

## **Anlage II: Forschungsprofile der antragstellenden Wissenschaftler**

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**Wissenschaftlicher Werdegang:**


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1962	Geboren in Gudensberg
1968–1981	Grundschule in Edermünde/Besse; König-Heinrich-Gymnasium in Fritzlar
1981–1982	Grundwehrdienst in Zweibrücken und Homberg/Efze
1982–1987	Diplom-Chemie-Studium an der Georg-August-Universität zu Göttingen
1986–1987	Diplomarbeit am Organisch-Chemischen Institut der Georg-August-Universität zu Göttingen unter der Leitung von Prof. Dr. L. F. Tietze über das Thema: <i>Synthese von aminosäureverknüpften Aldophosphamidglucosiden</i> ; Diplom-Chemiker-Examen
1987–1989	Dissertation am Organisch-Chemischen Institut der Georg-August-Universität zu Göttingen unter der Leitung von Prof. Dr. L. F. Tietze über das Thema: <i>Entwicklung und Anwendung neuer Methoden zur Synthese von Antitumormitteln und antiviraler Wirkstoffe</i> ; wissenschaftlicher Angestellter am Organisch-Chemischen-Institut; Promotion zum Dr. rer. nat. (Gesamtnote summa cum laude)
1990	Liebig-Stipendiat des Verbandes der Chemischen Industrie
1991–1993	Laborleiter in der Gruppe „Metallorganische Chemie – Katalyse“ im Hauptlabor der Hoechst AG in Frankfurt a. M.
1993–1994	Gruppenleiter der o.g. Gruppe „Metallorganische Chemie – Katalyse“
1994–1995	Projektleiter des Projektes „Homogene Katalyse“ in der Zentralforschung der Hoechst AG mit Personal- und Budgetverantwortung für acht Naturwissenschaftler und elf tarifliche Mitarbeiter; Betreuung von drei Diplomarbeiten
1996	Ernennung zum C3-Professor für Anorganische Chemie an der TU München
1998	Ernennung zum Direktor des Instituts für Organische Katalyseforschung an der Universität Rostock e.V. (IfOK) verbunden mit einer C4-Professur „Katalyse“ an der Universität Rostock
2001	Ruf auf eine C4-Professur für Technische Chemie an der RWTH Aachen (Nachfolge Prof. W. Keim)
2005	Ernennung zum geschäftsführenden Direktor des Leibniz-Instituts für Katalyse an der Universität Rostock e.V.
2006	Ruf auf eine W3-Professur für Organische Chemie an der Georg-August-Universität Göttingen (Nachfolge Prof. Dr. A. de Meijere)

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## Auszeichnungen und weitere Tätigkeiten:

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1989	Preis Stipendienfonds des Verbandes der Chemischen Industrie
1990–1991	Liebig-Stipendium des Verbandes der Chemischen Industrie
1997	Otto Roelen-Medaille der DECHEMA
Ab 1999	Vorstandsmitglied der Dechema-Fachsektion Katalyse
1999 und 2001	Mitglied des Organisationskommittees für das „Schwab-Symposium“ (Berlin)
Ab 2001	Mitglied des Advisory Boards von “Advanced Synthesis and Catalysis”
2001-2005	Mitglied des Editorial Boards von “Journal of Molecular Catalysis A: Chemical”
Ab 2002	Mitglied im Konvent für Technikwissenschaften der Union der deutschen Akademien der Wissenschaften
Ab 2002	Mitglied des Advisory Boards von “Journal of Organometallic Chemistry”
Ab 2002	Vorstandsmitglied der deutschen Katalysevereinigung „Connecat“ (seit 2004 Vorstandsvorsitzender)
Ab 2002	Mitglied im Vorstand der Innovationsagentur Mecklenburg-Vorpommern
2002	Merck-Frost-Lectureship an den Universitäten Toronto, Montreal, Kingston (Kanada)
Ab 2003	Mitglied des International Scientific Committee vom “International Symposium on Catalysis Applied to Fine Chemicals”
2003	Novartis Chemistry-Lectureship (Basel, Wien, Horsham)
	Mitglied des Advisory Board der Konferenzserie “International Symposium on Relations between Homogeneous and Heterogeneous Catalysis”
2003	Degussa-Lecturer (University of Durham, UK)
2005	Novo Nordisk-Lecturer (Kopenhagen, Dänemark)
2006	Leibniz-Preis der Deutschen Forschungsgemeinschaft
2006	Verdienstorden am Bande der Bundesrepublik Deutschland
Ab 2006	Vorsitzender der GDCH-Arbeitsgruppe „Nachhaltige Chemie“
Ab 2007	Mitglied des Vorstands des Departments „Science and Technology of Life, Light and Matter“ der Universität Rostock
Ab 2008	Mitglied der Akademie der Wissenschaften in Hamburg
Ab 2008	Chairmen des Editorial Boards von „ChemSusChem“
Ab 2008	International Scientific Council of the TUM Catalysis Research Center
Ab 2008	International Supervisory Board “Fundamental Catalysis Research in the Netherlands”
Ab 2008	Mitglied des Editorial Advisory Boards von “Topics in Organometallic Chemistry”
Ab 2009	Mitglied des Editorial Advisory Boards von “ChemCatChem”

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## Publikationen (2004 - 2009):

1. T. Schareina, R. Jackstell, T. Schulz, A. Zapf, A. Cotté, M. Gotta, M. Beller, *Adv. Synth. Catal.* **2009**; in press; Increasing the Scope of Palladium-catalyzed Cyanations of Aryl Chlorides.
2. T. Schulz, C. Torborg, S. Enthaler, B. Schäffner, A. Spannenberg, H. Neumann, A. Börner, M. Beller, *Chem. Eur. J.* **2009**, in press; Imidazol-based Phosphine Ligands for a General Palladium-catalyzed Amination of Aryl Halides with Ammonia.

