systems, L. Padeste, S. Tagliaferri and A. Baiker, *Chem. Eng. Technol.*, **19**, 89-95 (1996).
- 309 Enantioselective Hydrogenation of Pyruvic Acid Oxime to Alanine on Pd/Alumina, K. Borszky, T. Mallat, R. Aeschiman, W.B. Schweizer and A. Baiker, *J. Catal.*, **161**, 451-458 (1996).
- 310 Reaction Induced Surface Segregation in Amorphous CuZr, NiZr and PdZr Alloys. An XPS and SIMS Depth Profiling Study, M. Kilo, M. Hund, G. Sauer, A. Wokaun and A. Baiker, *J. Alloys & Compounds.*, **236**, 137-150 (1996).
- 311 Enantioselective Hydrogenation in Supercritical Fluids. Limitations of the Use of Supercritical CO_2 , B. Minder, T. Mallat and A. Baiker, in *High Pressure Chemical Engineering*, (Ph. R. von Rohr, Ch. Trepp, Eds.), Vol. 12, Elsevier, 1996, pp. 139-145.
- 312 WO_x/TiO_2 Catalysts Prepared by Grafting of Tungsten Alkoxides. Morphological Properties and Catalytic Behavior in the Selective Reduction of NO by NH_3 , J. Engweiler, J. Harf and A. Baiker, *J. Catal.*, **159**, 259-269 (1996).

- 313 Titania-Silica Aerogels with Superior Catalytic Performance in Olefin Epoxidation Compared to Large Pore Ti-Zeolites, R. Hutter, T. Mallat, D. Dutoit and A. Baiker, *Topics in Catalysis.*, **3**, 421-436 (1996).
- 314 Heterogeneous Catalysis: From Fundamentals to Reaction Engineering, A. Baiker, *Chimia*, **50**, 65-73 (1996).
- 315 Coupling of Phenylethyne Catalyzed by Hydroxycarbonates Derived from Cu-Mg-Al Hydrotalcites, S. M. Auer, R. Wandeler, M. Schneider and A. Baiker, *Proc. DGMK Conf. Catalysis on Solid Acids and Bases*, (Tagungsbericht 9204), Berlin, 1996, pp. 23-32.
- 316 Sol-Gel Hybrid Materials as Heterogeneous Catalysts for the Synthesis of *N,N*-Dimethylformamide from Supercritical Carbon Dioxide, O. Kröcher, R. A. Köppel and A. Baiker, *J. Chem. Soc., Chem. Commun.*, 1497-1498 (1996).
- 317 Enantioselective Hydrogenation of 2-Methyl-2-Pentenoic Acid over Cinchonidine-Modified Pd/Alumina, K. Borszky, T. Mallat and A. Baiker, *Catal. Lett.*, **41**, 199-202 (1996).
- 318 Titania-Silica Mixed Oxides. V. Effect of Sol-Gel and Drying Conditions on Surface Properties, D. Dutoit, M. Schneider, U. Göbel and A. Baiker, *J. Catal.*, **164**, 433-439 (1996).
- 319 Role of Lattice Oxygen in the Combustion of Methane over Palladium/Zirconia: Combined Pulse TG/DTA and MS Study with ^{18}O Labelled Catalyst, C. Müller, M. Maciejewski, R. Köppel, R. Tschan and A. Baiker, *J. Phys. Chem.*, **100** (51), 20006-20014 (1996).
- 320 Oxidation of L-Sorbose with Molecular Oxygen on Pt Modified by Metals, Amines and Phosphines, T. Mallat, Ch. Brönnimann and A. Baiker, *J. Mol. Catal. A: Chemical*, **117**, 425-438 (1997).
- 321 Morphology Analysis of Nickel Thin Films Grown by MOCVD, M. Becht, F. Atamny, A. Baiker, and K.H. Dahmen, *Surf. Sci.*, **371**, 399-408 (1997).
- 322 Density Functional Investigation of the Mechanism of Selective Catalytic Reduction of NO by NH_3 Over Vanadium Oxide Model Clusters, F. Gilardoni, J. Weber and A. Baiker, *Int. J. Quant. Chem.*, **61**, 683-688 (1997).
- 323 Influence of Mass Transfer on Interrelation Between Thermoanalytical and Mass Spectrometric Curves Measured in Combined Thermoanalyser-Mass Spectrometer Systems, B. Roduit, J. Baldyga, M. Maciejewski and A. Baiker, *Thermochim. Acta*, **295**, 59-71 (1997).
- 324 Modification of Supported Pt Catalysts by Preadsorbed Phosphines: Enhanced Selectivity in the Oxidation of L-Sorbose, T. Mallat, C. Brönnimann and A. Baiker, *Appl. Catal. A: General*, **149** (l), 103-112 (1997).

- 325 Titania-Based Aerogels - A Review, M. Schneider and A. Baiker, *Catal. Today*, **35** (3), 339-365 (1997).
- 326 Progress in Asymmetric Heterogeneous Catalysis: Design of Novel Chirally Modified Platinum Metal Catalysts, A. Baiker, *J. Mol. Catal. A: Chemical*, **115** (3), 473-493 (1997).
- 327 Catalytic Reduction of Nitrogen Oxides by Olefins in the Presence of Oxygen over Copper/Alumina. Influence of Copper Loading and Formation of Byproducts, F. Radtke, R. Köppel, E. Minardi and A. Baiker, *J. Catal.*, **167**, 127-141 (1997).
- 328 Metallic Glasses, A. Baiker, in *Handbook of Heterogeneous Catalysis*, (G. Ertl, H. Knözinger and J. Weitkamp, Eds.), Vol. 2, VCH, Weinheim, 1997, pp. 803-814.
- 329 Enantioselective Hydrogenation of Trifluoroacetophenone over Cinchonidine-Modified Platinum, T. Mallat, M. Bodmer and A. Baiker, *Catal. Lett.*, **44**, 95-99 (1997).
- 330 Amination Reactions, T. Mallat and A. Baiker, in *Handbook of Heterogeneous Catalysis*, (G. Ertl, H. Knözinger and J. Weitkamp, Eds.), Vol. 5, VCH, Weinheim, 1997, pp. 2334-2348.
- 331 Vanadia-Silica Mixed Oxides: Influence of Vanadium Precursor, Drying Method and Calcination Temperature on Structural and Chemical Properties, D. Dutoit, M. Schneider, P. Fabrizioli and A. Baiker, *J. Mater. Chem.*, **7**(2), 271-278 (1997).
- 332 Product Induced Corrosion of Pt/Graphite During Catalytic Oxidation of Sorbose Studied by In Situ STM and Cyclic Voltammetry, I. Bakos, T. Mallat and A. Baiker, *Catal. Lett.*, **43**, 201-207 (1997).
- 333 Vanadia-Silica Aerogels. Structure and Catalytic Properties in Selective Reduction of NO by NH₃, D.C.M. Dutoit and A. Baiker, *Appl. Catal. B: Environmental*, **13**, 275-288 (1997).
- 334 Enantioselective Hydrogenation of Ketopantolactone, M. Schürch, O. Schwalm, T. Mallat, J. Weber and A. Baiker, *J. Catal.*, **169**, 275-286 (1997).
- 335 Quantitative Calibration of Mass Spectrometric Curves in Coupled TA-MS System, M. Maciejewski and A. Baiker, *Thermochim. Acta*, **295**, 95-105 (1997).
- 336 Atomic Resolution of Defects in Graphite Studied by STM, A. Atamny, A. Baiker, and R. Schlögl, *Fresenius J. Anal. Chem.*, **358**, 344-348 (1997).
- 337 Combustion of Methane over Palladium/Zirconia Derived from a Glassy Pd-Zr Alloy: Effect of Pd Particle Size on Catalytic Behavior, C. Müller, M. Maciejewski, R. Köppel and A. Baiker, *J. Catal.*, **166**, 36-43 (1997).
- 338 Preparation and Characterization of Thin TiO₂ on Gold Films, J.D. Grunwaldt, U. Göbel and A. Baiker, *Fresenius J. Anal. Chem.*, **358**, 96-100 (1997).

- 339 High Performance Vanadia-Titania Aerogel DeNO_x Catalyst: Catalytic Behavior and Kinetic Modeling, R. Willi, R.A. Köppel and A. Baiker, *Ind. Eng. Chem. Res.*, **36**, 3013-3018 (1997).
- 340 Enantioselective Catalysts and Reactions, A. Baiker and H.U. Blaser, in *Handbook of Heterogeneous Catalysis*, (G. Ertl, H. Knözinger and J. Weitkamp, Eds.), Vol. 5, VCH, Weinheim, 1997, pp. 2422-2436.
- 341 Selective Reduction of NO by NH₃ over Chromia on Titania: Investigation and Modeling of the Kinetic Behavior, R. Willi, M. Maciejewski, U. Göbel, R. A. Köppel and A. Baiker, *J. Catal.*, **166**, 356-367 (1997).
- 342 Dehydrogenation of Methylcyclohexane to Toluene in a Pilot-Scale Membrane Reactor, J. K. Ali and A. Baiker, *Appl. Catal. A: General*, **155**, 41-57 (1997).
- 343 Characterization of Vanadia-Silica and Titania-Silica Aero- and Xerogels by Acid-Base Probe Reactions, A. Molnar, M. Bartok, M. Schneider and A. Baiker, *Catal. Lett.*, **43**, 123-126 (1997).
- 344 Potential of Thermal Analysis in Preparation and Characterization of Solid Catalysts, M. Maciejewski and A. Baiker, *J. Thermal Anal.*, **48**, 611-622 (1997).
- 345 Epoxidation of Cycloalkenones over Amorphous Titania-Silica Aerogels, R. Hutter, T. Mallat and A. Baiker, *Stud. Surf. Sci. Catal.*, **108**, 329-336 (1997).
- 346 Highly Active Ruthenium Complexes with Bidentate Phospine Ligands for the Catalytic Synthesis of N,N-Dimethylformamide and Methyl Formate from Supercritical Carbon Dioxide, O. Kröcher, R.A. Köppel and A. Baiker, *J. Chem. Soc., Chem. Commun.*, 453-454 (1997).
- 347 Nature of Initial Transient Period during Enantioselective Hydrogenation on Pt and Pd, T. Mallat, Z. Bodnar, B. Minder, K. Borszky and A. Baiker, *J. Catal.*, **168**, 183-193 (1997).
- 348 Heterogeneous Coupling of Phenylethyne over Cu-Mg-Al Mixed Oxides. Influence of Catalyst Composition and Calcination Temperature on Structural and Catalytic Properties, S.M. Auer, R. Wandeler, U. Göbel and A. Baiker, *J. Catal.*, **169**, 1-12 (1997).
- 349 Novel Pulse Thermal Analysis and its Potential for Investigating Gas-Solid Reactions, M. Maciejewski, C.A. Müller, R. Tschan, W.D. Emmerich and A. Baiker, *Thermochim. Acta*, **295**, 167-182 (1997).
- 350 Novel Homogeneous and Heterogeneous Catalysts for the Synthesis of Formic Acid Derivatives from Carbon Dioxide, O. Kröcher, R.A. Köppel and A. Baiker, *Chimia*, **51**, 48-51 (1997).
- 351 Palladium Catalyzed Synthesis of Methylamines from Carbon Dioxide, Hydrogen and Ammonia, S.V. Gredig, R. A. Köppel and A. Baiker, *Catal. Lett.*, **46**, 49-55 (1997).

- 352 Amination of Diols and Polyols to Acyclic Amines, A. Fischer, T. Mallat, and A. Baiker, *Catal. Today*, **37**, 167-189 (1997).
- 353 Mechanism of the Vanadium Oxide-Catalyzed Selective Reduction of NO by NH₃. A Quantum Chemical Modeling, F. Gilardoni, J. Weber, and A. Baiker, *J. Phys. Chem.*, **101** (34), 6069-6076 (1997).
- 354 Enantioselective Hydrogenation of α -Ketoamides over Pt/Al₂O₃ Modified by Cinchona Alkaloids, G.Z. Wang, T. Mallat, and A. Baiker, *Tetrahedron: Asymmetry*, **8**, 2133-2140 (1997).
- 355 Enantioselective Hydrogenation of Carbonyl Compounds over Pd-Pt/Alumina Catalysts, T. Mallat, S. Szabo, M. Schürch, U.W. Göbel, and A. Baiker, *Catal. Lett.*, **47**, 221-227 (1997).
- 356 Zirconia Aerogels: Effect of the Use of Mono- and Dicarboxylic Acids as Catalysts in the Sol-Gel Process on Structural Properties of Aerogels, C. Stöcker, and A. Baiker, *J. Sol-Gel Sci. Techn.*, **10**, 269-282 (1997).
- 357 Epoxidation of β -Isophorone over a Titania-Silica Aerogel. Effect of Catalyst Pretreatments with Bases, R. Hutter, T. Mallat, A. Peterhans, and A. Baiker, *J. Catal.*, **172**, 427-435 (1997).
- 358 Partial Oxidation of C4 Hydrocarbons over Vanadia-Silica Mixed Oxide Catalysts, M. D. Wildberger, T. Mallat, and A. Baiker, *Proc. DGMK Conf. C₄ Chemistry - Manufacture and Use of C₄ Hydrocarbons*, (Tagungsbericht 9705), Aachen, 1997, pp. 157-164.
- 359 Enantioselective Hydrogenation of α,β -Unsaturated Acids. Substrate-Modifier Interaction over Cinchonidine Modified Pd/Al₂O₃, K. Borszky, T. Mallat, and A. Baiker, *Tetrahedron Asymmetry*, **8**, 3745-3753 (1997).
- 360 Synthesis of Methylamines from CO₂, H₂ and NH₃. Catalytic Behaviour of Various Metal-Alumina Catalysts, S. Gredig, R. A. Köppel, and A. Baiker, *Appl. Catal. A: General*, **162**, 249-260 (1997).
- 361 Effect of Barium and Cesium Promotors on Copper/Zirconia Methanol Synthesis Catalysts: An FTIR Investigation, J. Weigel, K. Horbaschek, A. Baiker, and A. Wokaun, *Ber. Bunsenges. Phys. Chem.*, **101**, 1097-1104 (1997).
- 362 Effect of the Addition of Chromium- and Manganese Oxides on Structural and Catalytic Properties of Copper/Zirconia Catalysts for the Synthesis of Methanol from Carbon Dioxide, M. Kilo, J. Weigel, A. Wokaun, R. Köppel, A. Stöckli, and A. Baiker, *J. Mol. Catal. A: Chemical*, **126**, 169-184 (1997).
- 363 Synthesis of Methylamines from Carbon Dioxide, Hydrogen and Ammonia over Supported Copper Catalysts. Influence of Support, S.V. Gredig, R. A. Köppel, and A. Baiker, *J. Mol. Catal. A: Chemical*, **127**, 133-142 (1997).

- 364 Zirconia Aerogels: Influence of Acid-to-Alkoxide Ratio, Alcoholic Solvent and Supercritical Drying Method on Structural Properties, C. Stöcker, and A. Baiker, *J. Non Cryst. Solids.*, **223**, 165-178 (1998).
- 365 Influence of Rh- and Ceria Promotion of Automotive Palladium Catalyst on its Catalytic Behavior under Steady-State and Dynamic Operation, S. Tagliaferri, R.A. Köppel, and A. Baiker, *Appl. Catal. B: Environmental*, **15**, 159-177 (1998).
- 366 Design of New Modifiers for the Enantioselective Hydrogenation of Ethyl Pyruvate, M. Schürch, T. Heinz, R. Aeschimann, T. Mallat, A. Pfaltz, and A. Baiker, *J. Catal.*, **173**, 187-195 (1998).
- 367 Concentration Controlling for Recycle and Continuous Stirred Tank Reactors, R. Dümpelmann and A. Baiker, *Computers & Chem. Eng.*, **22**, 215-221 (1998).
- 368 Comparative Study of the Behaviour of Standard Pt/Rh and Newly Developed Pd-Only and Pd/Rh Three-Way Catalysts under Dynamic Operating Conditions, S. Tagliaferri, R.A. Köppel, and A. Baiker, *Stud. Surf. Sci. Catal.*, **116**, 61-71 (1998).
- 369 Titania-Silica Mixed Oxides. Influence of Reaction Additives on the Epoxidation of (*E*)-2-Hexen-1-ol, M. Dusi, T. Mallat, and A. Baiker, *J. Catal.*, **173**, 423-432 (1998).
- 370 Copper- and Silver-Zirconia Aerogels. Structural and Catalytic Properties in Methanol Synthesis from Carbon Dioxide, R.A. Köppel, C. Stöcker, and A. Baiker, *J. Catal.*, **179**, 515-527 (1998).
- 371 Enantioselective Hydrogenation on Chirally Modified Noble Metals. Mechanistic Aspects and Catalyst Design, A. Baiker, in *Supported Reagents and Catalysts in Chemistry*, (B.K. Hodnett, et al., Eds.), Royal Soc. Chem. Special Publication No. 216, 1998, pp. 142-149.
- 372 Aerobic Oxidation of β -Substituted Alcohols over Promoted Pt and Pd Catalysts, T. Mallat, L. Seyler, M. Mir Alai, and A. Baiker, in *Supported Reagents and Catalysts in Chemistry*, (B.K. Hodnett, et al., Eds.), Royal Soc. Chem. Special Publication No. 216, 1998, pp. 66-71.
- 373 Chiral Catalysis on Solids, A. Baiker, *Current Opinion in Solid State & Materials Science*, **3**(1), 86-93 (1998).
- 374 Reactivity of Nitrogen Containing Organic Intermediates in the Selective Catalytic Reduction of NO_x with Organic Compounds. A Model Study with Nitrogen Containing Tertiary Butyl Compounds, A. Obuchi, C. Wögerbauer, R.A. Köppel, and A. Baiker, *Appl. Catal. B: Environmental*, **19**, 9-22 (1998).
- 375 Enantioselective Hydrogenation of Trifluoroacetophenone over Pt/alumina, M. Bodmer, T. Mallat, and A. Baiker, in: *Catalysis of Organic Reactions* (Ed. F.E. Herkes), Marcel Dekker, New York, 1998, p. 75-87.
- 376 Nature of Initial Transient Period During Enantioselective Hydrogenation on Pt and Pd — A Reply, T. Mallat, and A. Baiker, *J. Catal.*, **176**, 271-274 (1998).

- 377 Unusual Redox Properties of Bismuth in Sol-Gel Bi-Mo-Ti Mixed Oxides, J.D. Grunwaldt, M. D. Wildberger, T. Mallat and A. Baiker, *J. Catal.*, **177**, 53-59 (1998).
- 378 Investigation of Carbon Based Catalysts by Scanning Tunneling Microscopy: Opportunities and Limitations, F. Atamny and A. Baiker, *Appl. Catal. A: General*, **173**, 201-230 (1998).
- 379 Silica Hybrid Gel Catalysts Containing Group (VIII) Transition Metal Complexes: Preparation, Structural and Catalytic Properties in the Synthesis of N,N-Dimethylformamide and Methyl Formate from Supercritical Carbon Dioxide, O. Kröcher, R.A. Köppel M. Fröba, and A. Baiker, *J. Catal.*, **178**, 284-298 (1998).
- 380 Oxidation of Butane and Butadiene to Furan over Vanadia-Silica Mixed Oxides, M. Wildberger, T. Mallat, U. Göbel and A. Baiker, *Appl. Catal. A: General*, **168**, 69-80 (1998).
- 381 Enantioselective Hydrogenation of a Cyclic Imidoketone over Chirally Modified Pt/Al₂O₃, N. Künzle, A. Szabo, G. Wang, M. Schürch, T. Mallat, and A. Baiker, *J. Chem. Soc., Chem. Commun.*, 1377-1378 (1998).
- 382 Enantioselective Hydrogenation of Ketopantolactone: Effect of Stereospecific Product Crystallization During Reaction, M. Schürch, N. Künzle, T. Mallat and A. Baiker, *J. Catal.*, **176**, 569-571 (1998).
- 383 Catalytic Materials by Design, A. Baiker, J.D. Grunwaldt, C. Müller, and L. Schmid, *Chimia*, **52**, 517-524 (1998).
- 384 Selective Epoxidation of Allylic Alcohols with a Titania-Silica Aerogel, M. Dusi, T. Mallat and A. Baiker, *Proc. DGMK Conf. Selective Oxidations in Petrochemistry*, (DGMK-Tagungsbericht 9803), Hamburg, 1998, pp. 147-153.
- 385 Comparison of the Redox Activities of Sol-Gel and Conventionally Prepared Bi-Mo-Ti Mixed Oxides, T. Mallat, M. Wildberger, J.-D. Grunwaldt and A. Baiker, *Proc. DGMK Conf. Selective Oxidations in Petrochemistry*, (DGMK-Tagungsbericht 9803), Hamburg, 1998, pp. 103-110.
- 386 Pulse Thermal Analysis, M. Maciejewski, A. Baiker, W.D. Emmerich, and Ph. Jamin, *G.I.T. Laboratory Journal*, **2**, 99-105 (1998).
- 387 3-D Modelling of Selective Catalytic Reduction of NO_x by NH₃ on a Vanadia Based Honeycomb Catalyst, B. Roduit, A. Baiker, F. Bettoni, J. Baldyga, and A. Wokaun, *AICHE J.*, **44**, 2731-2744 (1998).
- 388 Global Kinetic Modelling of Reactions Occurring During the Selective Catalytic Reduction of NO by NH₃ on a Vanadia Based Catalyst, B. Roduit, A. Wokaun and A. Baiker, *Ind. Eng. Chem. Res.*, **37**, 4577-4590 (1998).