3. G. Erre, S. Enthaler, K. Junge, D. Addis, M. Beller, *Adv. Synth. Catal.* **2009**, in press; Iridium-catalyzed Asymmetric Hydrogenation of Enamides in the Presence of 3,3'-substituted H8-Phosphoramidites.
4. K. Schröder, S. Enthaler, B. Bitterlich, T. Schulz, A. Spannenberg, M. K. Tse, K. Junge, M. Beller, *Chem. Eur. J.* **2009**, in press; Design and Mechanistic Studies of a Biomimetic Iron-imidazole Catalyst System for the Epoxidation of Olefins with Hydrogen Peroxide.
5. A. Brennführer, H. Neumann, M. Beller, *Angew. Chem. Int. Ed.* **2009**, *48*, in press; Palladium-catalyzed Carbonylation Reactions of Aryl Halides and Related Compounds.
6. S. Prateeptongkum, I. Jovel, R. Jackstell, N. Vogl, C. Weckbecker, M. Beller, *Chem. Commun.* **2009**, in press; First iron-catalyzed synthesis of oximes from styrenes.
7. F. Shi, M. K. Tse, D. Gördes, D. Michalik, K. Thurow, X. Cui, M. Beller, Y. Deng, *J. Am. Chem. Soc.* **2009**, in press; Copper-catalyzed C-N bond formation from alcohols.
8. D. Addis, S. Enthaler, K. Junge, B. Wendt, M. Beller, *Tetrahedron Lett.* **2009**, in press; Ruthenium *N*-heterocyclic carbene catalysts for selective reduction of nitriles to primary amines.
9. S. Bähn, A. Tillack, S. Imm, K. Mevius, D. Michalik, D. Hollmann, L. Neubert, M. Beller, *ChemSusChem* **2009**, *2*, in press; Ruthenium-catalyzed Selective Monoamination of Vicinal Diols.
10. A. G. Sergeev, T. Schulz, C. Torborg, A. Spannenberg, H. Neumann, M. Beller, *J. Am. Chem. Soc.* **2009**, in press; Palladium-catalyzed Hydroxylation of Aryl Halides at Room Temperature.
11. F. Shi, M. K. Tse, S. Zhou, M.-M. Pohl, J. Radnik, S. Hübner, K. Jähnisch, A. Brückner, M. Beller, *J. Am. Chem. Soc.* **2009**, in press; A Green and Efficient Synthesis of Sulfonamides Catalyzed by Nano-Ru/Fe<sub>3</sub>O<sub>4</sub>.
12. A. Grotevendt, R. Jackstell, M. Gomez, M. Beller, *ChemSusChem* **2009**, in press; Efficient Telomerization of 1,3-butadiene with diols catalyzed by Palladium-carbene catalysts.
13. E. Öchsner, B. Etzold, K. Junge, M. Beller, P. Wasserscheid, *Adv. Synth. Catal.* **2009**, *351*, in press; Kinetic Study of the Asymmetric Hydrogenation of Methyl Acetoacetate in the Presence of a Ruthenium Binaphthophosphine Complex.
14. D. Hollmann, H. Jiao, A. Spannenberg, S. Bähn, A. Tillack, R. Parton, R. Altink, M. Beller, *Organometallics* **2009**, in press; Deactivation of the Shvo Catalyst by Ammonia: Synthesis, Characterization and Modeling.
15. A. Brennführer, H. Neumann, A. Pews-Davtyan, M. Beller, *Eur. J. Org. Chem.* **2009**, 38-42; Catalytic and Stoichiometric Synthesis of Novel 3-Aminocarbonyl-, 3-Alkoxy carbonyl-, and 3-Amino-4-Indolymaleimides.
16. T. Schulz, C. Torborg, A. Zapf, M. Beller, *Angew. Chem. Int. Ed.* **2009**, *48*, 918; Palladium-catalyzed Synthesis of Phenols.
17. E. Öchsner, K. Schneiders, K. Junge, M. Beller, P. Wasserscheid, *Adv. Synth. Catal.* **2009**, eingereicht 04.10.2008; Highly Enantioselective Ru-catalyzed Asymmetric Hydrogenation of Methyl Acetoacetate in Ionic Liquids.
18. J. Deutsch, M. Checinski, A. Köckritz, M. Beller, *Catal. Commun.* **2009**, *10*, 373-377; Convenient homogeneous and heterogeneous acid catalysed electrophilic amidoalkylation of arenes.
19. R. Jackstell, A. Grotevendt, M. Gomez Andreu, M. Beller, *Org. Proc. Res. Dev.* **2009**, in press; A practical palladium-catalyzed telomerization for the synthesis of functionalized alcohols.
20. M. Zhang, H.-F. Jiang, H. Neumann, M. Beller, P. H. Dixneuf, *Angew. Chem. Int. Ed.* **2009**, *48*, in press; Sequential Synthesis of Furans from Alkynes: Successive Ruthenium(II)- and Copper(II)-catalyzed processes.
21. C. Torborg, J. Huang, T. Schulz, B. Schäffner, A. Zapf, A. Börner, M. Beller, *Chem. Eur. J.* **2009**, *15*, 1329-36; A new catalytic system for the Sonogashira coupling of aryl chlorides.