- 389 Conformational Behaviour of Cinchonidine in Different Solvents: A Combined NMR and Ab Initio Investigation, T. Bürgi and A. Baiker, *J. Am. Chem. Soc.*, **120**, 12920-12926 (1998).
- 390 Sol-Gel Bismuth-Molybdenum-Titanium Mixed Oxides. I. Preparation and Structural Properties, M.D. Wildberger, J. Grunwaldt, M. Maciejewski, T. Mallat and A. Baiker, *Appl. Catal.. A: General*, **175**, 11-19 (1998).
- 391 Combustion of Methane over Palladium/Zirconia: Effect of Pd-Particle Size and Role of Lattice Oxygen, C.A. Müller, M. Maciejewski, R.A. Köppel and A. Baiker, *Catal. Today*, **47**, 245-252 (1999).
- 392 Catalyst Potential Measurements: A Valuable Tool for Understanding and Controlling Liquid Phase Redox Reactions, T. Mallat and A. Baiker, *Top. Catal.*, **8**, 115-124 (1999).
- 393 Sol-Gel Bismuth-Molybdenum-Titanium Mixed Oxides: II. Oxidation of Butadiene to Furan, M.D. Wildberger, J. Grunwaldt, M. Maciejewski, T. Mallat and A. Baiker, *Appl. Catal.. A: General.*, **179**, 189-202 (1999).
- 394 Enantioselective Hydrogenation of Pyrrolidine-2,3,5-triones over the Pt-Cinchona System, A. Szabo, N. Künzle, T. Mallat and A. Baiker, *Tetrahedron Asymmetry*, **10**, 61-76 (1999).
- 395 Novel Amine-Modified $\text{TiO}_2\text{-SiO}_2$ Aerogel for the Epoxidation of Sensitive Cyclohexenols, M. Dusi, C.A. Müller, T. Mallat and A. Baiker, *J. Chem. Soc., Chem. Commun.*, 197-198 (1999).
- 396 Supercritical Fluids in Heterogeneous Catalysis, A. Baiker, *Chem. Rev.*, **99** (2), 453-473 (1999).
- 397 Pulse Thermal Analysis: A New Range of Opportunities, M. Maciejewski, W.D. Emmerich and A. Baiker, *Thermochim. Acta*, **56**, 627-637 (1999).
- 398 Preparation of Supported Gold Catalysts for Low Temperature CO Oxidation via Size-Controlled Gold Colloids, J.D. Grunwaldt, Ch. Kiener, C. Wögerbauer and A. Baiker, *J. Catal.*, **181**, 223-232 (1999).
- 399 Gold/Titania Interfaces and Their Role in Carbon Monoxide Oxidation. J.D. Grunwaldt and A. Baiker, *J. Phys. Chem. B*, **103** (6), 1002-1012 (1999).
- 400 Catalytic Conversion of Carbon Dioxide to Valuable Chemicals, A. Baiker, in *Greenhouse Gas Control Technologies*, (Eds. B. Riemer, B. Elliason, A. Wokaun), Elsevier Science, 1999, pp. 391-396.
- 401 Catalytic Synthesis of 1,4-Diaminocyclohexane in Supercritical Ammonia, A. Fischer, T. Mallat, and A. Baiker, *J. Catal.*, **182**, 289-291 (1999).
- 402 Continuous Amination of Propandiols in Supercritical Ammonia, A. Fischer, T. Mallat and A. Baiker, *Angew. Chem. Int. Ed.*, **38**, 351-354 (1999).

- 403 Organically Modified Titania-Silica Aerogels for the Epoxidation of Olefins and Allylic Alcohols, C.A. Müller, M. Maciejewski, T. Mallat, and A. Baiker, *J. Catal.*, **184**, 280-293 (1999).
- 404 Platinum Particles Supported on Carbon: Potential and Limitations of Characterization by STM, A. Atamny and A. Baiker, *Surface and Interface Analysis*, **27**, 512-516 (1999).
- 405 Cobalt-Catalyzed Amination of 1,3-Propanediol. Effects of Catalyst Promotion and Use of Supercritical Ammonia as Solvent and Reactant, A. Fischer, M. Maciejewski, T. Bürgi, T. Mallat, and A. Baiker, *J. Catal.*, **183**, 373-383 (1999).
- 406 Enantioselective Hydrogenation Over Chirally Modified Platinum. New Insight Into the Adsorption Mode of the Modifier, T. Bürgi, Zhou-Hui Zhou, N. Künzle, T. Mallat and A. Baiker, *J. Catal.*, **183**, 405-408 (1999).
- 407 Silica Hybrid Catalysts Containing Ruthenium Complexes: Influence of Reaction Parameters on the Catalytic Behaviour in the Synthesis of N,N,-Dimethylformamide from Carbon Dioxide, O. Kröcher, R. A. Köppel and A. Baiker, *J. Mol. Catal. A: Chemical.*, **140**, 185-193 (1999).
- 408 Reduction of 4-Nitrotoluene over Fe-Mg-Al Lamellar Double Hydroxides, S.M. Auer, J.D. Grunwaldt, R. Köppel and A. Baiker, *J. Mol. Catal. A: Chemical*, **139**, 305-313 (1999).
- 409 Behavior of Non-Promoted and Ceria-Promoted Pt-Rh and Pd-Rh Three-Way Catalysts under Steady-State and Dynamic Operation of Hybrid Vehicles, S. Tagliaferri, R.A. Köppel and A. Baiker, *Ind. Eng. Chem. Res.*, **38**, 108-117 (1999).
- 410 Control of Acidity and Selectivity of Titania-Silica Aerogel for the Epoxidation of α -Isophorone, R. Hutter, T. Mallat, A. Peterhans and A. Baiker, *J. Mol. Catal. A: Chemical*, **138**, 241-247 (1999).
- 411 Chemo- and Diastereoselective Epoxidation of Allylic Alcohols with a Titania-Silica Aerogel, M. Dusi, T. Mallat and A. Baiker, *J. Mol. Catal. A: Chemical*, **138**, 15-23 (1999).
- 412 Conversion of CCl_2F_2 (CFC-12) in the Presence and Absence of H_2 on Sol-Gel Derived Pd/ Al_2O_3 Catalysts, M. Oecal, M. Maciejewski and A. Baiker, *Appl. Catal. B: Environmental*, **21**, 279-289 (1999).
- 413 Palladium Catalyzed Enantioselective Hydrogenation of Alkenoic Acids. Role of Isomerization, K. Borszky, T. Mallat and A. Baiker, *Catal. Lett.*, **59**, 95-97 (1999).
- 414 SCR of NO by NH_3 over TiO_2 -Supported $\text{V}_2\text{O}_5\text{-MoO}_3$ Catalysts: Reactivity and Redox Behavior, L. Casagrande, L. Lietti, I. Nova, P. Forzatti and A. Baiker, *Appl. Catal. B: Environmental*, **22**, 63-77 (1999).

- 415 Enantioselective Hydrogenation of α,β -Unsaturated Carboxylic Acids over Cinchona-Modified Palladium: Nature of Modifier-Reactant Interaction, K. Borszky, T. Bürgi, Z. Zhaoxi, T. Mallat and A. Baiker, *J. Catal.*, **187**, 160-166 (1999).
- 416 Synthesis of Methylamines from CO₂ and NH₃ over Cu-Mg-Al Mixed Oxides, S.M. Auer, S. Gredig, R.A. Köppel and A. Baiker, *J. Mol. Catal. A: Chemical*, **141**, 193-203 (1999).
- 417 Molecular Interaction between Cinchonidine and Acetic Acid Studied by NMR, FTIR and *ab initio* Methods, D. Ferri, T. Bürgi and A. Baiker, *Perkin Trans. 2*, **7**, 1305-1311 (1999).
- 418 Vanadia Grafted on TiO₂, SiO₂ and TiO₂-SiO₂ Aerogels. Structural Properties and Catalytic Behaviour in Selective Catalytic Reduction of Nitric Oxide, M. A. Reiche, E. Ortelli, and A. Baiker, *Appl. Catal. B: Environmental*, **23**, 187-203 (1999).
- 419 In-Situ Monitoring of Heterogeneous Catalytic Reactions under Supercritical Conditions, R. Wandeler and A. Baiker, *Chimia*, **53**, 566-569 (1999).
- 420 Comparative Study of Au/TiO₂ and Au/ZrO₂ Catalysts for Low Temperature CO Oxidation, J.D. Grunwaldt, M. Maciejewski, O. Becker, P. Fabrizioli and A. Baiker, *J. Catal.*, **186**, 458-469 (1999).
- 421 Role of Amine Modifiers in the Epoxidation of Allylic Alcohols with a TiO₂-SiO₂ Aerogel, M. Dusi, T. Mallat and A. Baiker, *J. Catal.*, **187**, 191-201 (1999).
- 422 Cobalt-Catalyzed Amination of 1,3-Cyclohexanediol and 2,4-Pentandiol in Supercritical Ammonia, G. Jenzer, T. Mallat and A. Baiker, *Catal. Lett.*, **61**, 111-114 (1999).
- 423 Unprecedented Selectivity Behaviour in the Hydrogenation of an α,β -Unsaturated Ketone: Hydrogenation of Ketoisophorone over Alumina-Supported Pt and Pd, M. von Arx, T. Mallat, and A. Baiker, *J. Mol. Catal. A: Chemical*, **148**, 275-283 (1999).
- 424 Nickel-Catalyzed Amination of 1,3-Propandiols Differently Substituted at C2-Position: Influence of Reactant Structure on Diamine Production, A. Fischer, T. Mallat, and A. Baiker, *J. Mol. Catal. A: Chemical*, **149**, 197-204 (1999).
- 425 Continuous Enantioselective Hydrogenation of Activated Ketones, N. Künzle, R. Hess, T. Mallat and A. Baiker, *J. Catal.*, **186**, 239-241 (1999).
- 426 Diastereoselective Hydrogenation of Indenols: Evidence for Sterically and Electronically Unfavourable Adsorption on Palladium, K. Borszky, T. Mallat and A. Baiker, *J. Catal.*, **188**, 413-416 (1999).
- 427 Metallic Glasses, A. Baiker, in *Preparation of Solid Catalysts*, (G. Ertl, H. Knözinger and J. Weitkamp, Eds.), Wiley-VCH, Weinheim, 1999, pp. 43-56.

- 428 A Mesoporous Ruthenium-Silica Hybrid Aerogel with Outstanding Catalytic Properties in the Synthesis of N,N-Diethylformamide from CO₂, H₂ and Diethylamine, L. Schmid, M. Rohr and A. Baiker, *Chem. Commun.*, **21**, 2303-2304 (1999).
- 429 Restructuring during Pretreatment of Platinum/Alumina for Enantioselective Hydrogenation, T. Mallat, S. Frauchiger, P. Kooyman, M. Schürch and A. Baiker, *Catal. Lett.*, **63**, 121-126 (1999).
- 430 CO₂ Hydrogenation over Metal/Zirconia Catalysts, J. Wambach, A. Wokaun and A. Baiker, *Phys. Chem. Chem. Phys.*, **1**, 5071-5080 (1999).
- 431 Asymmetric Hydrogenation of Indene Carboxylic Acids: Stereochemistry of Hydrogen Addition, K. Borszky, T. Mallat and A. Baiker, *Tetrahedron Asymmetry*, **10** (24), (1999).
- 432 Silica Xerogels Containing Mono- and Bidentate Phosphine Ruthenium Complexes. Textural Properties and Catalytic Behaviour in the Synthesis of Formic Acid Derivatives, L. Schmid, O. Kröcher, R.A. Köppel and A. Baiker, *Micro- Mesoporous Mater.*, **35/36**, 181-193 (2000).
- 433 Titania-Silica Epoxidation Catalysts Modified by Polar Organic Functional Groups, C.A. Müller, M. Schneider, T. Mallat, and A. Baiker, *J. Catal.*, **189**, 221-232 (2000).
- 434 Selective Epoxidation of Allylic Alcohols with Amine-Modified Titania-Silica Aerogels, M. Dusi, C. Beck, T. Mallat and A. Baiker, in: *Catalysis of Organic Reactions* (Ed. M.E. Ford), Marcel Dekker, New York, 2000, pp. 315-324.
- 435 Organically Modified Titania-Silica Aerogels for Epoxidation of Cyclohexenol, A. Gisler, C.A. Müller, M. Schneider, T. Mallat and A. Baiker, *Stud. Surf. Sci. Catal.*, **130**, 1637-1642 (2000).
- 436 Epoxidation of Functionalized Olefins over Solid Catalysts, M. Dusi, T. Mallat and A. Baiker, *Catal. Rev.-Sci. Eng.* **42**, 213-278 (2000).
- 437 On the STM Imaging Mechanism of Monoatomic Steps in Graphite, F. Atamny, T. Fässler, A. Baiker and R. Schlögl, *Appl. Phys. A.*, **71**, 441-447 (2000).
- 438 Allylic Oxofunctionalization of Cyclic Olefins with Homogeneous and Heterogeneous Catalysts, E.F. Murphy, T. Mallat and A. Baiker, *Catal. Today*, **57**, 115-126 (2000).
- 439 Titania-Silica Epoxidation Catalysts Modified by Acetoxypropyl Groups, C.A. Müller, M. Schneider, A. Gisler, T. Mallat and A. Baiker, *Catal. Lett.*, **64**, 9-14 (2000).
- 440 Adsorption Mode of Ethyl Pyruvate on Platinum. An In-Situ XANES Study, T. Bürgi, F. Atamny, A. Knop-Gericke, M. Hävecker, T. Schedel-Niedrig, R. Schlögl, and A. Baiker, *Catal. Lett.*, **66**, 109-112 (2000).

- 441 Vanadia and Tungsta Grafted on TiO₂. Influence of the Grafting Sequence on the Structural and Chemical Properties, M.A. Reiche, T. Bürgi, A. Baiker, A. Scholz, B. Schnyder, and A. Wokaun, *Appl. Catal. A: General.*, **198**, 155-169 (2000).
- 442 Highly Efficient Synthesis of N,N-Dialkylformamides from Carbon Dioxide and Dialkylamines over Ruthenium-Silica Hybrid Gels, L. Schmid and A. Baiker, *Stud. Surf. Sci. Catal.*, **130**, 557-562 (2000).
- 443 Design of New Chiral Modifiers for Heterogeneous Enantioselective Hydrogenation. A Combined Experimental and Theoretical Approach, A. Baiker, in: *Chiral Catalyst Immobilization and Recycling*, (Eds. D.E. de Vos, I.F.J. Vankelecom, P.A. Jacobs), Ch. 7, Wiley-VCH, 2000, pp. 155-171.
- 444 Hydrophobic Titania-Silica Aerogels: Epoxidation of C=C Double Bonds, C. A. Müller, A. Gisler, M. Schneider, T. Mallat and A. Baiker, *Top. Catal.*, **11/12**, 369-378 (2000).
- 445 Monitoring of the Gas Phase Composition: A Prerequisite for Unravelling the Mechanism of Decomposition of Solids: Thermal Decomposition of Cobalt Oxalate Dihydrate, M. Maciejewski, E. Inger-Stocka, W.D. Emmerich and A. Baiker, *J. Thermal Anal. & Calorimetry*, **60**, 735-758 (2000).
- 446 Catalytic Gas Phase Oxidation of Isophorone to Ketoisophorone, E.F. Murphy, T. Mallat, A. Baiker and M. Schneider, *Appl. Catal. A: General*, **197**, 295-301 (2000).
- 447 Effect of Grafting Sequence on Behavior of Titania Supported V₂O₅-WO₃ Catalysts in the Selective Reduction of NO by NH₃, M. A. Reiche, A. Baiker and P. Hug, *J. Catal.*, **192**, 400-411 (2000).
- 448 EUROCAT Oxide: An European V₂O₅-WO₃/TiO₂ SCR Standard Catalyst Study: Characterization by Temperature Programmed Reduction, M. Reiche, M. Maciejewski, and A. Baiker, *Catal. Today*, **56**, 347-355 (2000).
- 449 Conformational Isomerism of α -Ketoesters. A FTIR and Ab Initio Study, D. Ferri, T. Bürgi and A. Baiker, *Perkin Trans. 2*, **2**, 221-227 (2000).
- 450 Amine-Modified Titania-Silica Hybrid Gels as Epoxidation Catalysts, C.A. Müller, M. Schneider, T. Mallat and A. Baiker, *Appl. Catal. A: General*, **201/2**, 253-261 (2000).
- 451 First Enantioselective Hydrogenation of Trifluoro- β -ketoester with Cinchona Modified Platinum, M. von Arx, T. Mallat and A. Baiker, *J. Catal.*, **193**, 161-164 (2000).
- 452 Potential of Carbon Dioxide Utilization in Heterogeneous Catalytic Synthesis, A. Baiker, *Appl. Organometal. Chem.* **14**, 751-762 (2000).
- 453 Epoxidation of α -Isophorone on Amine Modified Titania-Silica: Evidence for Ti-Amine Interaction, C.A. Müller, M. Schneider, T. Mallat and A. Baiker, *J. Catal.*, **192**, 448-451 (2000).

- 454 Adsorption of Ethyl Pyruvate on Pt(111) Studied by XPS and UPS, T. Bürgi, F. Atamny, R. Schlögl and A. Baiker, *J. Phys. Chem. B*, **104**, 5953-5960 (2000).
- 455 Enhanced Enantioselectivity in Ethyl Pyruvate Hydrogenation Due to Competing Enantioselective Aldol Reaction Catalyzed by Cinchonidine, D. Ferri, T. Bürgi, K. Borszky, T. Mallat and A. Baiker, *J. Catal.*, **193**, 139-144 (2000).
- 456 Transition State Analogues – A Guide for the Rational Design of Enantioselective Heterogeneous Hydrogenation Catalysts, A. Baiker, *J. Mol. Catal. A: Chemical*, **163**, 205-220 (2000).
- 457 Selectivity Enhancement in Heterogeneous Catalysis Induced by Reaction Modifiers, T. Mallat and A. Baiker, *Appl. Catal. A: General*, **200**, 3-22 (2000).
- 458 Gas Adsorption Studied by Pulse Thermal Analysis, F. Eigenmann, M. Maciejewski and A. Baiker, *Thermochim. Acta*, **359**, 131-141 (2000).
- 459 Relations Between Structural/Morphological Modifications and Oxygen Storage-Redox Behavior of Silica-Doped Ceria, E. Rocchini, A. Trovarelli, J. Llorca, G.W. Graham, W.H. Weber, M. Maciejewski and A. Baiker, *J. Catal.*, **194**, 461-478 (2000).
- 460 Oxidation-Isomerization of an Olefin to Allylic Alcohol Using Titania-Silica and a Base Co-Catalyst, C. Beck, T. Mallat and A. Baiker, *J. Catal.*, **195**, 79-87 (2000).
- 461 Potential and Limitation of Palladium-Cinchona Catalyst for the Enantioselective Hydrogenation of a Hydroxymethylpyrone, W.R. Huck, T. Mallat and A. Baiker, *J. Catal.*, **193**, 1-4 (2000).
- 462 Model for Enantioselective Hydrogenation of α -Ketoesters over Chirally Modified Platinum Revisited: Influence of α -Ketoester Conformation, T. Bürgi and A. Baiker, *J. Catal.*, **194**, 445-451 (2000).
- 463 Platinum-Catalysed Enantioselective Hydrogenation of α -Ketoester. An Unprecedented Surface Reaction of Methyl Pyruvate, J. Bonello, R.M. Lambert, N. Kunzle and A. Baiker, *J. Am. Chem. Soc.*, **122**, 9864-9865 (2000).
- 464 Process Control – Investigation of Catalytic Reaction in Supercritical Fluids Using a Computer-Based Approach, R. Wandeler and A. Baiker; in: *Virtuelle Instrumente in der Praxis 2000 – Automation*, (Eds. R. Jamal, R. Heinze), VDE – Verlag, Berlin, 2000, p.p. 75-83.
- 465 Vanadia-Chromia Grafted on Titania: Structural and Catalytic Properties in the Selective Catalytic Reduction of NO by NH₃, K. Köhler, J. Engweiler, and A. Baiker, *J. Mol. Catal. A*, **162**, 423-430 (2000).
- 466 Transient Behavior of the Enantioselective Hydrogenation of a Hydroxymethylpyrone, W.R. Huck, T. Mallat and A. Baiker, *Catal. Lett.*, **69**, 129-132 (2000).

- 467 Partial Oxidation of Alcohols in Supercritical Carbon Dioxide, G. Jenzer, D. Sueur, T. Mallat and A. Baiker, *Chem. Commun.*, **22**, 2247-2248 (2000).
- 468 Metal-Catalyzed Amination of Alcohols, T. Mallat and A. Baiker, in *Fine Chemicals through Heterogeneous Catalysis*, (Eds. R.A. Sheldon, H. van Bekkum), Ch., Wiley-VCH, 2001, pp. 247-256.
- 469 Enantioselective Hydrogenation with Solid Catalysts, T. Mallat and A. Baiker, in *Fine Chemicals through Heterogeneous Catalysis*, (Eds. R.A. Sheldon, H. van Bekkum), Ch. 8, Wiley-VCH, 2001, pp. 449-460.
- 470 Flame Aerosol Synthesis of Vanadia-Titania Nanoparticles: Structural and Catalytic Properties in the Selective Catalytic Reduction of NO by NH₃, W. J. Stark, K. Wegner, S. E. Pratsinis, and A. Baiker, *J. Catal.*, **197**, 182-191 (2001)
- 471 Continuous Epoxidation of Propylene with Oxygen and Hydrogen on a Pd-Pt/TS-1 Catalyst, G. Jenzer, T. Mallat, M. Maciejewski, F. Eigenmann and A. Baiker, *Appl. Catal. A: General*, **208**, 125-133 (2001).
- 472 Enhanced Catalytic Activity and Selectivity in Oxidation of α -Isophorone to Ketoisophorone with Phosphomolybdic Acid, E.F. Murphy, T. Mallat, M. Schneider and A. Baiker, *Synthesis*, **4**, 547-549 (2001).
- 473 Non-Destructive Sol-Gel Immobilization of Metal(salen) Catalysts in Silica Aerogels and Xerogels, E.F. Murphy, L. Schmid, T. Bürgi, M. Maciejewski, A. Baiker D. Günther, and M. Schneider, *Chem. Mater.*, **13**, 1296-1304 (2001).
- 474 Titania-Silica Epoxidation Catalysts Modified by Mono- and Bidentate Organic Groups, A. Gisler, C.A. Müller, M. Schneider, T. Mallat and A. Baiker, *Top. Catal.*, **15**, 247-255 (2001).
- 475 Pt and Pt/Al₂O₃ Thin Films for Investigation of Catalytic Solid-Liquid Interfaces by ATR-IR Spectroscopy: CO Adsorption, H₂-Induced Reconstruction and Surface Enhanced Absorption, D. Ferri, T. Bürgi and A. Baiker, *J. Phys. Chem. B.*, **105**, 3187-3195 (2001).
- 476 Model of Reactant-Modifier Interaction in Enantioselective Hydrogenation of Ethyl Pyruvate on Platinum-Cinchona Catalyst: Extension to Synthetic Chiral Modifiers, A. Vargas, T. Bürgi and A. Baiker, *J. Catal.*, **197**, 378-384 (2001).
- 477 Reactive Sites in Isophorone Isomers: H/D-Exchange Studies and Quantum Theoretical Predictions, E.F. Murphy, T. Bürgi and A. Baiker, *Helv. Chim. Acta*, **84**, 2884-2894 (2001).
- 478 Supercritical Fluids – Opportunities in Heterogeneous Catalysis, R. Wandeler and A. Baiker, *CATTECH*, **4**, 128-143 (2001)
- 479 Palladium-Catalyzed Oxidation of Octyl Alcohols in Supercritical Carbon Dioxide, G. Jenzer, M. Schneider, R. Wandeler, T. Mallat and A. Baiker, *J. Catal.*, **199**, 141-148 (2001).

- 480 Structural Properties and Catalytic Behaviour of Iridium Black in the Selective Reduction of NO by Hydrocarbons, C. Wögerbauer, M. Maciejewski, A. Baiker, U. Göbel *J. Catal.*, **201**, 113-127 (2001).
- 481 Continuous Platinum-Catalyzed Enantioselective Hydrogenation in Supercritical Solvents, R. Wandeler, N. Künzle, M.S. Schneider, T. Mallat, and A. Baiker, *Chem. Commun.*, **7**, 673-674 (2001).
- 482 Heterogeneous Enantioselective Hydrogenation of Trifluoromethyl Ketones, M. von Arx, T. Mallat and A. Baiker; in *Supported Catalysts and Their Applications* (Eds. D.C. Sherrington, A.P. Kybett), *Royal Soc. Chem. Special Publication No. 266*, Cambridge, 2001, p. 237.
- 483 STM Image Contrast of Monolayer Platinum on Graphite, F. Atamny, T. Bürgi, R. Schlögl and A. Baiker, *Surf. Sci.*, **475**, 140-148 (2001).
- 484 Iridium/H-ZSM-5 Catalysts for the Selective Reduction of NO_x with Hydrocarbons, C. Wögerbauer, M. Maciejewski, A. Baiker and U. Göbel, *Top. Catal.*, **16/17**, 181-186 (2001).
- 485 Continuous Enantioselective Hydrogenation of Ethyl Pyruvate in Supercritical Ethane: Role of Phase Behavior in the Interpretation of Catalytic Performance, R. Wandeler, N. Künzle, M.S. Schneider, T. Mallat and A. Baiker, *J. Catal.*, **200**, 377-388 (2001).
- 486 Solvent-free Ruthenium Catalysed Vinylcarbamate Synthesis from Phenylacetylene and Dimethylamine in Supercritical Carbon Dioxide, M. Rohr, C. Geyer, E.F. Murphy, R. Wandeler, M.S. Schneider and A. Baiker, *Green Chemistry*, **3**, 123-125 (2001).
- 487 Continuous Oxidation of Benzyl Alcohol in Supercritical Carbon Dioxide, G. Jenzer, T. Mallat and A. Baiker, *Catal. Lett.*, **73**, 5-8 (2001).
- 488 Continuous Semihydrogenation of Phenylacetylene over Amorphous Pd₈₁Si₁₉ Alloy in Supercritical Carbon Dioxide: Relation between Catalytic Performance and Phase Behavior, R. Tschan, M. Schubert, R. Wandeler, M.S. Schneider, and A. Baiker, *J. Catal.*, **204**, 219-229 (2001).
- 489 Asymmetric Hydrogenation of 4-Hydroxy-6-methyl-2-pyrone: Role of Acid-Base Interactions in the Mechanism of Enantiodifferentiation, W.R. Huck, T. Bürgi, T. Mallat and A. Baiker, *J. Catal.*, **200**, 171-180 (2001).
- 490 Effect of Sodium on the Catalytic Properties of Iridium Black in Selective Reduction of NO_x by Propene under Lean Burn Conditions, C. Wögerbauer, M. Maciejewski, M.M. Schubert, and A. Baiker, *Catal. Lett.*, **74**, 1-7 (2001).
- 491 Reduction of Nitrogen Oxides over Unsupported Iridium: Effect of Reducing Agent, C. Wögerbauer, M. Maciejewski and A. Baiker, *Appl. Catal B: Environmental*, **34**, 11-27 (2001).

- 492 Inversion of Enantioselectivity During the Platinum-Catalyzed Hydrogenation of an Activated Ketone, M von Arx, T. Mallat and A. Baiker, *Angew. Chem. Int. Ed.*, **40**, 2302-2305 (2001).
- 493 Supported Gold Catalysts for CO Oxidation: Effect of Calcination on Structure, Adsorption and Catalytic Behaviour, M. Maciejewski, P. Fabrizioli, J.D. Grunwaldt, O.S. Becker and A. Baiker, *Phys. Chem., Chem. Phys.* **3**, 3846-3855 (2001).
- 494 Continuous Semihydrogenation of a Propargylic Alcohol over Amorphous $Pd_{81}Si_{19}$ in Supercritical Carbon Dioxide: Effect of Organic Modifiers, R. Tschan, M.M. Schubert, A. Baiker, W. Bonrath and H. Lansink-Rotgerink, *Catal. Lett.*, **75**, 31-36 (2001).
- 495 Chiral Modification of Platinum Catalysts by Cinchonidine Adsorption Studied by ATR-IR Spectroscopy, D. Ferri, T. Bürgi and A. Baiker, *Chem. Commun.* 1172-1173 (2001).
- 496 Evidence for a New Reaction Pathway in the Enantioselective Hydrogenation of Activated Ketones on Cinchona-Modified Platinum, M. von Arx, T. Mallat and A. Baiker, *J.Catal.* **202**, 169-176 (2001).
- 497 Selective Transfer Dehydrogenation of Aromatic Alcohols, C. Keresszegi, T. Mallat, and A. Baiker, *New. J. Chem.*, **25**, 1163-1167 (2001).
- 498 Umkehrung der Enantioselektivität während der Hydrierung eines aktivierten Ketons auf chiral modifiziertem Platin, M. von Arx, T. Mallat and A. Baiker, *Angew. Chem.*, **113**, 2369-2372 (2001).
- 499 On the Limited Selectivity of Silica-Based Epoxidation Catalysts, C. Beck, T. Mallat and A. Baiker, *Catal. Lett.*, **75**, 131-136 (2001).
- 500 Nature of Active Sites in Sol-Gel TiO_2 - SiO_2 Epoxidation Catalysts, C. Beck, T. Mallat, T. Bürgi, and A. Baiker, *J. Catal.*, **204**, 428-439 (2001).
- 501 Flame Made Titania/Silica Epoxidation Catalysts, W. J. Stark, S.E. Pratsinis and A. Baiker, *J. Catal.*, **203**, 516-524 (2001).
- 502 Heterogeneous Catalysis – An Interdisciplinary Approach, A. Baiker, *Chimia*, **55**, 796-800 (2001).
- 503 Platinum-Catalyzed Enantioselective Hydrogenation of Aryl-Substituted Trifluoroaceto-phenones, M. von Arx, T. Mallat and A. Baiker, *Tetrahedron Asymmetry*, **12** (22), 3089-3094 (2001).
- 504 Oxidation of Methanol to Formaldehyde Catalyzed by V_2O_5 : A Density Functional Theory Study, P. Boulet, A. Baiker, H. Chermette, J. Weber and F. Gilardoni, *J. Phys. Chem. B*, **106**, 9659-9667 (2002).

- 505 Advances in Homogeneous and Heterogeneous Catalytic Aerobic Oxidation of Isophorone to Ketoisophorone, E.F. Murphy and A. Baiker, *J. Mol. Catal. A: Chemical*, **179**, 233-241 (2002).
- 506 Asymmetric Enantioselective Hydrogenation of Activated Ketones on Platinum: Relevant and Spectator Species, M. von Arx, T. Mallat and A. Baiker, *Topics in Catalysis*, **19**, 75-87 (2002).
- 507 Heterogeneous Enantioselective Hydrogenation of 2-Pyrone over Cinchona-Modified Palladium, W.R. Huck, T. Mallat and A. Baiker, *New J. Chem.*, **26**, 6-8 (2002).
- 508 Enantioselective Hydrogenation on Cinchona-Modified Metal Catalysts: Mechanistic Implication of Acid Additive, W.R. Huck, T. Bürgi, T. Mallat and A. Baiker, *J. Catal.*, **205**, 213-216 (2002).
- 509 Synthesis, Structural and Chemical Properties of Iron Oxide-Silica Aerogels, P. Fabrizioli, T. Bürgi, S. van Doorslaer, and A. Baiker, *J. Mater. Chem.*, **12**, 619-630 (2002).
- 510 Environmental Catalysis on Iron Oxide-Silica Aerogels: Selective Oxidation of NH₃ and Reduction of NO by NH₃, P. Fabrizioli, T. Bürgi, and A. Baiker, *J. Catal.*, **206**, 143-154 (2002).
- 511 Enantioselective Hydrogenation over Cinchona-Modified Pt: The Special Role of Carboxylic Acids , M. von Arx, T. Bürgi, T. Mallat and A. Baiker, *Chem. Eur. J.*, **8**, 1430-1437 (2002).
- 512 Flame-made Titania/Silica Epoxidation Catalysts: Toward Large Scale Production, W.J. Stark, H. Kammler, R. Strobel, D. Günther, S.E. Pratsinis and A. Baiker, *Ind. Eng. Chem Res.*, **41**, 4921-4927 (2002).
- 513 FTIR Study of Chiral Modifier—Reactant Interaction The Cinchonidine—Alkenoic Acid System, D. Ferri, T. Bürgi and A. Baiker, *J. Chem. Soc., Perkin Trans. 2*, **3**, 437-441 (2002).
- 514 Enantioselective Hydrogenation of a Methoxypyrrone with Cinchona-Modified Palladium, W.R. Huck, T. Mallat and A. Baiker, *Catal. Lett.*, **80**, 87-92 (2002).
- 515 Relation between the Electronic Structure of α -Substituted Ketones and their Reactivity in Platinum-Catalyzed Racemic and Enantioselective Hydrogenation, A. Vargas, T. Bürgi and A. Baiker, *J. Catal.*, **209**, 489-500 (2002).
- 516 Probing Boundary Sites on a Pt/Al₂O₃ Model Catalyst by CO₂ Hydrogenation and *In Situ* ATR-IR Spectroscopy of Catalytic Solid-Liquid Interfaces, D. Ferri, T. Bürgi and A. Baiker, *Phys. Chem. Chem. Phys.*, **4**, 2667-2672 (2002).
- 517 Stucture Sensitivity of NO Reduction over Iridium Catalysts in HC-SCR, C. Wögerbauer, M. Maciejewski and A. Baiker, *J. Catal.*, **205**, 157-167 (2002).

- 518 Continuous Semihydrogenation of a Propargylic Alcohol over Amorphous Pd₈₁Si₁₉ in Supercritical Carbon Dioxide: Relation between Catalytic Performance and Phase Behavior, R. Tschan, R. Wandeler, M. Schneider, M.M. Schubert, A. Baiker, *Appl. Catal. A*, **223**, 173-185 (2002).
- 519 Highly Efficient Platinum-Catalyzed Hydrogenation of Trifluoroacetoacetates in Acidic Solvents, M. von Arx, T. Mallat and A. Baiker, *Catal. Lett.*, **78**, 267-271 (2002).
- 520 New Mesoporous Hybrid Material: Porphyrine-Doped Aerogel as Catalyst for the Epoxidation of Olefins, M. Bonnet, L. Schmid, A. Baiker, and F. Diederich, *Adv. Funct. Mater.*, **12**, 39-42 (2002).
- 521 Origin of Rate Enhancement in Enantioselective Hydrogenation of Alpha-Functionalised Ketones over Cinchona Alkaloid Modified Platinum, A. Vargas, T. Bürgi, M. and A. Baiker, *N. J. Chem.*, **26**, 807-810 (2002).
- 522 Manganese Oxide-Silica Aerogels: Synthesis, Structural and Catalytic Properties in the Selective Oxidation of NH₃, P. Fabrizioli, T. Bürgi and A. Baiker, *J. Catal.*, **207**, 88-100 (2002).
- 523 In situ ATR-IR Study of the Adsorption of Cinchonidine on Pd/Al₂O₃. Differences and Similarities with Adsorption on Pt/ Al₂O₃, D. Ferri, T. Bürgi and A. Baiker, *J. Catal.*, **210**, 160-170 (2002).
- 524 *In situ* Infrared Spectroscopy of Catalytic Solid-Liquid Interfaces Using Phase-Sensitive Detection: Enantioselective Hydrogenation of Pyrone over Pd/TiO₂, T. Bürgi and A. Baiker, *J. Phys. Chem. B*, **106**, 10649-10658 (2002).
- 525 *In situ* XANES Study on TiO₂-SiO₂ Aerogels and Flame Made Materials, J.D. Grunwaldt, C. Beck, W. Stark, A. Hagen and A. Baiker, *Phys. Chem. Chem. Phys.* **4**, 3514-3521 (2002).
- 526 On the Role of Oxygen in the Liquid Phase Aerobic Oxidation of Alcohols on Palladium, C. Keresszegi, T. Bürgi, T. Mallat, and A. Baiker, *J. Catal.*, **211**, 244-251 (2002).
- 527 VCD Spectroscopy of Chiral Cinchona Modifiers Used in the Heterogeneous Enantioselective Hydrogenation: Conformation and Binding of Non-Chiral Acids, T. Bürgi, A. Vargas and A. Baiker, , *J. Chem. Soc., Perkin Trans. 2*, **9**, 1596-1601 (2002).
- 528 Enantioselective Hydrogenation on Palladium: Limitations of Continuous Fixed Bed Reactor Operation, N. Künzle, J.W. Solèr, T. Mallat, and A. Baiker, *J. Catal.*, **210**, 446-470 (2002).
- 529 Flame-Made Titania-Silica Doped with Transition Metals: Structural Properties and Catalytic Behaviour in Epoxidation, W.J. Stark, R. Strobel, D. Günther, S.E. Pratsinis, and A. Baiker, *J. Mater. Chem.*, **12**, 3620-3625 (2002).

- 530 Probing Catalytic Solid-Liquid Interfaces by Attenuated Total Reflection Infrared Spectroscopy: Adsorption of Carboxylic Acids on Alumina and Titania, D. Ferri, T. Bürgi and A. Baiker, *Helv. Chim. Acta*, **85**, 3639-3656 (2002).
- 531 Flame Aerosol Synthesis of Heterogeneous Catalysts, W.J. Stark, S.E. Pratsinis and A. Baiker, *Chimia*, **56**, 485-489 (2002).
- 532 Nanoparticle Opportunities: Pilot-Scale Flame Synthesis of Vanadia/Titania Catalysts, W. J. Stark, A. Baiker and S.E. Pratsinis, *Part. Part. Syst. Charact.*, **19**, 306-311 (2002).
- 533 Enantioselective Hydrogenation of Isopropyl-4,4,4-trifluoroacetooacetate in a Continuous Flow Reactor, N. Künzle, T. Mallat and A. Baiker, *Appl. Catal. A.*, **238**, 251-257 (2003).
- 534 Asymmetric Hydrogenation on Platinum: Nonlinear Effect of Coadsorbed Cinchona Alkaloids on Enantiodifferentiation, W.R. Huck, T. Bürgi, T. Mallat and A. Baiker, *J. Catal.*, **216**, 276-287 (2003).
- 535 Heterogeneous Catalysis in Supercritical Media: Opportunities of *In Situ* Spectroscopic Studies and Monitoring Phase Behaviour, J.D. Grunwaldt, R. Wandeler and A. Baiker, *Catal. Rev. Sci. Eng.*, **45**, 1-96 (2003).
- 536 Flame-Made Platinum/Alumina Catalysts: Structural Properties and Catalytic Behaviour in Enantioselective Hydrogenation, R. Strobel, W.J. Stark, L. Mädler, S.E. Pratsinis, and A. Baiker, *J. Catal.*, **213**, 296-304 (2003).
- 537 In Situ EXAFS Study of Pd/Alumina during Aerobic Oxidation of Cinnamyl Alcohol in an Organic Solvent, J.D. Grunwaldt, C. Keresszegi, T. Mallat and A. Baiker, *J. Catal.*, **213**, 291-295 (2003).
- 538 Nonlinear Effect of Modifier Composition on Enantioselectivity in Asymmetric Hydrogenation over Platinum Metals, W.R. Huck, T. Mallat and A. Baiker, *Adv. Synth. Catal.*, **345**, 255-260 (2003).
- 539 Enantioselective Hydrogenation of Aromatic Ketones: Structural Effects, R. Hess, T. Mallat and A. Baiker, *J. Catal.*, **218**, 453-456 (2003).
- 540 Asymmetric Hydrogenation of Cyclohexane-1,2-dione over Cinchonidine Modified Platinum, O. Sonderegger, T. Bürgi and A. Baiker, *J. Catal.*, **215**, 116-121 (2003).
- 541 Probing Enantiospecific Interactions at Chiral Solid-Liquid Interfaces by Absolute Configuration Modulation Excitation Infrared Spectroscopy, R. Wirz, T. Bürgi and A. Baiker, *Langmuir*, **19**, 785-792 (2003).
- 542 Flame-Synthesis of Nanocrystalline Ceria-Zirconia: Effect of Carrier Liquid, W. J. Stark, L. Mädler, A. Baiker, and S.E. Pratsinis, *Chem. Commun.*, 588-589 (2003).

- 543 Novel Routes to Cu(II)-Salicylaldimine Covalently Bound to Silica: Combined Pulse EPR and in situ Attenuated Total Reflectance-IR Studies of the Immobilization, E.F. Murphy, D. Ferri, A. Baiker, S. Van Doorslaer, and A. Schweiger, *Inorg. Chem.*, **42**, 2559-2571 (2003).
- 544 Continuous Enantioselective Hydrogenation in Fixed-Bed Reactor: Towards Process Intensification, N. Künzle, J.W. Solèr, and A. Baiker, *Catal. Today*, **79/80**, 503-509 (2003).
- 545 Epoxidation with Ti(OSiMe₃)₄: A Homogeneous Model Catalyst Mimicking Titania-Silica Mixed Oxides?, C. Beck, T. Mallat and A. Baiker, *New J. Chem.*, **27**, 1284-1289 (2003).
- 546 In situ X-Ray Absorption Study During Methane Combustion over Pd/ZrO₂ Catalysts, J.D. Grunwaldt, M. Maciejewski and A. Baiker, *Phys. Chem. Chem. Phys.*, **7**, 1481-1488 (2003).
- 547 Coadsorption of Cinchona Alkaloids on Supported Palladium: Nonlinear Effects in Asymmetric Hydrogenation and Resistance of Alkaloids against Hydrogenation, W.R. Huck, T. Mallat and A. Baiker, *Catal. Lett.*, **87**, 241-247 (2003).
- 548 In Situ ATR Infrared Spectroscopy: A Sensitive Tool for the Investigation of Reduction – Oxidation Processes on Heterogeneous Pd Metal Catalysts, T. Bürgi, R. Wirz and A. Baiker, *J. Phys. Chem. B*, **107**, 6774-6781 (2003).
- 549 Palladium-Catalyzed Asymmetric Hydrogenation of Furan Carboxylic Acids, M. Maris, W.R. Huck, T. Mallat and A. Baiker, *J. Catal.*, **219**, 52-58 (2003).
- 550 Mapping the Chemical States of an Element Inside a Sample using Tomographic X-Ray Absorption Spectroscopy, C.G. Schroer, M. Kuhlmann, T.F. Günzler, B. Lengeler, M. Richwin, B. Griesebock, D. Lützenkirchen-Hecht, R. Frahm, E. Ziegler, A. Mashayekhi, D.R. Haeffner, J.D. Grunwaldt and A. Baiker, *Appl. Phys. Lett.*, **82**(19), 3360-3362 (2003).
- 551 Formylation with Supercritical CO₂: Efficient Ruthenium-Catalysed Synthesis of *N*-Formylmorpholine, L.Schmid, M.S. Schneider, D. Engel and A. Baiker, *Catal. Lett.*, **88**, 105-113 (2003).
- 552 Epoxidation of Allylic Alcohols with TiO₂-SiO₂: Hydroxy-Assisted Mechanism and Dynamic Structural Changes during Reaction, C. Beck, T. Mallat and A. Baiker, *Catal. Lett.*, **88**, 203-209 (2003).
- 553 Palladium-Catalyzed Enantioselective Hydrogenation of 2-Pyrone: Evidence for Competing Reaction Mechanism, W.R. Huck, T. Bürgi, T. Mallat and A. Baiker, *J. Catal.*, **219**, 41-51 (2003).
- 554 Enantioselective Hydrogenation of Ketopantolactone on Platinum Modified by Ether Derivatives of Cinchonidine, S. Diezi, A. Szabo, T. Mallat and A. Baiker, *Tetrahedron: Asymmetry*, **14**, 257-3-2577 (2003).