22. H. Junge, A. Boddien, F. Capitta, B. Loges, J. R. Noyes, S. Gladiali, M. Beller, *Tetrahedron Lett.* **2009**, in press; Improved Hydrogen Generation from Formic Acid.
23. I. Iovel, S. Prateptongkum, R. Jackstell, N. Vogl, C. Weckbecker, M. Beller, *Adv. Synth. Catal.* **2008**, *350*, 2493-2497; A Selective and Practical Synthesis of Nitro Olefins.
24. S. Enthaler, K. Junge, D. Addis, G. Erre, M. Beller, *ChemSusChem*, **2008**, *1*, 1006-1010; A practical and benign synthesis of primary amines via ruthenium-catalyzed reduction of nitriles.
25. J. Heinicke, W. Wawrzyniak, N. Peulecke, B. R. Aluri, M. K. Kindermann, P.G. Jones, S. Enthaler, M. Beller, *Phosphorous Sulfur*, **2008**, *183*, 223-231; 2-Hydroxy- and 2-Amino-Functional Arylphosphines – Syntheses, Reactivity and Use in Catalysis.
26. D. Schichl, S. Enthaler, W. Holla, T. Riermeier, U. Kragl, M. Beller, *Eur. J. Org. Chem.* **2008**, 3506-3512; Enantioselective Synthesis of  $\alpha$ -Amino Acids via Dynamic Kinetic Resolution.
27. G. Erre, S. Enthaler, K. Junge, S. Gladiali, M. Beller, *J. Mol. Chem.* **2008**, *280*, 148-155; Active rhodium catalyst for asymmetric hydroformylation of styrene: study of electronic and steric effects of phosphorus seven-membered ring ligands.
28. S. Enthaler, B. Spilker, G. Erre, M. K. Tse, K. Junge, M. Beller, *Tetrahedron* **2008**, *64*, 3867-3876; Biomimetic Transfer Hydrogenation of 2-Alkoxy- and 2-Aryloxyketones with Iron Porphyrin Catalysts.
29. G. Sergeev, A. Zapf, A. Spannenberg, M. Beller, *Organometallics* **2008**, *27*, 297-300; Synthesis and crystal structure of palladium(0) and arylpalladium(II) bromide complexes of cataCXium<sup>®</sup> A.
30. G. Erre, S. Enthaler, K. Junge, S. Gladiali, M. Beller, *Coord. Chem. Rev.* **2008**, *252*, 471-491; Synthesis and application of chiral monodentate phosphines in asymmetric hydrogenations.
31. H. Neumann, A. Brennfürer, M. Beller, *Chem. Eur. J.* **2008**, *14*, 3645-3652; General and Efficient Synthesis of Diarylketones via Three-component Cross-coupling of Aryl and Heteroaryl Bromides, Carbon Monoxide and Boronic acids.
32. Pews-Davtyan, A. Tillack, S. Ortinau, A. Rolfs, M. Beller, *Org. Biomol. Chem.* **2008**, *6*, 992-997; Efficient Palladium-catalyzed Synthesis of 3-Indolyl-4-aryl-maleimides.
33. K. Alex, A. Tillack, N. Schwarz, M. Beller, *Angew. Chem. Int. Ed.* **2008**, *47*, 2314-2317; A General and Convenient Zinc-promoted Hydrohydrazination of Alkynes – An Efficient Domino Synthesis of Indoles.
34. C. Torborg, A. Zapf, M. Beller, *ChemSusChem* **2008**, *1*, 91-96; Novel Palladium Catalysts for highly selective Sonogashira Reactions of Aryl and Heteroaryl Bromides.
35. M. Bartoszek, M. Beller, J. Deutsch, M. Klawonn, A. Köckritz, N. Nemati, A. Pews-Davtyan, *Tetrahedron* **2008**, *64*, 1316-1322.
36. G. Gelalcha, G. Anilkumar, M. K. Tse, M. Beller, *Chem. Eur. J.* **2008**, *14*, 7687-7698; Biomimetic Iron-Catalyzed Asymmetric Epoxidation of Aromatic Alkenes by Using Hydrogen Peroxide.
37. A. Kar, N. Mangu, H. M. Kaiser, M. Beller, M. K. Tse, *Chem. Commun.* **2008**, 386-388; A General Gold-catalyzed Direct Oxidative Coupling of Non-activated Arenes.
38. D. Hollmann, S. Bähn, A. Tillack, M. Beller, *Chem. Commun.* **2008**, 3199-3201; *N*-Dealkylation of Aliphatic Amines and Selective Synthesis of Monoalkylated Aryl Amines.
39. N. Ajellal, E. Guillevic, C. M. Thomas, R. Jackstell, M. Beller, J.-F. Carpentier, *Adv. Synth. Catal.* **2008**, *350*, 431-438; Functional Elastomers via Sequential Selective Diene Copolymerization/Hydro-phosphorylation Catalysis.
40. A. Mikolasch, S. Hessel, M. Gesell Salazar, H. Neumann, K. Manda, D. Gördes, E. Schmidt, K. Thurow, E. Hammer, U. Lindequist, M. Beller, F. Schauer, *Chem. Pharm. Bull.* **2008**, *56*, 781-786; Synthesis of new *N*-analogous corollosporine derivatives with antibacterial activity by laccase-catalyzed amination.