- 555 High Pressure View-Cell for Simultaneous In Situ Infrared Spectroscopy and Phase Behaviour Monitoring of Multiphase Chemical Reactions, M.S. Schneider, J.D. Grunwaldt, T. Bürgi and A. Baiker, *Rev. Sci. Instrum.*, **74**, 4121-4128 (2003).
- 556 In Situ Study of Epoxidation on Titania-Silica Catalyst by Modulation Attenuated Total Reflection Fourier Transform Infrared Spectroscopy, A. Gisler, T. Bürgi and A. Baiker, *Phys. Chem. Chem. Phys.*, **5**, 3539-3548 (2003).
- 557 Liquid Phase Oxidation of Alcohols with Oxygen: in situ Monitoring of the Oxidation State of Bi-Promoted Pd/Al₂O₃, C. Keresszegi, J.D. Grunwaldt, T. Mallat and A. Baiker, *Chem. Commun.*, 2304-2305 (2003).
- 558 Nanocrystalline Ceria-Zirconia by Flame-Spray Synthesis: Structural Properties and Dynamic Oxygen Exchange Capacity, W.J. Stark, L. Mädler, M. Maciejewski, S.E. Pratsinis, and A. Baiker, *J. Catal.*, **220**, 35-43 (2003).
- 559 Interactions of Vinyl Ether with Acid-Modified Silica Based Catalysts Studied by ATR-IR Spectroscopy, D. Ferri, S. Frauchiger, T. Bürgi and A. Baiker, *J. Catal.*, **219**, 425-433 (2003).
- 560 Saucy-Marbet Ketonization in a Continuous Fixed-Bed Catalytic Reactor, S. Frauchiger and A. Baiker, *Appl. Catal. A*, **253**, 33-48 (2003).
- 561 Ruthenium-Catalyzed Formylation of Amines with Dense Carbon Dioxide as C1-Source, L. Schmid, A. Canonica and A. Baiker, *Appl. Catal. A*, **255**, 23-33 (2003).
- 562 Probing Active Sites during Palladium-Catalyzed Alcohol Oxidation in Supercritical Carbon Dioxide, J.D. Grunwaldt, M. Caravati, M. Ramin and A. Baiker, *Catal. Lett.*, **90**, 221-229 (2003).
- 563 An ATR-IR Flow-Through Cell for Concentration Modulation Excitation Spectroscopy: Diffusion Experiments and Simulations, A. Urakawa, R. Wirz, T. Bürgi and A. Baiker, *J. Phys. Chem. B*, **107**, 13061-13068 (2003).
- 564 Flame-made Nanocrystalline Ceria/Zirconia Doped with Alumina or Silica: Structural Properties and Enhanced Dynamic Oxygen Exchange Capacity, H. Schulz, W.J. Stark, M. Maciejewski, S.E. Pratsinis and A. Baiker, *J. Mater. Chem.*, **13**, 2979-2984 (2003).
- 565 Interaction Between Ketopantolactone with Chirally Modified Pt Studied by ATR IR Concentration Modulation Spectroscopy, N. Bonalumi, T. Bürgi and A. Baiker, *J. Am. Chem Soc.*, **125**, 13342-13343 (2003).
- 566 1-Naphthyl-1,2-ethanediol as a New Modifier of Platinum in the Enantioselective Hydrogenation of Activated Ketones, A. Marinas, T. Mallat and A. Baiker, *J. Catal.*, **221**, 666-669 (2004).
- 567 A Novel One-Step Synthesis of Tailor-Made Fibrous MoO₃, G.R. Patzke, A. Michailowski, F. Krumeich, R. Nesper, J.D. Grunwaldt and A. Baiker, *Chem. Mater.*, **16**, 1126-1134 (2004).

- 569 Selective Oxidation of Benzyl Alcohol to Benzaldehyde with Oxygen in Supercritical Carbon Dioxide, M. Caravatti, J.D. Grunwaldt and A. Baiker, *Catal. Today*, **91/92**, 1-5 (2004).
- 570 Role of Support in Lean DeNOx Catalysis, M. Piacentini, M. Maciejewski, T. Bürgi and A. Baiker, *Top. Catal.*, **31/32**, 71-80 (2004).
- 571 Inversion of Enantioselectivity in the Platinum-Catalyzed Hydrogenation of Substituted Acetophenones, R. Hess, A. Vargas, T. Mallat, T. Bürgi and A. Baiker, *J. Catal.*, **222**, 117-128 (2004).
- 572 Flame Spray Synthesis of Pd/Al₂O₃ Catalysts and their Behaviour in Enantioselective Hydrogenation, R. Strobel, F. Krumeich, W.J. Stark, S.E. Pratsinis and A. Baiker, *J. Catal.*, **222**, 307-314 (2004).
- 573 The Absolute Configuration of Heptahelicene: A VCD Spectroscopy Study, T. Bürgi, A. Urakawa, B. Behzadi, K.H. Ernst and A. Baiker, *New J. Chem.*, **28**, 332-334 (2004).
- 574 Rhodium-Catalyzed Heterogeneous Enantioselective Hydrogenation of 3,5-Di-(trifluoromethyl)-acetophenone, R. Hess, F. Krumeich, T. Mallat and A. Baiker, *J. Mol. Catal. A*, **212**, 205-209 (2004).
- 575 Oxidation of Alcohols with Molecular Oxygen on Solid Catalysts, T. Mallat and A. Baiker, *Chem. Rev.*, **104**, 3037-3058 (2004).
- 576 Near-Critical CO₂ in Mesoporous Silica Studied by In-Situ FTIR Spectroscopy, M.S. Schneider, J.D. Grunwaldt and A. Baiker, *Langmuir*, **20**, 2890-2899 (2004).
- 577 Restructuring of Pt/Al₂O₃ during Enantioselective Hydrogenation: Evidence for Generation of Chiral Surface Sites, R. Hess, F. Krumeich, T. Mallat and A. Baiker, *Catal. Lett.*, **92**, 141-148 (2004).
- 578 Chemo- and Enantioselective Hydrogenation of the Activated Keto-Group of Fluorinated β-Diketones, R. Hess, S. Diezi, T. Mallat and A. Baiker, *Tetrahedron: Asymmetry*, **15**, 251-257 (2004).
- 579 Adsorption of Ketones and their Reactivity in Hydrogenation on Platinum: A DFT Study, A. Vargas, T. Bürgi and A. Baiker, *J. Catal.*, **222**, 439-449 (2004).
- 580 Epoxidation of Allylic Alcohols over Titania-Silica Aerogels Studied by Modulation Attenuated Total Reflection Fourier Infrared Spectroscopy, A. Gisler, T. Bürgi and A. Baiker, *J. Catal.*, **222**, 461-469 (2004).
- 581 The Selective Catalytic Reduction of NO by Hydrocarbons over Pt- and Ir-based Catalysts, M. D. Amiridis, C. Mihut, M. Maciejewski and A. Baiker, *Top. Catal.*, **28**, 141-150 (2004).

- 582 Adsorption of Cinchonidine on Platinum: A Density Functional Theory Insight in the Mechanism of Enantioselective Hydrogenation of Activated Ketones, A. Vargas, T. Bürgi and A. Baiker, *J. Catal.*, **226**, 69-82 (2004).
- 583 A Simple Discrimination of the Promotor Effect in Alcohol Oxidation and Dehydrogenation over Platinum and Palladium, C. Keresszegi, T. Mallat, J.D. Grunwaldt and A. Baiker, *J. Catal.*, **225**, 138-146 (2004).
- 584 Investigation of Surface Species During Platinum-Catalysed Asymmetric Hydrogenation in Supercritical Solvent, M.S. Schneider, A. Urakawa, J-D. Grunwaldt, T. Bürgi and A. Baiker, *Chem. Commun.*, 744-745 (2004).
- 585 Absolute Configuration Modulation ATR-IR Spectroscopy: A New In Situ Methode for Probing Chiral Recognition in Liquid-Chromatography, R. Wirz, T. Bürgi, W. Lindner and A. Baiker, *Analyt. Chem.*, **76**, 5319-5330 (2004).
- 586 Enantioselective Reduction of Isatin Derivatives over Cinchonidine-Modified Pt/Alumina, O. Sonderegger, T. Bürgi and A. Baiker, *J. Mol. Catal. A*, **217**, 93-101 (2004).
- 587 Fate of Ethyl Pyruvate during Adsorption on Platinum Chirally Modified by Cinchonidine: An In Situ ATR-IR Study, D. Ferri, T. Bürgi and A. Baiker, *J. Phys. Chem. B*, **108**, 14384-14391 (2004).
- 588 Hydrogenation of Citral over Pd/Alumina: Comparison of Supercritical CO₂ and Conventional Solvents in Continuous and Batch Reactors, M. Burgener, R. Furrer, T. Mallat and A. Baiker, *Appl. Catal. A*, **268**, 1-8 (2004).
- 589 X-Ray Absorption Studies under Reaction Conditions – Opportunities and Limitations of In Situ Monitoring and Time Resolved Studies of Heterogeneous Catalysts, J.D. Grunwaldt, M. Caravati, S. Hannemann and A. Baiker, *Phys. Chem. Chem. Phys.*, **6**, 3037-3047 (2004)
- 590 Heterogeneous Enantioselective Hydrogenation over Cinchona-Alkaloid Modified Platinum: Mechanistic Insight into a Complex Reaction, T. Bürgi and A. Baiker, *Acc. Chem. Res.*, **37**, 909-917 (2004).
- 591 Enantioselective Hydrogenation of Furancarboxylic Acids: A Spectroscopic and Theoretical study, M. Maris, T. Bürgi, T. Mallat and A. Baiker, *J. Catal.*, **226**, 393-400 (2004).
- 592 On the Role of Modifier Structure in the Palladium-Catalyzed Enantioselective Hydrogenation of Furan-2-Carboxylic Acid, M. Maris, T. Mallat, E. Orglmeister, and A. Baiker, *J. Mol. Catal. A*, **219**, 371-376 (2004).
- 593 Nature of Catalyst Deactivation during Citral Hydrogenation: A Catalytic and ATR-IR Study, M. Burgener, R. Wirz, T. Mallat and A. Baiker, *J. Catal.*, **228**, 152-161 (2004).

- 594 Fine Tuning the Chiral Sites on Solid Enantioselective Catalysts, S. Diezi, T. Mallat, A. Szabo and A. Baiker, *J. Catal.*, **228**, 162-173 (2004).
- 595 Fluoro-Apatite and Calcium Phosphate Nanoparticles by Flame Synthesis, S. Loher, W.J. Stark, M. Maciejewski, A. Baiker, S.E. Pratsinis, D. Reichhardt, F. Maspero, F. Krumeich and D. Günther, *Chem. Mater.*, **17**, 36-42 (2005).
- 596 Flame-synthesised Pd/La₂O₃/Al₂O₃: Thermal Stability and Catalytic Behaviour in Methane Combustion, R. Strobel, S.E. Pratsinis and A. Baiker, *J. Mater. Chem.*, **15**, 605-610 (2005).
- 597 Interaction of Water, Alkyl Hydroperoxide and Allylic Alcohol with a Single-Site Homogeneous Ti-Si Epoxidation Catalyst: A Spectroscopic and Computational Study, A. Urakawa, T. Bürgi, P. Skrabal, F. Bangerter and A. Baiker, *J. Phys. Chem. B*, **109**, 2212-2221 (2005).
- 598 Formylation with Supercritical Carbon Dioxide over Ru/Al₂O₃ Modified by Phosphines: Heterogeneous or Homogeneous Catalysis?, M. Rohr, J.D. Grunwaldt and A. Baiker, *J. Catal.*, **229**, 144-153 (2005).
- 599 Palladium-Catalysed Dehydrogenation of 1-Phenylethanol in Dense Carbon Dioxide, M. Burgener, T. Mallat and A. Baiker, *J. Mol. Catal. A*, **225**, 21-25 (2005).
- 600 Chiral Modification of Platinum: Adsorption and Mobility of Cinchonidine on Pt(111) Studied by STM, M. von Arx, M. Wahl, T. Jung and A. Baiker, *Phys. Chem. Chem. Phys.*, **7**, 273-277 (2005)
- 601 Axial Variation of the Oxidation state of Pt-Rh/Al₂O₃ during Partial Methane Oxidation in a Fixed-Bed Reactor: An in situ X-ray Absorption Spectroscopy Study, J.D. Grunwaldt and A. Baiker, *Catal. Lett.*, **99**, 5-12 (2005).
- 602 X-Ray Absorption Spectroscopy on CuO/ZnO Catalysts Selected by High-Throughput Experimentation Technique, J.D. Grunwaldt, C. Kiener, F. Schüth and A. Baiker, *Physica Scripta*, **T115**, 819-821 (2005).
- 603 X-Rax absorption Spectroscopy on Heterogeneous Catalysts at the New XAS Beamline at ANKA, J. D. Grunwaldt, S. Hannemann, J. Göttlicher, S. Mangold, M.A. Denecke and A. Baiker, *Physica Scripta*, **T115**, 769-772 (2005).
- 604 Monitoring of fast Transformations in Solid State Chemistry and Heterogeneous Catalysis by QEXAFS in the Second Scale, D. Lützenkirchen-Hecht, J.D. Grunwaldt, M. Richwin, B. Griesebock, A. Baiker and R. Frahm, *Physica Scripta*, **T115**, 831-833 (2005).
- 605 Tomographic X-Ray Absorption Spectroscopy, C.G. Schroer, M. Kuhlmann, T.F. Günzler, B. Lengeler, M. Richwin, B. Griesebock, D. Lützenkirchen-Hecht, R. Frahm, A. Mashayekhi, D.R. Haeffner, E. Ziegler, J.D. Grunwaldt and A. Baiker, *Physica Scripta*, **T115**, 1026-1028 (2005).

- 606 Flame Synthesis of Calcium Carbonate Nanoparticles, M. Huber, W.J. Stark, S. Loher, M. Maciejewski, A. Baiker and F. Krumeich, *Chem. Commun.*, 648-650 (2005).
- 607 A Simple Route to Highly Active Ruthenium Catalyst for the Formylation of Amines by Carbon Dioxide and Hydrogen, M. Rohr, J.D. Grunwaldt, and A. Baiker, *J. Mol. Catal. A.*, **226**, 253-257 (2005).
- 608 Synthetic Modifiers for Platinum in the Enantioselective Hydrogenation of Ketopantolactone: A Test for the Mechanistic Models of Ketone Hydrogenation, E. Orglmeister, T. Mallat, and A. Baiker, *Adv. Synth. Catal.*, **347**, 78-86 (2005).
- 609 Promoted Ru-Hydroxyapatite: Designed Structure for the Fast and Highly Selective Oxidation of Alcohols with Oxygen, Z. Opre, J.D. Grunwaldt, M. Maciejewski, D. Ferri, T. Mallat and A. Baiker, *J. Catal.*, **230**, 406-419 (2005)
- 610 Unraveling the Surface Reactions during the Liquid-Phase Oxidation of Benzyl Alcohol: An In Situ ATR-IR Study, C. Keresszegi, D. Ferri, T. Mallat and A. Baiker, *J. Phys. Chem. B*, **109**, 958-967 (2005).
- 611 Benzyl Alcohol Oxidation in Supercritical Carbon Dioxide: Spectroscopic Insight into Phase Behaviour and Reaction Mechanism, M. Caravatti, J.D. Grunwaldt and A. Baiker, *Phys. Chem. Chem. Phys.*, **7**, 278-285 (2005).
- 612 Enantioselective Hydrogenation of α -Hydroxy Ketones over Cinchona-Modified Platinum: Influence of Reactant and Modifier Structure, O.J. Sonderegger, G.M, Ho, T. Bürgi and A. Baiker, *J. Mol. Catal. A*, **229**, 19-24 (2005).
- 613 High-Pressure In situ X-Ray Absorption Spectroscopy Cell for Studying Simultaneously the Liquid Phase and the Solid-Liquid Interphase, J.D. Grunwaldt, M. Ramin, M. Rohr and A. Baiker, *Rev. Sci. Instrum.*, **76**, 4104 (2005).
- 614 Reflections on Chiral Metal Surfaces and their Potential for Catalysis, A. Baiker, *Catal. Today*, **100**, 159-170 (2005).
- 615 Behavior of Homogeneous and Immobilized Zinc-based Catalysts in the Cycloaddition of Carbon Dioxide to Propylene Oxide, M. Ramin, J.D. Grunwaldt, and A. Baiker, *J. Catal.*, **234**, 256-267 (2005).
- 616 Enantioselective Hydrogenation of Aromatic Ketones over Cinchona-Modified Rhodium: A New Opportunity?, O. J. Sonderegger, G.M, Ho, T. Bürgi and A. Baiker, *J. Catal.*, **230**, 499-506 (2005).
- 617 Conformational Rigidity: A Necessary Prerequisite of Chiral Modifiers for Heterogeneous Enantioselective Catalysis?, E. Orglmeister, T. Bürgi, T. Mallat and A. Baiker, *J. Catal.*, **232**, 137-142 (2005).
- 618 Pt-Ba/Alumina NO_x Storage-Reduction Catalysts: Influence of Barium Loading on Build-Up, Stability and Reactivity of Ba-Containing Phases, M. Piacentini, M. Maciejewski and A. Baiker, *Appl. Catal. B.*, **59**, 187-195 (2005).

- 619 Flame-made Pt/ceria/zirconia for Low-Temperature Oxygen Exchange, W. J. Stark, J.-D. Grunwaldt, M. Maciejewski, S. E. Pratsinis, and A. Baiker, *Chem. Mater.*, **17**, 3352-3358 (2005).
- 620 Competition at Chiral Metal Surfaces: Fundamental Aspects of the Chiral Switch in Enantioselective Hydrogenation on Platinum, N. Bonalumi, A. Vargas, D. Ferri, T. Bürgi, T. Mallat and A. Baiker, *J. Am. Chem. Soc.*, **127**, 8467-8477 (2005).
- 621 An Efficient Synthetic Chiral Modifier for Platinum, S. Diezi, M. Hess, E. Orglmeister, T. Mallat and A. Baiker, *Catal. Lett.*, **102**, 121-125 (2005).
- 622 Solvothermal Formation of MoO₃ Fibers Studied by Complementary In Situ-XANES/EXAFS and EDXRD Techniques, A. Michailovsky, J.D. Grunwaldt, A. Baiker, R. Kiebach, W. Bench, G. Patzke, *Angew. Chem. Int. Ed.*, **44**, 5643-5647 (2005).
- 623 Pt-Ba/Alumina NO_x Storage-Reduction Catalysts: Influence of Ba Loading on NO_x Storage Behaviour, M. Piacentini, M. Maciejewski and A. Baiker, *Appl. Catal. B.*, **60**, 265-275 (2005).
- 624 Supercritical Carbon Dioxide: An Inert Solvent for Catalytic Hydrogenation?, M. Burgener, D. Ferri, J.D. Grunwaldt, T. Mallat and A. Baiker, *J. Phys. Chem. B*, **109**, 16794-16800 (2005).
- 625 Flame-made Alumina Supported Pd-Pt Nanoparticles and their Behavior in Catalytic Methane Combustion, R. Strobel, A. Camenzind, J.D. Grunwaldt, S.E. Pratsinis and A. Baiker, *Catal. Lett.*, **104**, 9-16 (2005).
- 626 On the Role of CO Formation during the Aerobic Oxidation of Alcohols on Pd/Al₂O₃: an in Situ ATR-IR Study, C. Keresszegi, D. Ferri, T. Mallat and A. Baiker, *J. Catal.*, **234**, 64-75 (2005).
- 627 Nonlinear Phenomenon in Heterogeneous Enantioselective Catalysis, L. Balazs, T. Mallat, and A. Baiker, *J. Catal.*, **233**, 327-332 (2005).
- 628 Quaternary Ammonium Derivatives of Cinchonidine as New Chiral Modifiers for Platinum, E. Orglmeister, T. Mallat and A. Baiker, *J. Catal.*, **233**, 333-341 (2005).
- 629 Chemo and Enantioselective Hydrogenation of Fluorinated Ketones on Platinum Modified with (*R*)-1-(1-Naphthyl)Ethylamine Derivatives, S. Diezi, M. Hess, E. Orglmeister, T. Mallat, and A. Baiker, *J. Mol. Catal. A*, **239**, 49-56 (2005).
- 630 Solventless Synthesis of Propylene Carbonate Catalyzed by Chromium Salen Complexes: Bridging Homogeneous and Heterogeneous Catalysis, M. Ramin, J.D. Grunwaldt, and A. Baiker, *J. Mol. Catal. A*, **242**, 32-39 (2005).
- 631 Zwitterion Formation: A Feasible Mechanism for the Pt-catalyzed Enantioselective Hydrogenation of Ketones?, E. Orglmeister, T. Mallat, and A. Baiker, *J. Catal.*, **234**, 242-246 (2005).

- 632 Evaluation of Strategies for the Immobilization of Bidentate Ruthenium Phosphine Complexes used for the Hydroamination of Amines in Supercritical Carbon Dioxide, M. Rohr, M. Günther, F. Jutz, J.D. Grunwaldt, H. Emerich, W. van Beck, and A. Baiker, *Appl. Catal. A*, **296**, 238-250 (2005).
- 633 In Situ Spectroscopic Investigation of Heterogeneous Catalysts and Reaction Media at High Pressure, J.D. Grunwaldt and A. Baiker, *Phys. Chem. Chem. Phys.*, **7**, 3526-3539 (2005).
- 634 DFT and ATR-IR Insight into Conformational Flexibility of Cinchonidine Adsorption on Platinum: The Proton Exchange with the Metal, A. Vargas, D. Ferri, and A. Baiker, *J. Catal.*, **236**, 1-8 (2005).
- 635 Rhodium-Catalyzed Enantioselective Hydrogenation of Ketopantolactone, M. Maris, T. Mallat, and A. Baiker, *J. Mol. Catal. A*, **242**, 151-155 (2005).
- 636 Selective Oxidation of Alcohols with Oxygen on Ru-Co-Hydroxyapatite: A Mechanistic Study, S. Opre, J. D. Grunwaldt, T. Mallat, and A. Baiker, *J. Mol. Catal. A*, **242**, 224-232 (2005).
- 637 Influence of Measuring Conditions on the Quantification of Spectroscopic Signals in TG-FTIR-MS System, F. Eigenmann, M. Maciejewski, and A. Baiker, *J. Therm. Anal. Calorim.*, **83**, 321-330 (2006).
- 638 Selective Reduction of NO by NH₃ over Manganese-Cerium Mixed Oxides: Relation between Adsorption, Redox and Catalytic Behaviour, F. Eigenmann, M. Maciejewski, and A. Baiker, *Appl. Catal. B*, **62**, 311-318 (2006).
- 639 Formation and Stability of Barium Aluminate and Cerate in NO_x-Storage Catalysts, M. Casapu, J-D. Grunwaldt, M. Maciejewski, M. Wittrock, U. Göbel, and A. Baiker, *Appl. Catal. B*, **63**, 232-242 (2006).
- 640 Quantitative Calibration of Spectroscopic Signals in Combined TG-FTIR System, F. Eigenmann, M. Maciejewski and A. Baiker, *Thermochim. Acta*, **440**, 81-92 (2006).
- 641 Alumina-Catalysed Degradation of Ethyl Pyruvate during Enantioselective Hydrogenation over Pt/alumina and its Suppression by Acetic Acid, D. Ferri, S. Diezi, M. Maciejewski, and A. Baiker, *Appl. Catal. A*, **297**, 165-173 (2006).
- 642 Solvent-Modified Supercritical CO₂: A Beneficial Medium for Heterogeneously Catalysed Oxidation Reactions, M. Caravati, J.D. Grunwaldt and A. Baiker, *Appl. Catal. A*, **298**, 50-56 (2006).
- 643 Palladium-Catalyzed Oxidation of Geraniol in Dense Carbon Dioxide, M. Burgener, T. Tyszewski, D. Ferri, T. Mallat and A. Baiker, *Appl. Catal. A*, **299**, 66-72 (2006).
- 644 Solvent Induced Conformational Changes of *O*-Phenyl-Cinchonidine: A Theoretical and VCD Spectroscopic Study, A. Vargas, N. Bonalumi, D. Ferri, and A. Baiker, *J. Phys. Chem. A*, **110**, 1118-1127 (2006).

- 645 Why are α -Hydroxycarboxylic Acids Poor Chiral Modifiers for Pt in the Hydrogenation of Ketones?, M. Maris, D. Ferri, L. Königsmann, T. Mallat, and A. Baiker, *J. Catal.*, **237**, 230-236 (2006).
- 646 Electron Microscopy and EXAFS Studies on Oxide-Supported Gold-Silver Nanoparticles Prepared by Flame Spray Pyrolysis, S. Hannemann, J.D. Grunwaldt, F. Krumeich, P. Kappen and A. Baiker, *Appl. Surf. Sci.*, **252**, 7862-7873 (2006).
- 647 Simultaneous In Situ Monitoring of Surface/Gas Species and Surface Properties by Modulation Excitation PM-IRRAS: CO Oxidation over Pt Film, A. Urakawa, T. Bürgi, H. P. Schläpfer and A. Baiker, *J. Chem. Phys.*, **124** (5), Art. No. 054717 (2006).
- 648 Kinetic Analysis Using Square-Wave Stimulation in Modulation Excitation Spectroscopy: Mixing Property of a Flow-Through PM-IRRAS Cell, A. Urakawa, T. Bürgi, and A. Baiker, *Chem. Phys.*, **324**, 653-658 (2006).
- 649 2D-Mapping of the Catalyst Structure Inside a Catalytic Reactor at Work: Study of Catalytic Partial Oxidation of Methane over Rh/Al₂O₃, J.D. Grunwaldt, S. Hannemann, C. G. Schroer, and A. Baiker, *J. Chem. Phys. B*, **110**, 8674-8680 (2006),.
- 650 The Origin of Chemo- and Enantioselectivity in the Hydrogenation of Diketones on Platinum, S. Diezi, D. Ferri, A. Vargas, T. Mallat, and A. Baiker, *J. Amer. Chem. Soc.*, **128**, 4048-4057 (2006).
- 651 Supported Pt-Ba NO_x Storage-Reduction Catalysts: Influence of Support and Ba Loading on Stability and Storage Efficiency of Ba-containing Species, M. Piacentini, M. Maciejewski, and A. Baiker, *Appl. Catal. B.*, **66**, 126-136 (2006).
- 652 Two-Nozzle Flame Synthesis of Pt/Ba/Al₂O₃ for NO_x, R. Strobel, M. Piacentini, L. Mädler, M. Maciejewski, A. Baiker, and S.E, Pratsinis, *Chem. Mater.*, **18**, 2532-2537 (2006).
- 653 ATR-IR Spectroscopy of Pendant NH₂-Groups on Silica involved in the Knoevenagel Condensation, R. Wirz, D. Ferri, and A. Baiker, *Langmuir*, **22**, 3698-3706 (2006).
- 654 First Principles Study of the Conformation of Cinchonidine on a Pt(111) Surface, A. Vargas and A. Baiker, *J. Catal.*, **239**, 220-226 (2006).
- 655 Steric and Electronic Effects in Enantioselective Hydrogenation of Activated Ketones on Platinum: Directing Effect of Ester Group, S. Diezi, S. Reimann, N. Bonalumi, T. Mallat, and A. Baiker, *J. Catal.*, **239**, 255-262 (2006).
- 656 Steric and Electronic Effects in Enantioselective Hydrogenation of Ketones on Platinum Modified by Cinchonidine: Directing Effect of Trifluoromethyl Group, A. Vargas, F. Hoxha, N. Bonalumi, T. Mallat, and A. Baiker, *J. Catal.*, **240**, 203-212 (2006).

- 657 IR Spectroscopy and Phase Behavior Studies in the Catalytic Synthesis of Propylene Carbonate: Expanded Liquid versus Supercritical Fluid, M. Ramin, J.D. Grunwaldt, and A. Baiker, *Appl. Catal. A.*, **305**, 46-53 (2006).
- 658 Continuous Catalytic Oxidation of Solid Alcohols in Supercritical CO₂: A Parametric and Spectroscopy Study of the Transformation of Cinnamyl Alcohol over Pd/Al₂O₃, M. Caravati, D. M. Meier, J. D. Grunwaldt and A. Baiker, *J. Catal.*, **240**, 126-136 (2006).
- 659 Modulation Excitation PM-IRRAS: A New Possibility for Simultaneous Monitoring of Surface and Gas Species and Surface Properties, A. Urakawa, T. Bürgi and A. Baiker, *Chimia*, **60**, 231-233 (2006).
- 660 Attenuated Total Reflection Infrared Spectroscopy of Solid Catalysts Functioning in the Presence of Liquid-Phase Reactants, T. Bürgi and A. Baiker, *Adv. Catal.* **50A**, 227-283 (2006).
- 661 Cinchonidine Adsorption on Gold and Gold-containing Bimetallic Platinum Metal Surfaces: An Attenuated Total Reflection Infrared and Density Functional Theory Study, B. Behzadi-Arab, A. Vargas, D. Ferri, K. H. Ernst and A. Baiker, *J. Phys. Chem. B*, **110**, 17082-17089 (2006).
- 662 Aerobic Oxidation of Alcohols by Organically Modified Ruthenium Hydroxyapatite, Z. Opre, D. Ferri, F. Krumeich, T. Mallat and A. Baiker, *J. Catal.*, **241**, 287-295 (2006).
- 663 Unprecedented Formation of Metastable Monoclinic BaCO₃ by Flame Spray Pyrolysis, R. Strobel, M. Maciejewski, S. E. Pratsinis, and A. Baiker, *Thermochim. Acta*, **445**, 23-26 (2006).
- 664 An In Situ EXAFS Study during Selective Alcohol Oxidation over Pd/Al₂O₃ in Supercritical Carbon Dioxide, J.D. Grunwaldt, M. Caravati, and A. Baiker, *J. Phys. Chem. B*, **110**, 9916-9922 (2006).
- 665 Theoretical and Spectroscopic Study of the Effect of Ring Substitution on the Adsorption of Anisole on Platinum, N. Bonalumi, A. Vargas, D. Ferri, and A. Baiker, *J. Phys. Chem. B*, **110**, 9956-9965 (2006).
- 666 Flame-made Pt-Ba/Al₂O₃: Structural Properties and Behavior in Lean NO_x Storage-Reduction, M. Piacentini, R. Strobel, M. Maciejewski, S.E. Pratsinis, and A. Baiker, *J. Catal.*, **243**, 43-56 (2006).
- 667 Flame-derived Pt/Ba/Ce_xZr_{1-x}O₂: Influence of Support on Thermal Deterioration and Applicability as NO_x Storage-Reduction Catalysts, R. Strobel, F. Krumeich, S.E. Pratsinis, and A. Baiker, *J. Catal.*, **243**, 229-238 (2006).
- 668 Aerosol Flame Synthesis of Catalysts, R. Strobel, A. Baiker, S.E. Pratsinis, *Adv. Powder Techn.*, **17**, 457-480 (2006).

- 669 Novel Preparation Routes towards Zn-based Catalysts for the Solventless Synthesis of Propylene Carbonate using Dense Carbon Dioxide, M. Ramin, N. van Vugt, J.D. Grunwaldt, and A. Baiker, *J. Mol. Catal. A.*, **258**, 165-171 (2006).
- 670 Time-Lapsed STM Studies of the Adsorption and Mobility of Diastereomeric Cinchona Alkaloids on Platinum Metals, M. Wahl, M. von Arx, T. A. Jung, and A. Baiker, *J. Phys. Chem. B.*, **110**, 21777-21782 (2006).
- 671 Monitoring Catalysts at Work, J. D. Grunwaldt, S. Hannemann, P. Boye, C. G. Schroer, and A. Baiker, *Chimia*, **60**, 709-709 (2006).
- 672 Competition of Chiral Modifiers on Platinum: A Transient Catalytic and in situ ATR-IR Study in Continuous Reactors, D. M. Meier, T. Mallat, D. Ferri and A. Baiker, *J. Catal.*, **244**, 260-263 (2006).
- 673 Discrimination of Active Palladium Sites in Catalytic Liquid-Phase Oxidation of Benzylalcohol, D. Ferri, C. Mondelli, F. Krumeich and A. Baiker, *J. Phys. Chem. B.*, **110**, 22982-22986 (2006).
- 674 Towards the Engineering of Enantioselective Properties of Supported Platinum Catalysts, A. Vargas and A. Baiker, *Molecular Simulation*, **32**, 1241-1247 (2006).
- 675 Oxidic or Metallic Palladium – Which is the Active Phase in Pd-catalysed Aerobic Alcohol Oxidation?, J.D. Grunwaldt, M. Caravati, and A. Baiker, *J. Phys. Chem. B.*, **110**, 25586-25589 (2006).
- 676 Distinct Spatial Changes of the Catalyst Structure Inside a Catalytic Microreactor during the Partial Oxidation of Methane over Rh/Al₂O₃, S. Hannemann, J.D. Grunwaldt, N. van Vugt, A. Baiker, P. Boye, and C. G. Schroer, *Catal. Today*, **126**, 54-63 (2007).
- 677 Morphological and Kinetic Studies on Hexagonal Tungstates, A. Michailovski, R. Kiebach, W. Bensch, J.D. Grunwaldt, A. Baiker, S. Komarneni, and G. R. Patzke, *Chem. Mater.*, **19**, 185-197 (2007).
- 678 Intermolecular Interactions of the Chiral Modifier Cinchonidine on Au(111) Studied by XPS and TPD, B. Behzadi, D. Ferri, A. Baiker, and K.-H. Ernst, *Appl. Surf. Sci.*, **253**, 3480-3484 (2007).
- 679 Probing the Interface in Vapor-Deposited Bimetallic Pd–Au and Pt–Au Films using CO Adsorption from the Liquid Phase, D. Ferri, B. Behzadi, P. Kappenberger, R. Hauert, K.H. Ernst, and A. Baiker, *Langmuir*, **23**, 1203-1208 (2007).
- 680 Role and Distribution of Different Ba-containing Phases in Supported Pt-Ba NSR Catalysts, M. Piacentini, M. Maciejewski, and A. Baiker, *Top. Catal.*, **42/43**, 55-59 (2007).
- 681 Thermal Ageing Phenomena and Strategies towards Reactivation of NO_x-Storage-Reduction Catalysts, M. Casapu, J.D. Grunwaldt, M. Maciejewski, A. Baiker, M. Wittrock, U. Göbel, and S. Eckhoff, *Top. Catal.*, **42/43**, 3-7 (2007).

- 682 Controlling Enantioselection on Surfaces by Conformational Changes of Adsorbed Modifiers, A.Vargas, D. Ferri, N. Bonalumi, T. Mallat, and A. Baiker, *Angew. Chem. Int. Ed.*, **46**, 3905-3908 (2007).
- 683 Carbon Dioxide Hydrogenation Catalyzed by a Ruthenium Dihydride: A DFT and High Pressure Spectroscopic Investigation, A. Urakawa, F. Lutz, G. Laurenczy, and A. Baiker, *Chem. Eur. J.*, **13**, 3886-3899 (2007).
- 684 Combination of Flame Synthesis and High Throughput Experimentation: Preparation of Alumina Supported Noble Metal Particles and Their Application in the Catalytic Partial Oxidation of Methane, S. Hannemann, J.D. Grunwaldt, P. Lienemann, D. Günther, S. E. Pratsinis, and A. Baiker, *Appl. Catal. A: General*, **316**, 226-239 (2007).
- 685 Comparative In Situ XAS Investigations during Aerobic Oxidation of Alcohols over Ruthenium, Platinum and Palladium Catalysts in Supercritical CO₂, M. Caravati, J.D. Grunwaldt, *Catal. Today*, **126**, 27-36 (2007).
- 686 NO_x Storage-Reduction Behaviour of Pt-Ba/MO₂ (MO₂ = SiO₂, CeO₂, ZrO₂) Catalysts, M. Piacentini, M. Maciejewski and A. Baiker, *Appl. Catal. B: Environmental*, **72**, 105-117 (2007).
- 687 Epoxidation of Styrene with Cobalt-hydroxyapatite and Oxygen in Dimethylformamide: a Green Technology?, Z. Opre, T. Mallat, and A. Baiker, *J. Catal.*, **245**, 482-486 (2007).
- 688 Structure Sensitivity of Palladium-Catalyzed Liquid Phase Alcohol Oxidation. A Combined In Situ ATR-IR and Selective Site Blocking Study, D. Ferri, C. Mondelli, F. Krumeich, and A. Baiker, *Chimia*, **61**, 175-178 (2007).
- 689 Gold-Catalyzed Selective Oxidation of Alcohols in Supercritical Carbon Dioxide, B. Kimmerle, J.D. Grunwaldt, and A. Baiker, *Top. Catal.*, **44**, 285-292 (2007).
- 690 Gold Supported on Mixed Oxides: Strong Enhancement of Activity by Concerted Effect of Copper and Magnesium, P. Haider, and A. Baiker, *J. Catal.*, **248**, 175-187 (2007).
- 691 Structural Properties of Flame-made Rh/Al₂O₃ and Catalytic Behaviour in Chemoselective Hydrogenation, N. van Vugten, D. Ferri, M. Maciejewski, F. Krumeich, and A. Baiker, *J. Catal.*, **249**, 269-277 (2007).
- 692 Catalytic Chiral Metal Surfaces Generated by Adsorption of O-Phenyl Derivatives of Cinchonidine, N. Bonalumi, A. Vargas, D. Ferri, and A. Baiker, *J. Phys. Chem. C*, **111**, 9349-9358 (2007).
- 693 In Situ Monitoring of Ni-based Catalysts during the Synthesis of Propylene Carbonate, M. Ramin, S. Reimann, J.D. Grunwaldt, and A. Baiker, *AIP Conf. Proc.* **882**, 669-671 (2007).

- 694 Probing Chiral Recognition in Liquid Chromatography by Absolute Configuration Modulation ATR-IR Spectroscopy, by R. Wirz, D. Ferri, T. Bürgi, and A. Baiker *Spectroscopy Europe*, **19**, 8-13 (2007).
- 695 Hydrogenation of α -Ketoesters and Ketopantolactone on Rhodium Modified by Cinchona and Isocinchona Alkaloids, F. Hoxha, T. Mallat, and A. Baiker, *J. Catal.*, **248**, 11-19 (2007).
- 696 Parallel Structural Screening of Solid Materials, J.D. Grunwaldt, B. Kimmerle, S. Hannemann, A. Baiker, P. Boye, and C. Schroer, *J. Mater. Chem.*, **17**, 2603-2606 (2007).
- 697 Surface Processes Occurring on Rh/alumina during Chiral Modification by Cinchonidine: An ATR-IR Spectroscopy Study, E. Schmidt, D. Ferri, and A. Baiker, *Langmuir*, **23**, 8087-8093 (2007).
- 698 Time Resolved Operando XAS Studies on Heterogeneous Catalysts – From the Gas Phase Towards reactions in Supercritical Fluids, J.D. Grunwaldt, and A. Baiker, *AIP Conf. Proc.* **882**, 577-581 (2007).
- 699 Molecular Insight into the Dynamics of Chiral Modification of Pt/alumina, D.M. Meier, D. Ferri, T. Mallat and A. Baiker, *J. Catal.*, **248**, 68-76 (2007).
- 700 A Versatile *in situ* Spectroscopic Cell for Fluorescence/Transmission EXAFS and Xray Diffraction of Heterogeneous Catalysts in Gas and Liquid Phases, S. Hannemann, M. Casapu, J-D. Grunwaldt, P. Haider, P. Trüssel, A. Baiker, and E.Welter, *J. Synchrotron Rad.*, **14**, 345-354 (2007).
- 701 Towards Rational Design of Ruthenium CO₂-Hydrogenation Catalysts by ab initio Metadynamics, A. Urakawa, M. Iannuzzi, J. Hutter, and A. Baiker, *Chem. Eur. J.*, **13**, 6828-6840 (2007).
- 702 Reply to Letter on Molecular Insight into the Dynamics of Chiral Modification of Pt/alumina, by T. Mallat and A. Baiker, *J. Catal.*, **251**, 246 (2007).
- 703 Insight into the Nature of Active Redox Sites in Ru-containing Hydroxyapatite by DRIFT Spectroscopy, Z. Opre, D. Ferri, F. Krumeich, T. Mallat and A. Baiker, *J. Catal.*, **251**, 48-58 (2007).
- 704 Chirally Modified Catalytic Platinum Generated by Adsorption of Cinchonidine Ether Derivatives: Towards Uncovering of the Chiral Sites, N. Bonalumi, A. Vargas, D. Ferri, and A. Baiker, *Chem., Eur. J.*, **13**, 9236-9244 (2007).
- 705 Role of Guiding Groups in Cinchona-Modified Platinum for Controlling the Sense of Enantiodifferentiation in the Hydrogenation of Ketones, F. Hoxha, L. Königsmann, A. Vargas, D. Ferri, T. Mallat, and A. Baiker, *J. Amer Chem. Soc.*, **129**, 10582-10590 (2007).

- 706 Gold Supported on Cu-Mg-Al and Cu-Ce Mixed Oxides: – An in Situ XANES Study on the State of Au during Aerobic Alcohol Oxidation, P. Haider, J.D. Grunwaldt, R. Seidel, and A. Baiker, *J. Catal.*, **250**, 313-323 (2007).
- 707 Asymmetric Catalysis at Chiral Metal Surfaces, T. Mallat, E. Orglmeister, and A. Baiker, *Chem. Rev.*, **107**, 4863-4890 (2007).
- 708 The Fate of Platinum in Pt/Ba/CeO₂ and Pt/Ba/Al₂O₃ Catalysts during Thermal Aging, M. Casapu, J.D. Grunwaldt, M. Maciejewski, A. Baiker, S. Eckhoff, U. Göbel, and M. Wittrock, *J. Catal.*, **251**, 28-38 (2007).
- 709 Continuous Catalytic One-Pot Multi-Step Synthesis of 2-Ethylhexanal from Crotonaldehyde, T. Seki, J.D. Grunwald and A. Baiker, *Chem. Commun.*, 3562-3564 (2007).
- 710 Enantioselective Allylic Substitution on Pd/Al₂O₃ Modified by Chiral Diphosphines, S. Reimann, T. Mallat, and A. Baiker, *J. Catal.*, **252**, 30-38 (2007).
- 711 Insight into the Structure of Supported Palladium-Catalysts during the Total Oxidation of Methane, J.D. Grunwaldt, N. van Vugten and A. Baiker, *Chem. Commun.*, 4635-4637 (2007).
- 712 Combined Liquid-Phase ATR-IR and XAS Study of the Bi-Promotion in the Aerobic Oxidation of Benzyl Alcohol over Pd/Al₂O₃, C. Mondelli, D. Ferri, J.D. Grunwaldt, F. Krumeich, S. Mangold, R. Psaro, and A. Baiker, *J. Catal.*, **252**, 77-87 (2007).
- 713 Flame Synthesized LaCoO₃-Supported Pd: 1. Structure, Thermal Stability and Reducibility, G. Chiarello, J.D. Grunwaldt, D. Ferri, F. Krumeich, C. Oliva, L. Forni, and A. Baiker, *J. Catal.*, **252**, 127-136 (2007).
- 714 Flame Synthesized LaCoO₃-Supported Pd: 2. Catalytic Behaviour in the Reduction of NO by H₂ under Lean Conditions, G. Chiarello, D. Ferri, J.D. Grunwaldt, L. Forni, A. Baiker, *J. Catal.*, **252**, 137-147 (2007).
- 715 Pulse Thermal Analysis, M. Maciejewski and A. Baiker, in *Handbook of Thermal Analysis and Calorimetry*, (M.E. Brown, P.K. Gallagher, Eds.) Vol. 5, Ch. 4, Elsevier, 2007, pp. 93-132.
- 716 Structural Effects in the Pd-induced Enantioselective Deprotection-Decarboxylation of β-Ketoesters, P. Kukula, V. Matoušek, T. Mallat, and A. Baiker, *Tetrahedron: Asymm.*, **18**, 2859-2868 (2007).
- 717 Comparative Study of Structural Properties and NO_x Storage-Reduction Behavior of Pt/Ba/CeO₂ and Pt/Ba/Al₂O₃, M. Casapu, J.D. Grunwaldt, M. Maciejewski, F. Krumeich, A. Baiker, S. Eckhoff, and M. Wittrock, *Appl. Catal. B*, **78**, 288-300 (2008).
- 718 Chiral Modification of Rh and Pt Surfaces: Effect of Rotational Flexibility of Cinchona Type Modifiers on their Adsorption Behavior, E. Schmidt, D. Ferri, A. Vargas, and A. Baiker, *J. Phys. Chem. C*, **112**, 3866-3874 (2008).

- 719 Adsorption of Quinoline and Naphthalene on Pt, Pd and Rh: a DFT Study, G. Santarossa, M. Iannuzzi, A. Vargas, and A. Baiker, *Phys. Chem. Phys.*, **9**, 401-413 (2008).
- 720 Metallic Glasses, A. Baiker and A. Molnar, in *Handbook of Heterogeneous Catalysis*, (G. Ertl, H. Knözinger, F. Schüth, J. Weitkamp, Eds.), 2nd Ed., Vol. 3, VCH, Weinheim, 2008, pp. 1285-1298.
- 721 Palladium Supported on an Acidic Resin: A Unique Bifunctional Catalyst for the Continuous Catalytic Hydrogenation of Organic Compounds in Supercritical CO₂, T. Seki, J.D. Grunwald and A. Baiker, *Adv. Synth. Catal.*, **350**, 691-705 (2008).
- 722 Mn(III)(salen)-Catalyzed Synthesis of Cyclic Organic Carbonates from Propylene and Styrene Oxide in Supercritical CO₂, F. Jutz, J.D. Grunwaldt, and A. Baiker, *J. Mol. Catal. A.*, **279**, 94-103 (2008).
- 723 Enantioselective Decarboxylation of β -Ketoesters with Pd-amino Alcohol Systems: Successive Metal- and Organocatalysis, P. Kukula, V. Matoušek, T. Mallat, A. Baiker, *Chem., Eur. J.*, **14**, 2699-2708 (2008).
- 724 Catalytic Aminations, T. Mallat, A. Baiker, W. Kleist and K. Köhler, in *Handbook of Heterogeneous Catalysis*, (G. Ertl, H. Knözinger, F. Schüth, J. Weitkamp, Eds.), 2nd Ed., Vol. 7, VCH, Weinheim, 2008, pp. 3584-3564.
- 725 Enhancement of Activity and Self-Reactivation of NSR Catalysts by Temporary Formation of BaPtO₃-Perovskite, M. Casapu, J.D. Grunwaldt, M. Maciejewski, A. Baiker, R. Hoyer, and S. Eckhoff, *Catal. Lett.*, **120**, 1-7 (2008).
- 726 Hydrothermal Formation of W/Mo-Oxides: A Comprehensive Approach, R. Kiebach, W. Bensch, J.D. Grunwaldt, A. Michailovski, A. Baiker, T. Fox, Y. Zhou, and G.R. Patzke, *Chem. Mat.*, **20**, 3022-3033 (2008).
- 727 Phase Transitions in Flame-Made Calcium Phosphates, M. Maciejewski, T.J. Brunner, S.F. Loher, A. Baiker, and W.J. Stark, *Thermochim. A.*, **468**, 75-80 (2008).
- 728 Chiral Surfaces and Enantioselective Catalysis, T. Mallat, S. Diezi and A. Baiker, in *Handbook of Heterogeneous Catalysis*, (G. Ertl, H. Knözinger, F. Schüth, J. Weitkamp, Eds.), 2nd Ed., Vol. 7, VCH, Weinheim, 2008, pp. 3603-3626.
- 729 Flame-made WO_x/TiO₂ Nanoparticles: Relation between Acidity, Structure and Photocatalytic Activity, K.K. Akurati, A. Vital, J.P. Dellemann, K. Michalow, T. Graule, D. Ferri, and A. Baiker, *Appl. Catal. B*, **79**, 53-62 (2008).
- 730 A New Efficient Heterogeneous Pd Catalyst for Enantioselective Allylic Substitution, S. Reimann, T. Mallat, and A. Baiker, *J. Catal.*, **254**, 79-83 (2008).
- 731 Adsorption Modes of Aromatic Ketones on Platinum and their Reactivity Towards Hydrogenation, A. Vargas, S. Reimann, S. Diezi, T. Mallat, and A. Baiker, *J. Mol. Catal. A.*, **282**, 1-8 (2008).

- 732 Oxidations of Alcohols with Molecular Oxygen, T. Mallat and A. Baiker, in *Handbook of Heterogeneous Catalysis*, (G. Ertl, H. Knözinger, F. Schüth, J. Weitkamp, Eds.), 2nd Ed., Vol. 7, VCH, Weinheim, 2008, pp. 3521-3538.
- 733 Heterogeneous Catalytic Hydrogenation in Supercritical Fluids: Potential and Limitations, T. Seki, J.D. Grunwaldt, and A. Baiker, *Ind. Eng. Chem. Res.*, **47**, 4561-4585 (2008).
- 734 Chiral Recognition on Catalytic Surfaces: Insight in a Biomimetic Heterogeneous Catalytic System, A. Vargas, G. Santarossa, M. Iannuzzi, and A. Baiker, *J. Phys. Chem. C*, **112**, 10200-10208 (2008).
- 735 Enantioselective Interactions at the Solid-Liquid Interface of an HPLC Column under Working Conditions, R. Wirz, D. Ferri, and A. Baiker, *Anal. Chem.*, **80**, 3572-3583 (2008).
- 736 Structure of Flame-made V₂O₅/TiO₂ and Catalytic Behavior in the Partial Oxidation of o-Xylene, B. Schimmoeller, H. Schulz, A. Ritter, A. Reitzmann, B. Kraushaar-Czarnetzki, A. Baiker, S. E. Pratsinis, *J. Catal.*, **256**, 74-83 (2008).
- 737 Spectroscopic and Theoretical Investigation of Hydrogen Bonding Interactions in Cinchonidine - 2-Methyl-2-Hexenoic Acid Complexes, D. M. Meier, A. Urakawa, N. Turrà, H. Rüegger, and A. Baiker, *J. Phys. Chem. A*, **112**, 6150-6158 (2008).
- 738 Copper-based Metal-Organic Framework for the Facile Ring-Opening of Epoxides, D. Jiang, T. Mallat, F. Krumeich, and A. Baiker, *J. Catal.*, **257**, 390-395 (2008).
- 739 Ru at Work in Ru-Hydroxyapatite during the Aerobic Oxidation of Benzyl Alcohol: An *in situ* ATR-IR Spectroscopy Study, C. Mondelli, D. Ferri and A. Baiker, *J. Catal.*, **258**, 170-176 (2008).
- 740 Conformational Behavior of Cinchonidine Revisited: A Combined Experimental and Theoretical Study, A. Urakawa, D. M. Meier, H. Rüegger, and A. Baiker, *J. Phys. Chem. A*, **112**, 7250-7255 (2008).
- 741 On-Chip Raman Analysis of Heterogeneous Catalytic Reaction in Supercritical CO₂: Phase Behavior Monitoring and Activity Profiling, A. Urakawa, F. Trachsel, P.R. von Rohr, and Alfons Baiker, *The Analyst*, **133**, 13521354 (2008).
- 742 Gold-Catalyzed Aerobic Oxidation of Benzyl Alcohol: Effect of Gold Particle Size on Catalytic Behavior in Different Solvents, P. Haider, B. Kimmerle, F. Krumeich, W. Kleist, J.D. Grunwaldt, and A. Baiker, *Catal. Lett.*, **125**, 169-176 (2008).
- 743 Phosphine-modified Pd/Al₂O₃ for Asymmetric Allylic Substitution, S. Reimann, T. Mallat, and A. Baiker, *Chim. Oggi*, **26** (Suppl.1) 23-25 (2008).
- 744 Sensitivity Enhancement and Dynamic Behavior Analysis by Modulation Excitation Spectroscopy: Principle and Application in Heterogeneous Catalysis, A. Urakawa, T. Bürgi, and A. Baiker, *Chem. Eng. Sci.*, **63**, 4902-4909 (2008).

- 745 On the Local Sensitivity of Different IR Techniques: Ba Species Relevant in NO_x Storage-Reduction, E. Roedel, A. Urakawa, S. Kureti, and A. Baiker, *Phys. Chem. Chem. Phys.*, **10**, 6190-6198 (2008).
- 746 Space- and Time-Resolved Combined DRIFT and Raman Spectroscopy: Monitoring Dynamic Surface and Bulk Processes during NO_x Storage-Reduction, A. Urakawa, N. Maeda, and A. Baiker, *Angew. Chem., Int. Ed.*, **47**, 9256-9259 (2008).
- 747 Modeling Bulk and Surface Pt using the Gaussian and Plane Waves DFT Formalism: Validation and Comparison to k-point Plane Waves Calculations, G. Santarossa, A. Vargas, M. Iannuzzi, C. Pignedoli, D. Passerone, and A. Baiker, *J. Chem. Phys.*, **129**, 234703 (2008).
- 748 Gold Supported on Mg, Al and Cu containing Mixed Oxides: Relation between Surface Properties and Catalytic Behavior in Aerobic Oxidation of 1-Phenylethanol, P. Haider, J.D. Grunwaldt, and A. Baiker, *Catal. Today*, **141**, 349-354 (2009).
- 749 In situ XAS Study of the Mn(III)(salen)Br Catalyzed Synthesis of Cyclic Organic Carbonates from Epoxides and CO₂, F. Jutz, J.D. Grunwaldt, and A. Baiker, *J. Mol. Catal. A*, **297**, 63-72 (2009).
- 750 In Situ Attenuated Total Reflection Infrared Spectroscopy of Imidazolium-Based Ionic Liquids under Supercritical CO₂, T. Seki, J.D. Grunwaldt, and A. Baiker, *J. Phys. Chem. B*, **113**, 114-122 (2009).
- 751 High Throughput Cell for X-ray Absorption Spectroscopy Applied to Study the Effect of Au on Rh-Catalyzed Partial Oxidation of Methane, B. Kimmerle, P. Haider, J.D. Grunwaldt, A. Baiker, P. Boye, and C. G. Schroer, *Appl. Catal. A*, **353**, 36-45 (2009).
- 752 NO_x Storage-Reduction Catalysis: From Mechanism and Materials Properties to Storage-Reduction Performance, S. Roy, and A. Baiker, *Chem. Rev.*, **109**, 4054-4091 (2009).
- 753 Gold Catalyzed Aerobic Oxidation of Dibenzylamine: Homogeneous or Heterogeneous Catalysis?, L. Aschwanden, T. Mallat, J.D. Grunwaldt, F. Krumeich, and A. Baiker, *J. Mol. Catal. A*, **300**, 111-115 (2009).
- 754 Influence of Pt Location on BaCO₃ or Al₂O₃ during NO_x Storage-Reduction, R. Büchel, R. Strobel, F. Krumeich, A. Baiker, and S.E. Pratsinis, *J. Catal.*, **261**, 201-207 (2009).
- 755 Structure and NO_x-Storage Behaviour of Flame-made BaCO₃ and Pt/BaCO₃ Nanoparticles, M. O. Symalla, A. Drochner, H. Vogel, R. Büchel, S. E. Pratsinis, and A. Baiker, *Appl. Catal. B*, **89**, 41-48 (2009).
- 756 Visualisation of the Ignition of Catalytic Partial Oxidation of Methane, B. Kimmerle, J.D. Grunwaldt, A. Baiker, P. Glatzel, P. Boye, S. Stephan, C. G. Schroer, *J. Phys. Chem. C*, **113**, 3037-3040 (2009).

- 757 Beneficial Interaction of Gold and Palladium in Bimetallic Catalysts for the Selective Aerobic Oxidation of Benzyl Alcohol, S. Marx and A. Baiker, *J. Phys. Chem. C*, **113**, 6191-6201 (2009).
- 758 Magnetically Separable Pt Catalyst for Asymmetric Hydrogenation, B. Panella, A. Vargas, and A. Baiker, *J. Catal.*, **261**, 88-93 (2009).
- 759 Adsorption-Desorption Induced Structural Changes of Cu-MOF Evidenced by Solid State NMR and EPR Spectroscopy, Y. Jiang, J. Huang, B. Kasumaj, G. Jeschke, M. Hunger, T. Mallat, and A. Baiker, *J. Amer. Chem. Soc.*, **131**, 2058-2059 (2009).
- 760 Remarkable Particle Size Effect in Rh-Catalyzed Enantioselective Hydrogenations, F. Hoxha, N. van Vugten, A. Urakawa, F. Krumeich, T. Mallat, and A. Baiker, *J. Catal.*, **261**, 224-231 (2009).
- 761 Selective Blocking of Active Sites on Supported Gold Catalysts by Adsorbed Thiols and its Effect on the Catalytic Behaviour. A Combined Catalytic, *in situ* ATR and DFT Study, P. Haider, A. Urakawa, E. Schmidt, and A. Baiker, *J. Mol. Catal. A: Chemical*, **305**, 161-169 (2009).
- 762 Simple Preparation of an Efficient Heterogeneous Gold Catalyst for Amine Oxidation, L. Aschwanden, T. Mallat, F. Krumeich, and A. Baiker, *J. Mol. Catal. A: Chemical*, **309**, 57-62 (2009).
- 763 Selective Oxidation Catalysis: Opportunities and Challenges, I. Hermans, E. Spiers, U. Neuenschwander, N. Turra, and A. Baiker, *Top. Catal.*, **52**, 1162-1174 (2009).
- 764 Catalytic Oxidations in Dense Carbon Dioxide, T. Seki and A. Baiker, *Chem. Rev.*, **109**, 2409-2454 (2009).
- 765 Magnetically Separable Gold Catalyst for Aerobic Oxidation of Amines, L. Aschwanden, B. Panella, P. Rossbach, B. Keller, and A. Baiker, *Chem. Cat. Chem.*, **1**, 111-115 (2009).
- 766 Advances in Infrared Spectroscopy of Catalytic Solid-Liquid Interfaces: The Case of the Selective Alcohol Oxidation, D. Ferri and A. Baiker, *Top. Catal.*, **52**, 1323-1333 (2009).
- 767 Design and Performance of a Flow-Through Polarization-Modulation Infrared Reflection-Absorption Spectroscopy Cell for Time-Resolved Simultaneous Surface and Liquid Phase Detection under Concentration and Temperature Perturbations, D.M. Meier, A. Urakawa, R. Mäder and A. Baiker, *Rev. Sci. Instrum.*, **80**, 094101 (2009).
- 768 Catalysts at Work: From Integral to Spatially Resolved X-ray Absorption Spectroscopy, J.D. Grunwaldt, B. Kimmerle, A. Baiker, P. Boye, C. Schroer, P. Glatzel, C. Borca, and F. Beckmann, *Catal. Today*, **145**, 267-278 (2009).
- 769 Space-Resolved Profiling Relevant in Heterogeneous Catalysis, A. Urakawa and A. Baiker, *Top. Catal.*, **52**, 1312-1322 (2009).

- 770 Ab Initio Assignments of FIR, MIR, and Raman Bands of Bulk Ba Species Relevant in NO_x Storage-Reduction, H. Hesske, A. Urakawa, and A. Baiker, *J. Phys. Chem. C*, **113**, 12286-12292 (2009).
- 771 Mixed-Linker Metal-Organic Frameworks as Catalysts for the Synthesis of Propylene Carbonate from Propylene Oxide and CO₂, W. Kleist, F. Jutz, M. Maciejewski and A. Baiker, *Eur. J. Inorg. Chem.*, 3552-3561 (2009).
- 772 Fundamental Aspects of the Chiral Modification of Platinum with Peptides: Asymmetric Induction in Hydrogenation of Activated Ketones, C. Mondelli, A. Vargas, G. Santarossa, and A. Baiker, *J. Phys. Chem. C*, **113**, 15246-15259 (2009).
- 773 Tracing the Acetalization in CO₂-Expanded Alcohols by In Situ Attenuated Total Reflection Infrared Spectroscopy, T. Seki, J.M. Andanson, F. Jutz, and A. Baiker, *Appl. Spectrosc.*, **63**, 1008-1014 (2009).
- 774 Supercritical CO₂ / Ionic Liquid Systems: What Can We Extract from Infrared and Raman Spectra?, J.M. Andanson, F. Jutz, and A. Baiker, *J. Phys. Chem. B*, **113**, 10249-10254 (2009).
- 775 Axial Changes of Catalyst Structure and Temperature in a Fixed-Bed Microreactor during Noble Metal Catalyzed Partial Oxidation of Methane, S. Hannemann, J.D. Grunwaldt, B. Kimmerle, A. Baiker, P. Boye, and C. Schroer, *Top. Catal.*, **52**, 1360-1370 (2009).
- 776 Integrating Eight Length Scales in Porous High Temperature Ceramics with Catalytic Function, M. Kamperman, A. Burns, R. Weissgraeber, N. van Vegten, S. C. Warren, S. M. Gruner, A. Baiker, and U. Wiesner, *Nano Lett.*, **9**, 2756-2762 (2009).
- 777 Shape-Selective Enantioselective Hydrogenation on Pt Nanoparticles, E. Schmidt, A. Vargas, T. Mallat and A. Baiker, *J. Amer. Chem. Soc.*, **131**, 12358-12367 (2009).
- 778 Polarization-Modulation Infrared Reflection-Absorption Spectroscopy Affording Time-Resolved Simultaneous Detection of Surface and Liquid Phase Species at Catalytic Solid-Liquid Interfaces, D.M. Meier, A. Urakawa, and A. Baiker, *Analyst*, **134**, 1779-1780 (2009).
- 779 Chemisorption of Methyl Mercaptane on Titania Supported Au Nanoparticles: Viability of Au Surface Area Determination, N. van Vegten, P. Haider, M. Maciejewski, F. Krumeich, and A. Baiker, *J. Colloid Interface Sci.*, **339**, 310-316 (2009).
- 780 Support Effects and Chemical Gradients along the Catalyst Bed in NO_x Storage-Reduction Studied by Space- and Time-Resolved *in situ* DRIFTS, N. Maeda, A. Urakawa, and A. Baiker, *J. Phys. Chem. C*, **113**, 16724-16735 (2009).
- 781 Chemical Availability and Reactivity of Functional Groups Grafted to Magnetic Nanoparticles Monitored *in-situ* by ATR-IR Spectroscopy, B. Panella, A. Vargas, D. Ferri, and A. Baiker, *Chem. Mater.*, **21**, 4316-4322 (2009).

- 782 Flame-made Pt/K/Al₂O₃ for NO_x Storage-Reduction (NSR) Catalysts, R. Büchel, R. Strobel, A. Baiker, and S.E. Pratsinis, *Top. Catal.*, **52**, 1799-1802 (2009).
- 783 Dynamic Structural Changes during the Ignition and Extinction of the Partial Oxidation of Methane Studied with Advanced QEXAFS Techniques, J.D. Grunwaldt, M. Beier, B. Kimmerle, A. Baiker, B. Griesebock, D. Lützenkirchen-Hecht, and R. Frahm, *Phys. Chem. Chem. Phys.*, **11**, 8779-8789 (2009).
- 784 Adsorption Behavior of Salicylic, Benzoic, and 2-Methyl-2-Hexenoic Acid on Alumina: An In Situ Modulation Excitation PM-IRRAS Study, D. M. Meier, A. Urakawa, and A. Baiker, *Phys. Chem. Chem. Phys.*, **11**, 10132-10139 (2009).
- 785 Effect of the Proximity of Pt to Ce or Ba in Pt/Ba/CeO₂ Catalysts on NO_x Storage-Reduction Performance, R. Büchel, R. Strobel, A. Baiker, and S.E. Pratsinis, *Top. Catal.*, **52**, 1709-1712 (2009).
- 786 Structural Properties, Redox Behavior and Methane Combustion Activity of Differently Supported Flame-made Pd Catalysts, N. van Vugten, M. Maciejewski, F. Krumeich, and A. Baiker, *Appl. Catal. B: Environmental*, **93**, 38-49 (2009).
- 787 Size Selectivity of Cu-MOF and Origin of Catalytic Activity in Epoxide Alcoholysis, D. Jiang, A. Urakawa, M. Yulikov, T. Mallat, G. Jeschke, and A. Baiker, *Chem. Eur. J.*, **15**, 12255-12262 (2009).
- 788 On the Mechanism of the SCR Reaction on Fe/HBEA Zeolites, D. Klukowski, P. Balle, B. Geiger, S. Kureti, B. Kimmerle, A. Baiker, and J.D. Grunwaldt, *Appl. Catal. B: Environmental*, **93**, 185-193 (2009).
- 789 Investigation of the Ignition Behaviour of the Noble Metal Catalysed Catalytic Partial Oxidation of Methane, J. Stötzel, D. Lützenkirchen-Hecht, R. Frahm, B. Kimmerle, A. Baiker, M. Nachtegaal, M. Beier, and J-D Grunwaldt, *J. Phys: Conf. Ser.*, **190**, 012162 (2009).
- 790 Influence of Pt-Ba Proximity on NO_x Storage-Reduction Mechanisms: A Space- and Time-Resolved In Situ Infrared Spectroscopic Study, N. Maeda, A. Urakawa, and A. Baiker, *Top. Catal.*, **52**, 1746-1751 (2009).
- 791 Insight into the Structure of Pd/ZrO₂ during the total Oxidation of Methane using Combined in situ XRD, X-ray Absorption and Raman Spectroscopy, J.D. Grunwaldt, N. van Vugten, A. Baiker, and W. van Beek, *J. Phys: Conf. Ser.*, **190** 012160 (2009).
- 792 A Green Pathway for Hydrogenations on Ionic Liquid Stabilized Nanoparticles, F. Jutz, J.M. Andanson, and A. Baiker, *J. Catal.*, **268**, 356-366 (2009).
- 793 Reduction and Re-oxidation of Cu/Al₂O₃ Catalysts Investigated with Quick-Scanning XANES and EXAFS, J. Stötzel, D. Lützenkirchen-Hecht, R. Frahm, B. Kimmerle, A. Baiker, M. Nachtegaal, M. Beier, and J-D. Grunwaldt, *J. Phys: Conf. Ser.*, **190**, 012153 (2009).

- 794 Fluxionality of Gold Nano-Particles investigated by Born-Oppenheimer Ab-initio Molecular Dynamics, A. Vargas, G. Santarossa, M. Iannuzzi, and A. Baiker, *Phys. Rev. B*, **80**, 195421 (2009).
- 795 In situ PM-IRRAS Study of Liquid-Phase Benzyl Alcohol Oxidation on Pd, D.M. Meier, A. Urakawa, and A. Baiker, *J. Phys. Chem. C*, **113**, 21849-21855 (2009).
- 796 Surface Reactions on Pt during NO_x Storage-Reduction Studied by Polarization-Modulation Infrared Reflection-Absorption Spectroscopy, N. Maeda, A. Urakawa, and A. Baiker, *J. Phys. Chem. Lett.*, **1**, 54-58 (2010).
- 797 Elucidation of Structure-Activity Relationships of Model Three Way Catalysts for the Combustion of Methane, M. Santhosh Kumar, A. Eyssler, P. Hug, N. van Vugten, A. Baiker, A. Weidenkaff, and D. Ferri, *Appl. Catal. B: Enviromental*, **94**, 77-84 (2010).
- 798 MOF-5 Based Mixed-Linker Metal-Organic Frameworks: Synthesis, Thermal Stability and Catalytic Application, W. Kleist, M. Maciejewski, and A. Baiker, *Thermochim. Acta*, **499**, 71-78 (2010).
- 799 Fine Tuning of Surface Acid-Base Properties of Single Step Flame-made Pt/Alumina, B. Schimmoeller, F. Hoxha, T. Mallat, F. Krumeich, S.E. Pratsinis, and A. Baiker *Appl. Catal. A*, **374**, 48-57 (2010).
- 800 Pt Nanoparticles: Crucial Role of Crystal Face and Colloid Stabilizer in Diastereoselective Hydrogenation of Cinchonidine, E. Schmidt, W. Kleist, F. Krumeich, T. Mallat, and A. Baiker, *Chem. Eur. J.*, **16**, 2181-2192 (2010).
- 801 Copper Metal-Organic Framework: Structure and Activity in the Allylic Oxidation of Cyclohexene with Molecular Oxygen, D. Jiang, T. Mallat, D. Meier, A. Urakawa, and A. Baiker, *J. Catal.*, **270**, 26-33 (2010).
- 802 Oscillatory Behavior of Catalytic Properties, Structure and Temperature during the Catalytic Partial Oxidation of Methane on Pd/Al₂O₃, B. Kimmerle, A. Baiker, J.D. Grunwaldt, *Phys. Chem. Chem. Phys.*, **12**, 2288-2291 (2010).
- 803 Simple in Situ Monitoring of a Complex Catalytic Reaction Network at High Pressure by Attenuated Total Reflection Fourier Transform Infrared Spectroscopy, J. M. Andanson, F. Jutz and A. Baiker, *Appl. Spectrosc.*, **64**, 286-292 (2010).
- 804 An Atomistic Picture of the Regeneration Process in Dye Sensitized Solar Cells, F. Schiffmann, J. VandeVondele, J. Hutter, A. Urakawa, R. Wirz, and A. Baiker, *Proc. Nat. Acad. Sci.*, **107**, 4830-4833 (2010).
- 805 Influence of Support Acid-Base Properties on Platinum-Catalyzed Enantioselective Hydrogenation of Activated Ketones, F. Hoxha, B. Schimmoeller, Z. Cakl, A. Urakawa, T. Mallat, S.E. Pratsinis, and A. Baiker, *J. Catal.*, **271**, 115-124 (2010).
- 806 Free Energy Surface of 2D/3D Transitions of Au 12 Nanoclusters by Means of Ab Initio Metadynamics, G. Santarossa, A. Vargas, M. Iannuzzi, and A. Baiker, *Phys. Rev. B*, **81**, 174205-1-174205-10 (2010).

- 807 Substrate-Controlled Adsorption of Cinchonidine during Enantioselective Hydrogenation on Platinum, E. Schmidt, T. Mallat, and A. Baiker, *J. Catal.*, **272**, 140-150 (2010).
- 808 Investigation of Binary and Ternary Systems of Ionic Liquids with Water and/or Supercritical CO₂ by in Situ Attenuated Total Reflection Infrared Spectroscopy, J.M. Andanson, F. Jutz, and A. Baiker, *J. Phys. Chem. B*, **114**, 2111-2117 (2010).
- 809 Role of Bi Promotion Effect and Solvent on Platinum-Catalyzed Alcohol Oxidation Examined by X-Ray Absorption and ATR-IR Spectroscopy, C. Mondelli, J.D. Grunwaldt, D. Ferri, and A. Baiker, *Phys. Chem. Chem. Phys.*, **12**, 5307-5316 (2010).
- 810 Single Step Flame-made Pt/MgAl₂O₄ - A NO_x Storage-Reduction Catalyst with Unprecedented Dynamic Behavior and High Thermal Stability, S. Roy, N. van Vugten, and A. Baiker, *J. Catal.*, **271**, 125-131 (2010).
- 811 Tuning of Functional Sites and Thermal Stability in Mixed-Linker MOFs based on MIL-53(Al), S. Marx, J. Huang, M. Maciejewski, W. Kleist, and A. Baiker, *Dalton Trans.*, **39**, 3795-3798 (2010).
- 812 Protonation Dependent Binding of Ruthenium Bipyridyl Complexes to the Anatase (101) Surface, F. Schiffmann, J. VandeVondele, J. Hutter, R. Wirz, A. Urakawa, and A. Baiker, *J. Phys. Chem. C*, **144**, 8398-8404 (2010).
- 813 Feasibility of Methyl Mercaptane as Probe Molecule for Supported Gold Nanoparticle Surface Area Determination, N. van Vugten, P. Haider, M. Maciejewski, F. Krumeich, and A. Baiker, *Chimia*, **64**, 191-194 (2010).
- 814 Flame-made MgAl_{2-x}M_xO₄ (M = Mn, Fe, Co) Mixed Oxides: Structural Properties and Catalytic Behavior in Methane Combustion, N. van Vugten, T. Baidya, F. Krumeich, W. Kleist, and A. Baiker, *Appl. Catal. B: Environmental*, **97**, 398-406 (2010).
- 815 A Novel Class of Fluorinated Cinchona Alkaloids as Surface Modifiers for the Heterogeneous Platinum-Catalyzed Enantioselective Hydrogenation of α -Ketoesters, C. Mondelli, C. Bucher, A. Baiker, and R. Gilmour, *J. Mol. Catal. A: General*, **327**, 87-91 (2010).
- 816 Development of a New Generation of Gold Catalysts for Amine Oxidation, L. Aschwanden, T. Mallat, M. Maciejewski, F. Krumeich, and A. Baiker, *ChemCatChem*, **2**, 666-673 (2010).
- 817 Structure of Flame-made Vanadia/Silica and Catalytic Behavior in the Oxidative Dehydrogenation of Propane, B. Schimmoeller, Y. Jiang, S. E. Pratsinis, and A. Baiker, *J. Catal.*, **274**, 64-75 (2010).
- 818 *In Situ* PM-IRRAS Study of Powder Catalyst: Dynamic Evolutions of Species on Catalyst and in Gas Phase during NO_x Storage-Reduction, E. Roedel, A. Urakawa, and A. Baiker, *Catal. Today*, **155**, 172-176 (2010).

- 819 Asymmetric Allylic Alkylation with Pd: How to Favor Heterogeneous or Homogeneous Catalysis?, S. Reimann, J-D. Grunwaldt, T. Mallat, and A. Baiker, *Chem. Eur. J.*, **16**, 9658 – 9668 (2010).
- 820 Metal-Support Interaction in Pt/Alumina: Inversion of Diastereoselectivity by Tuning the Acid-Base Properties of the Support, E. Schmidt, F. Hoxha, T. Mallat, and A. Baiker, *J. Catal.*, **274**, 117–120 (2010).
- 821 Increasing Brønsted Acidity of Flame-Derived Silica-Alumina up to Zeolitic Strength, J. Huang, N. van Vugten, Y. Jiang, M. Hunger, and A. Baiker, *Angew. Chem. Int. Ed.*, **122**, 7942 –7947 (2010).
- 822 Catalytic Deperoxidation of tert-Butylhydroperoxide with Cobalt(II)acetylacetone: Mechanism and Lessons for Aerobic Oxidation Catalysis, N. Turrà, U. Neuenschwander, A. Baiker, J. Peeters, and Ive Hermans, *Chem. Eur. J.*, **16**, 13226 – 13235 (2010).
- 823 Insights into Fundamental, Overtone, and Combination IR Bands of Surface and Bulk Ba(NO₃)₂ by ab initio Molecular Dynamics, H. Hesske, A. Urakawa, J. VandeVondele, J. Hutter, and A. Baiker, *J. Phys. Chem. C.*, **114**, 15042–15048 (2010).
- 824 Exploring Catalytic Solid/Liquid Interfaces by in situ Attenuated Total Reflection Infrared Spectroscopy, J. M. Andanson and A. Baiker, *Chem. Soc. Rev.*, **39** (12), 4571 – 4584 (2010).
- 825 BINAP Adsorption on Palladium: A Combined Infrared Spectroscopy and Theoretical Study, by S. Reimann, A. Urakawa, and A. Baiker, *J. Phys. Chem. C*, **114**, 17836– 17844 (2010).
- 826 Purification of an Ionic Liquid by Supercritical CO₂ Monitored by Infrared Spectroscopy, by J.M. Andanson, F. Jutz, and A. Baiker, *J. Supercritical Fluids*, **55** 395–400 (2010).
- 827 Effect of Dehydration on the Local Structure of Framework Aluminum Atoms in mixed-Linker MIL-53(Al) Materials Studied by Solid-State NMR Spectroscopy", by Y. Jiang, J. Huang, S. Marx, W. Kleist, M. Hunger, and A. Baiker, *J. Phys. Chem. Letters*, **1**, 2886–2890 (2010).
- 828 Experimental Determination and Modeling of the Phase Behavior for the Selective Oxidation of Benzyl Alcohol in Supercritical CO₂, I. Tsivintzelis, M. J. Beier, J-D. Grunwaldt, A. Baiker, and G. M. Kontogeorgis, *Fluid Phase Equilib.*, **302**, 83–92 (2011).
- 829 Ionic Liquids and Dense Carbon Dioxide: A Beneficial Biphasic System for Catalysis, F. Jutz, J.M. Andanson, and A. Baiker, *Chem. Rev.*, **111**, 322–353 (2011).
- 830 Oxidative Coupling of Methane over Ca- and Alkali Metal Doped ThO₂, T. Baidya, N. van Vugten, Y. Jiang, F. Krumeich, and A. Baiker, *Appl. Catal. A: General*, **391**, 205–214 (2011).

- 831 Influence of Controlled Spatial Distribution of Pt and Pd in NO_x Storage-Reduction Catalysts on their Efficiency, R. Büchel, A. Baiker and S.E. Pratsinis, *Appl. Catal. B: Environmental*, **101**, 682–689 (2011).
- 832 Structural Dependence of the Efficiency of Functionalization of Silica Coated FeO_x Magnetic Nanoparticles, I. Shnitko, A. Vargas, A. Teleki, S. Weyeneth, S. E. Pratsinis, and A. Baiker, *Appl. Surf. Sci.*, **257**, 2861–2869 (2011).
- 833 Platinum—Catalysed Hydrogenation of Acetophenone Derivatives: Tuning the Enantioselectivity via the Metal-Support Interaction", F. Hoxha, E. Schmidt, T. Mallat, B. Schimmoeller, S. E. Pratsinis, and A. Baiker, *J. Catal.*, **278**, 94–101 (2011).
- 834 Exchange of Hydrogen between a Platinum Surface and a Tertiary Amine: An ab initio Molecular Dynamics Investigation, A. Vargas, G. Santarossa, and A. Baiker, *J. Phys. Chem. C*, **115**, 1969–1977 (2011).
- 835 Polymer-Assisted Synthesis of Nanocrystalline $\text{Cu}_3(\text{BTC})_2$ Metal-Organic Framework for Amine Oxidation, D. M. Jiang, T. Mallat, F. Krumeich, and A. Baiker, *Catal. Commun.*, **12**, 602–605 (2011).
- 836 Influence of Ba Precursor on Structural and Catalytic Properties of Pt-Ba/alumina NO_x Storage-Reduction Catalyst, N. Maeda, A. Urakawa, R. Sharma, and A. Baiker, *Appl. Catal. B: Environmental*, **103**, 154–162 (2011).
- 837 Identification of the Active Species Generated from Supported Pd Catalysts in Heck Reactions: An in situ Quick Scanning EXAFS Investigation, S. Reimann, J. Stötzel, R. Frahm, W. Kleist, J.D. Grunwaldt, and A. Baiker, *J. Amer. Chem. Soc.* **133**, 3921–3930 (2011).
- 838 Flame Aerosol Synthesis of Metal Oxide Catalysts with Unprecedented Structural and Catalytic Properties, B. Schimmoeller, S. E. Pratsinis, and A. Baiker, *ChemCatChem*, **3**, 1234 – 1256 (2011).
- 839 Multiple Cycle Reaction Mechanism in the Enantioselective Hydrogenation of Trifluoromethyl Ketones, Z. Cakl, S. Reimann, E. Schmidt, A. Moreno, T. Mallat, and A. Baiker, *J. Catal.*, **280**, 104–115 (2011).
- 840 Ab initio Molecular Dynamics Investigation of the Coadsorption of Acetaldehyde and Hydrogen on a Platinum Nanocluster, A. Vargas, G. Santarossa, and A. Baiker, *J. Phys. Chem. C*, **115**, 10661-10667 (2011).
- 841 Theoretical Study of (110) Surface of $\text{Sn}_{1-x}\text{Ti}_x\text{O}_2$ Solid Solutions with different Distribution and Content of Ti, K. R. Hahn, A. Tricoli, G. Santarossa, A. Vargas, and A. Baiker, *Surf. Sci.*, **605**, 1476–1482 (2011).
- 842 Surface Properties of Supported Colloid-Derived Gold/Palladium Mono- and Bimetallic Nanoparticles, S. Marx, F. Krumeich, and A. Baiker, *J. Phys. Chem. C*, **115**, 8195–8205 (2011).

- 843 Characterization of AuPd Nanoparticles by Probe-Corrected Scanning Transmission Electron Microscopy and X-Ray Absorption Spectroscopy, F. Krumeich, S. Marx, A. Baiker, and R. Nesper, *Z. Anorg. Allg. Chem.*, **637**, 875–881 (2011).
- 844 Synthesis, Structural Properties and Catalytic Behavior of Cu-BTC and Mixed-Linker Cu-BTC-PyDC in the Oxidation of Benzene Derivatives, S. Marx, W. Kleist, and A. Baiker, *J. Catal.*, **281**, 76–87 (2011).
- 845 Selective Conversion of Ethane to Ethene via Oxidative Dehydrogenation over Ca Doped ThO₂ using CO₂ as Oxidant, T. Baidya, N. van Vugten, and A. Baiker, *Top. Catal.*, **54**, 881–887 (2011).
- 846 Binary Ionic Liquids with a Common Cation: Insight into Nanoscopic Mixing by Infrared Spectroscopy, J. M. Andanson, M. J. Beier, and A. Baiker, *J. Phys. Chem. Lett.*, **2**, 2959–2964 (2011).
- 847 Redox Properties of Supported Copper Catalysts Studied in Liquid and Gas Phase by *in situ* ATR-IR and XAS, C. Mondelli, D. Ferri, J.-D. Grunwaldt, N. Ravasio, and A. Baiker, *Catalysis Today*, **178**, 124–131 (2011).
- 848 SrO·Al₂O₃ Mixed Oxides: A Promising Class of Catalysts for Oxidative Coupling of Methane, T. Baidya, N. van Vugten, R. Verel, Y. Jiang, M. Yulikov, T. Kohn, G. Jeschke, and A. Baiker, *J. Catal.*, **281**, 241–253 (2011).
- 849 Tuning the Support Acidity of Flame-made Pd/SiO₂-Al₂O₃ Catalysts for Chemoselective Hydrogenation, J. Huang, Y. Jiang, N. van Vugten, M. Hunger, and A. Baiker, *J. Catal.*, **281**, 352–360 (2011).
- 850 Catalysis with Chirally Modified Metal Surfaces: Scope and Mechanism, A. Vargas, C. Mondelli, and A. Baiker, in *Catalytic Methods in Asymmetric Synthesis: Advanced Materials, Techniques, and Applications*, (M. Gruttaduria, F. Giacalone, Eds.), Chapter 6, John Wiley & Sons, Inc., 2011, pp. 291–321.
- 851 Reactions in Sacrificial Solvents, T. Mallat and A. Baiker, *Catal. Sci. & Techn.*, **1**, 1572–1583 (2011).
- 852 Asymmetric Hydrogenation on Chirally Modified Pt: Origin of Hydrogen in the N–H–O Interaction between Cinchonidine and Ketone, N. Maeda, K. Hungerbühler, and A. Baiker, *J. Amer. Chem. Soc.*, **133**, 19567–19569 (2011).
- 853 Aerobic Epoxidation of Olefins Catalyzed by the Cobalt-Based Metal Organic Framework STA-12(Co), M. Beier, W. Kleist, R. Kissner, M.T. Wharmby, B. Kimmerle, P.A. Wright, J-D. Grunwaldt, and A. Baiker, *Chem. Eur. J.*, **18**, 887 – 898 (2012).
- 854 Fundamental Insights into the Enantioselectivity of Hydrogenations on Cinchona-Modified Platinum and Palladium, E. Schmidt, C. Bucher, G. Santarossa, T. Mallat, R. Gilmour, and A. Baiker, *J. Catal.*, **289**, 238–248 (2012).

- 855 Selective Oxidation of Benzyl Alcohol in Dense CO₂: Insight by Phase Behavior Modeling, M. J. Beier, J.D. Grunwaldt, I. Tsivintzelis, A.D. Jensen, G.M. Kontogeorgis, and A. Baiker, *J. Supercritical Fluids*, **63**, 199–207 (2012).
- 856 Mono- and Bimetallic Rh and Pt NSR-Catalysts Prepared by Controlled Deposition of Noble Metals on Support or Storage Component, R. Büchel, A. Baiker, and S.E. Pratsinis, *Appl. Catal. B: Environmental*, **113/114**, 160– 171 (2012).
- 857 Potential of Gold Nanoparticles for Oxidation in Fine Chemical Synthesis, T. Mallat and A. Baiker, *Annu. Rev. Chem. Biomol. Eng.*, **3**, 11–28 (2012).
- 858 First Principles Analysis of H₂O Adsorption on the (110) Surface of SnO₂, TiO₂ and their Solid Solutions, K. R. Hahn, A. Tricoli, G. Santarossa, A. Vargas, and A. Baiker, *Langmuir*, **28**, 1646–1656 (2012).
- 859 Ionic Liquid Supported Pt Nanoparticles as Catalysts for Enantioselective Hydrogenation, M.J. Beier, J-M. Andanson, T. Mallat, F. Krumeich, and A. Baiker, *ACS Catalysis*, **2**, 337–340 (2012).
- 860 Heterogeneous Asymmetric Hydrogenation of Activated Ketones: Mechanistic Insight into the Role of Alcohol Product by In Situ Attenuated Total Reflection IR Spectroscopy, N. Maeda, S. Sano, T. Mallat, K. Hungerbühler, and A. Baiker, *J. Phys. Chem. C*, **116**, 4182–4188 (2012).
- 861 Selective Hydrogenation of Cyclohexenone on Iron-Ruthenium Nanoparticles Suspended in Ionic Liquids and CO₂-expanded Ionic Liquids, J.M. Andanson, S. Marx, and A. Baiker, *Catal. Sci. & Techn.*, **2**, 1403–1409 (2012).
- 862 Heterogeneous Asymmetric Hydrogenation of Prochiral Alkenoic Acid: Origin of Rate and Enantioselectivity Enhancement by Amine Addition, F. Meemken, N. Maeda, K. Hungerbühler, and A. Baiker, *ACS Catalysis* **2**, 464–467 (2012).
- 863 Potential of Ionic Liquids as Co-Modifiers in Asymmetric Hydrogenation on Platinum, S. Sano, M. Beier, T. Mallat, and A. Baiker, *J. Mol. Catal. A: Chemical*, **357**, 117– 124 (2012).
- 864 NO_x Storage and Reduction over M/MgAl₂O₄ (M = Pt, Pd, and Rh): A Comparative Study, S. Roy, N. van Vegten, N. Maeda, and A. Baiker, *Appl. Catal. B: Environmental*, **119/120**, 279– 286 (2012).
- 865 Solvent-free Hydrodeoxygenation of Cyclopentanone and Acetophenone on Flame-made Bimetallic Pt-Pd/ZrO₂ Catalysts, Y. Jiang, R. Büchel, J. Huang, F. Krumeich, S. E. Pratsinis, and A. Baiker, *ChemSusChem* , **5**, 1190 – 1194 (2012).
- 866 Hydrogenation of 2,2,2-Trifluoroacetophenone: Molecular Insight into the Role of Solvent in Enantioselection, R. Pereniguez, G. Santarossa, T. Mallat, and A. Baiker, *J. Mol. Catal. A: Chemical*, **365**, 39-49 (2012).

- 867 Fluid Phase Equilibria of the Reaction Mixture during the Selective Hydrogenation of 2-Butenal in Dense Carbon Dioxide, N.E. Musko, A.D. Jensen, A. Baiker, J.D. Grunwaldt, and G. M. Kontogeorgis, *Appl. Catal. A: General*, **443-444**, 67–75 (2012).
- 868 Platinum-Catalyzed Asymmetric Hydrogenation: Spectroscopic Evidence for O-H-O Hydrogen Bond Interaction between Substrate and Modifier, F. Meemken, N. Maeda, K. Hungerbuhler, and A. Baiker, *Angew. Chem. Int. Ed.*, **51**, 8212 –8216 (2012).
- 869 Highly Cross-Linked Imidazolium Salts Entrapped Magnetic Nanoparticles – Preparation and Uses, P. Agrigento, M. Beier, J. Knijnenburg, S.E. Pratsinis, A. Baiker, and M. Gruttaduria, *J. Mater. Chem.* **22**, 20728–20735 (2012).
- 870 Selective Spectroscopic Detection of Active Species on Catalytic Solid-Gas Interface: Steady-State versus Dynamic Method, N. Maeda, F. Meemken, K. Hungerbuhler, and A. Baiker, *Chimia*, **66**, 664-667 (2012).
- 871 Molecular Insight into Pt-Catalyzed Chemoselective Hydrogenation of an Aromatic Ketone by In Situ Modulation-Excitation IR Spectroscopy, M. Chen, N. Maeda, A. Baiker, and J. Huang, *ACS Catalysis*, **2**, 2007–2013 (2012).
- 872 Tuning the Chemoselective Hydrogenation of Vinyl Nitrobenzenes Catalyzed by Ionic Liquid Supported Pt Nanoparticles, M. Beier, J-M. Andanson and A. Baiker, *ACS Catalysis*, **2**, 2587–2595 (2012).
- 873 Platin-katalysierte Asymmetrische Hydrierung: Spektroskopischer Nachweis einer O-H-O-Brücke zwischen Substrat und chiralem Modifikator, F. Meemken, N. Maeda, K. Hungerbuhler, and A. Baiker, *Angew. Chem.* **124**, 8336 –8340 (2012).
- 874 Structural Properties of Alumina- and Silica-Supported Iridium and their Behaviour in the Enantioselective Hydrogenation of Ethyl Pyruvate, A.B. Dongil, B. Bachiller-Baez, I. Rodríguez-Ramosa, A. Guerrero-Ruiz, C. Mondelli, and A. Baiker, *Appl. Catal A: General*, **451**, 14–20 (2013).
- 875 Selectivity-Controlling Factor in Catalytic Methanol Amination Studied by Isotopically-Modulated Excitation IR Spectroscopy, N. Maeda, F. Meemken, and A. Baiker, *ACS Catalysis*, **3**, 219–223 (2013).
- 876 Towards Environmentally Benign Catalytic Oxidation, A. Baiker and T. Mallat, *Catal. Sci. & Tech.* **3**, 267 (2013).
- 877 Water Adsorption on the SnO₂ (110) Surface Studied by Static and Dynamic Ab Initio Calculations, G. Santarossa, K. Hahn, and A. Baiker, *Langmuir*, **29**, 5487–5499 (2013).
- 878 Insight into the Role of Hydrogen in Preferential Oxidation of Carbon Monoxide by Isotope-Modulated Excitation IR Spectroscopy, N. Maeda, F. Meemken, and A. Baiker, *ChemCatChem* **5**, 2199 – 2202 (2013).

- 879 Interactions of 1-Ethyl-3-methyl-imidazolium Trifluoromethanesulfonate Ionic Liquid with Alumina Nanoparticles and Organic Solvents Studied by Infrared Spectroscopy, J.M. Andanson and A. Baiker, *J. Phys. Chem C*, **117**, 12210–12217 (2013).
- 880 Efficient Acid-catalysed Conversion of Phenylglyoxal to Mandelates on Flame Derived Silica/Alumina, Z. Wang, Y. Jiang, A. Baiker, and J. Huang, *ACS Catalysis*, **3**, 1573–1577 (2013).
- 881 In-situ Modulation Excitation IR study on the Dominant Product of Pt-catalyzed Aromatic Ketone Hydrogenation, M. Chen, N. Maeda, A. Baiker, and J. Huang, *Adv. Mater. Res.* **683**, 271-274 (2013).
- 882 Experimental Determination and Modelling of the Phase Behaviour for the Direct Synthesis of Dimethyl Carbonate from Methanol and Carbon Dioxide, I. Tsivintzelis, N.E. Musko, A. Baiker, J.D. Grunwaldt, and G. M. Kontogeorgis, *J. Supercritical Fluids*, **84**, 155-163 (2013).
- 883 Chiral Modification of Platinum by Co-adsorbed Cinchonidine and Trifluoroacetic acid: Origin of Enhanced Stereocontrol in the Hydrogenation of Trifluoroacetophenone, F. Meemken, A. Baiker, S. Schenker, and K. Hungerbühler, *Chem. Eur. J.* **20**, 1298 –1309 (2014).
- 884 Asymmetric Catalysis on Cinchonidine-Modified Pt/alumina: Kinetics and Isotope Effect in the Hydrogenation of Trifluoroacetophenone, F. Meemken, A. Baiker, J. Dupre, and K. Hungerbühler, *ACS Catalysis*, **4**, 344–354 (2014).
- 885 Effect of Ba and K Addition and Controlled Spatial Deposition of Rh in Rh/Al₂O₃ Catalysts for CO₂ Hydrogenation, R. Büchel, A. Baiker, and S.E. Pratsinis, *Appl. Catal. A: General*, **477**, 93–101 (2014).
- 886 Operando Monitoring of Surface Processes during Asymmetric Hydrogenation of Ketones on Chirally-Modified Platinum, Catalyst, F. Meemken, K. Hungerbühler, and A. Baiker, *Angew. Chem. Int. Ed.*, **53**, 8640 –8644 (2014).
- 887 Oxidative Coupling of Methane on Flame-made Mn-Na₂WO₄/SiO₂: Influence of Catalyst Composition and Reaction Conditions, R. Koirala, R. Büchel, A. Baiker, S. E. Pratsinis, *Appl. Catal. A: General*, **484**, 97–107 (2014).
- 888 Simultaneous Time-Resolved Probing of Bulk liquid Phase and Catalytic Solid-Liquid Interface under Reaction Conditions using Attenuated Total Reflection Infrared Spectroscopy, F. Meemken, P. Müller, A. Baiker, and K. Hungerbühler, *Rev. Sci. Instrum.*, **85**, 084101 (2014).
- 889 Catalytic Performance of Brønsted and Lewis Acid Sites in Phenylglyoxal Conversion on Flame-derived Silica-Zirconia, Z.Wang, Y.Jiang, M. Hunger, A. Baiker, and J. Huang, *ChemCatChem*, **6**, 2970 – 2975 (2014).
- 890 Oxidative Dehydrogenation of Ethane with CO₂ over Flame-Made Ga Loaded TiO₂, R. Koirala, R. Büchel, F. Krumeich, S.E. Pratsinis, A. Baiker, *ACS Catalysis*, **5**, 690–702 (2015).

- 891 Comparative Studies on the Catalytic Activity and Structure of Cu-MOF and its Precursor for Alcoholysis of Cyclohexene Oxide, Y. Jiang, J. Huang, M. Hunger, M. Maciejewski, and A. Baiker, , *Catal. Sci & Tech.* **5**, 897-902 (2015).
- 892 Assessment of Recent Process Analytical Technology (PAT) Trends: A Multiauthor Review. S.L. Levante, H. Pataki, G. Marosi, F. Meemken, K. Hungerbühler, A. Baiker et al. *Org. Process Res. Dev.*, **19**, 3–62 (2015).
- 893 Stability of Chiral Modifiers based on 1-(1-Naphthyl)-ethylamine for Pt Catalysed Heterogeneous Asymmetric Hydrogenations, F. Meemken, T. Steiger, M. Holland, R. Gilmour, K. Hungerbühler and A. Baiker, *Catal. Sci & Tech.*, **5**, 705 - 715 (2015).
- 894 Synthetic Chiral Surface Modifiers Derived from Imidazolidinone and Proline for the Pt-Catalyzed Asymmetric Hydrogenation of Activated Ketones. M. Holland, F. Meemken, A. Baiker, and R. Gilmour. *J. Mol. Catal. A: General*, **396**, 335–345 (2015).
- 895 Catalysis on Chiral Surfaces: From Fundamental Aspects to Application. A. Baiker, *Catal. Sci & Tech.* **5**, 636 – 637 (2015).
- 896 Influence of Support Acidity on the Catalytic Performance of Pt Nanoparticles in the Chemoselective Hydrogenation of Acetophenone over Pt/[Al]MCM-41. Z. Wang, K. D. Kima, C. Zhou, M. Chen, N. Maeda, Z. Liu, J. Shi, A. Baiker, M. Hunger, and J. Huang, *Catal. Sci & Tech.*, **5**, 2788-2797 (2015).
- 897 Crucial Aspects in the Design of Chirally Modified Nobel Metal Catalysts for Asymmetric Hydrogenation of Activated Ketones. A. Baiker, *Chem. Soc. Rev.* **44**, 7449-7464 (2015),
- 898 Chiral Modification of Platinum: Ab initio Study of the Effect of Hydrogen Coadsorption on Stability and Geometry of Adsorbed Cinchona Alkaloids. K. R. Hahn, A. Seitsonen, A. Baiker, *Phys.Chem.Chem.Phys.* **17**, 27615--27629 (2015),
- 899 Enantioselection on Heterogeneous Noble Metal Catalyst: Proline Induced Asymmetry in the Hydrogenation of Isophorone on Pd Catalyst. L. Rodriguez, K. Hungerbühler, A. Baiker, and F. Meemken, *J. Amer. Chem. Soc.*, **137** (37), 12121-12130 (2015).

PATENTS

- P1 "Verfahren zur Herstellung von tertiären aliphatischen Aminen" *Inventors:* A. Baiker, P. Gysi and W. Richarz; *Priority:* **Swiss. Pat. Appl. 1483**, 8. 2. 1977.
- P2 "Kontinuierliches Verfahren zur Herstellung von tertiären aliphatischen Aminen" *Inventors:* A. Baiker, P. Gysi and W. Richarz **DE Pat. 2,709,864**, 17. 8. 1978.
- P3 "Verfahren zur Herstellung von katalytisch wirksamen glasig erstarrten Metallen" *Inventors:* A. Baiker, H.J. Güntherodt, V. Franzen, E. Armbruster and H. Baris. *Priority:* **Swiss Pat. Appl. 3679**, 27. 7. 1984.
- P4 "Catalytically Active Vitrified Metals" *Inventors:* A. Baiker, H.J. Güntherodt, V. Franzen, E. Armbruster and H. Baris, **Europ. Pat. 173088**, 5. 3. 1986 (Designated contracting states: **AT, Be, CH, DE, FR, GB, IT, LU, NL, SE**); **DD Pat. 239347**, 23. 7. 1986; **U.S. Pat. 4735789**; 18. 5. 1987; **U.S. Pat. 4727202**, 23. 2. 1988, **U.S. Pat. Appl. 833237**, 27. 2. 1986; **U.S. Pat. Appl. 833238**, 27. 2. 1986; **U.S. Pat. Appl. 833239**, 27. 2. 1986; **U.S. Pat. Appl. 80198**, 31. 6. 1988.
- P5 "Katalysatoren zur reduktiven Umwandlung von Stickoxiden in Abgasen" *Inventors:* A. Baiker, P. Dollenmeier and M. Glinski. *Priority:* **Swiss Pat. Appl. 1556**, 17. 4. 1986.
- P6 "Catalyst for Reductive Conversion of Nitrogen Oxides in Waste Gases" *Inventors:* A. Baiker, P. Dollenmeier and M. Glinski, **Europ. Pat. 256209**, 10. 4. 1987 (Designated contracting states: **AT, CH, DE, GB, NL, SE**); **U.S. Pat. 4742037**, 3. 5. 1988.
- P7 "Katalysatoren für die Hydrierung von Kohlendioxid" *Inventors:* A. Baiker and G. Linden. *Priority:* **Swiss Pat. Appl. 4412**, 5. 11. 1986.
- P8 "Process for the Hydrogenation of Carbon Dioxide" *Inventors:* A. Baiker and G. Linden; **Europ. Pat. 266727**, 2.11.1987 (Designated contracting states: **AT, CH, DE, GB, NL, SE**); **U.S Pat Appl. 116145**, 3. 11. 1987; **U.S. Pat. Appl. 143337**, 10. 3 1988; **Japan Pat. 152332/8**, 2.11.1987.
- P9 "Katalysatoren für die Oxidation von Kohlenstoff-Verbindungen" *Inventors:* A. Baiker and D. Gasser. *Priority:* **Swiss Pat. Appl. 2685**, 14. 7. 1987.
- P10 "Catalyst for the Oxidation of Volatile Carbon Containing Compounds" *Inventors:* A. Baiker and D. Gasser. **Europ. Pat Appl. 88111336.9**, 14. 7. 1988. (Designated contracting states: **AT, BE, CH, DE, ES, FR, GB, IT, NL, SE**).
- P11 "Catalytic Reduction of Nitrogen Oxide Compounds Especially Nitric Oxide in Gas Mixtures. - Includes using X-ray Amorphous Chromium Tri:oxide with High Activity at Low Temperature and Preparation of Catalyst by Slow Precipitation". *Inventor:* A. Baiker, **Swiss Pat. CH682134-A**; **CH682134-A5**, 30.07.1990.

- P12 "Supported Catalyst Production used for Denitrification of Waste Combustion Gas by Coating Pretreated Support from Gas Phase and after Treatment to Convert Coating to Catalytically Active Material" Inventors: A. Baiker and J. Nickl, Priority: *Swiss Pat. CH682545-A5*. 15.10.1993.
- P13 "Heterogeneous Catalysts for Epoxidation of Olefinically Unsaturated Compounds. with Organic Hydroperoxide(s) are Obtained by Producing Sol from Silicon Alkoxide and Chelated Titanium Alkoxide, Gelling and Ageing the Solution before Drying using Supercritical Carbon Dioxide, and opt. Calcining Resulting Aerogel" Inventors A. Baiker, D. Dutoit and R. Hutter, Patents *EP783371-A; WO9609117-A; WO9609117-A1; EP783371-A1; EP783371-B1; JP10505785-W; DE69503142-E; KR97706066-A; ES2119473-T3; US5935895-A; CN1158578-A; KR391533-B; CN1070730-C*.
- P14 "Heterogeneous Epoxidation Catalysts", *Inventors*: A. Baiker, D. Dutoit and R. Hutter, *Int. Pat. Appl.* PCT/EP95/03530, 08.09. 1995.
- P15 "Verfahren zur Synthese von Ameisensäure und ihren Derivaten" *Inventors*: A. Baiker, O. Kröcher, and R. A. Köppel, *Swiss Pat. Appl. 3103*, 18. 12, 1996.
- P16 "Catalytic Synthesis of Primary Aliphatic Polyamines" *Inventors*: A. Baiker, A. Fischer and T. Mallat *Europ. Pat. Appl.* 98-113-540.3, 21.7.1998.
- P17 "Catalytic Synthesis of Primary Diaminocyclohexanes" *Inventors*: A. Baiker, A. Fischer and T. Mallat *Europ. Pat. Appl.*, PCT/EP 99/08553, 12.11.1998.
- P18 "Continuous Process for the Hydrogenation of α -Ketocarbonyl Compounds" Inventors: A. Baiker, N. Künzle and T. Mallat. *Europ. Pat. Appl.*, 99/112078.3, 23.7.1999. (Designated contracting states: **AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE**).
- P19 "Verfahren zur enantioselektiven Hydrierung von substituierten 2-Pyronen mittels heterogener Katalyse" *Inventors*: A. Baiker, R Huck, T. Mallat, *Swiss Patent Appl.* 1498/01, 14. 08, 2001.
- P20 "Process for Preparation of Amines" *Inventors*: A. Baiker, A. Fischer, T. Mallat and O. Werbitzky. *U.S. Pat. 6,376,713 B1*, 23.04.2002.
- P21 "Process for the Production of Molybdenum Oxide, Molybdenum Oxide Produced from this Process and Use thereof" *Inventors*: R. Nesper, F. Krumeich, M. Niederberger, A. Baiker, and F. Eigenmann, *Europ. Pat Appl.* 01 810 072.2, 25.01.2001. (Designated contracting states: **AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE**).
- P22 "Method for Producing Cyclohexanediamines", *Inventors*: A. Baiker, T. Mallat and A. Fischer, *U.S. Pat. 6,369,274 B1*, 09.04.2002.
- P23 "Production of Metal Salts e.g. Calcium and Phosphate Salts involves Forming a Mixture of a Metal Source and an Anion Source into Droplets and Oxidizing the

Droplets in a High Temperature Environment ", *Inventors:* S. Loher, W. Stark, M. Maciejewski, S.E. Pratsinis, and A. Baiker, **WO 2005087660-A1**, 22.8.2005.

- P24 "Multi-Nozzle Flame Aerosol Synthesis of Nanopowders of Controlled Segregation or Mixedness of Individual Nanoparticles", *Inventors:* R. Strobel, L. Mädler, S.E. Pratsinis, and A. Baiker, **WO 2006/119653- A1**, 16.11.2006.
- P25 "Reactivation of Thermally Aged Nitrogen Oxide Storage Catalyst, Comprises Decomposing Compounds of Strontium and/or Barium with Substrate by Treating with Gas Mixture Comprising Nitrogen Dioxide, Water Vapor and Carbon Dioxide", Inventors: U. Witrock, U. Göbel, T. Kreuzer, M. Casapu, M. Maciejewski, J.D. Grunwaldt, and A. Baiker, **WO 2007/009679-A2, DE102005034344-A1, EP1877187-A2**, 25.01.2007.
- P26 "Zweistufiges Verfahren zur Reaktivierung thermisch gealterter Stickoxid-Speicherkatalysatoren", Erfinder: M. Casapu, J.D. Grunwaldt, M. Maciejewski, and A. Baiker, German Patent **DE 102007023979**, 27.11.2008.
- P27 "Method for the Reactivation of Thermally Aged Nitrogen Oxide Storage Catalytic Converters", Inventors: U. Witrock, U. Göbel, T. Kreuzer, M. Casapu, J.D. Grunwaldt, M. Maciejewski, and A. Baiker, **US 2009/0131243-A1**, 21. 05.2009.
- P28 "Reactivating a Thermally Aged Nitrogen Oxide Storage Catalyst, Useful for Cleaning Exhaust Gas of Vehicle, Comprises Heating Catalyst in Gas Mixture having Reducing Agent and Treating Catalyst with Gas Mixture having Nitrogen Dioxide", Inventors: S. Eckhoff, M. Wittrock, U. Goebel, I. Grissede, R. Hoyer, W. Müller, T. Kreuzer, M. Casapu, J.D. Grunwaldt, M. Maciejewski, and A. Baiker, **DE102007023979-A1; WO2008141875-A1; DE102007023979-B4; EP2155387-A1; KR2010017187-A; CA2687615-A1; JP2010527759-W.**, 2009.