41. N. S. Shaikh, S. Enthaler, K. Junge, M. Beller, *Angew. Chem. Int. Ed.* **2008**, *47*, 2497-2501; Iron-catalyzed Enantioselective Hydrosilylation of Ketones under Mild Conditions.
42. Shi, M. K. Tse, Z. Li, M. Beller, *Chem. Eur. J.* **2008**, *14*, 8793-8797; Controlling Iron-catalyzed Oxidation Reactions: From Non-selective Radical to Selective Non-radical Reactions.
43. K. Alex. A. Tillack, N. Schwarz, *ChemSusChem.* **2008**, *1*, 333-338; A General Intermolecular Zn-catalyzed Hydroamination of Terminal Alkynes.
44. G. Erre, K. Junge, S. Enthaler, D. Addis, D. Michalik, A. Spannenberg, M. Beller, *Chem. Asian J.* **2008**, *3*, 887-894; Synthesis of new monodentate H<sub>8</sub>-binaphthol-based phosphoramidites and their application in iridium-catalyzed asymmetric hydrogenation.
45. T. Schareina, A. Zapf, A. Cotté, N. Müller, M. Beller, *Org. Proc. Res. Dev.* **2008**, *12*, 537-539; Improved copper-catalyzed preparation of diafenthiuron precursors.
46. B. Loges, A. Boddien, H. Junge, M. Beller, *Angew. Chem. Int. Ed.* **2008**, *47*, 3962-3965; Controlled generation of hydrogen from formic acid at room temperature and application in H<sub>2</sub>/O<sub>2</sub> fuel cells.
47. S. Enthaler, K. Junge, M. Beller, *Angew. Chem. Int. Ed.* **2008**, *47*, 3317-3321; Sustainable Metal Catalysis with Iron – From Rust to a Rising Star?
48. K. Alex, N. Schwarz, V. Khedkar, I. A. Sayyed, A. Tillack, D. Michalik, J. Holenz, J. L. Díaz, M. Beller, *Org. Biomol. Chem.* **2008**, *6*, 1802-1807; Synthesis of 3-(*N,N*-Diethylaminoethoxy)indoles as Potential 5-HT<sub>6</sub> Receptor Ligands.
49. A. Sayyed, K. Alex, A. Tillack, N. Schwarz, A. Spannenberg, D. Michalik, M. Beller, *Tetrahedron* **2008**, *64*, 4590-4595; Highly selective reduction and functionalization of diethyl 1-alkyl-1*H*-indole-2,3-dicarboxylates.
50. T. Schareina, A. Zapf, A. Cotté, N. Müller, M. Beller, *Tetrahedron Lett.* **2008**, *49*, 1851-1854; Bio-inspired copper catalysts for the formation of diarylethers.
51. Neumann, A. Sergeev, M. Beller, *Angew. Chem. Int. Ed.* **2008**, *47*, 4887-4891; Novel Palladium Catalysts for the Formylation of Vinyl Triflates to  $\alpha,\beta$ -Unsaturated Aldehydes.
52. S. Enthaler, G. Erre, K. Junge, K. Schröder, D. Addis, D. Michalik, M. Hapke, D. Redkin, M. Beller, *Eur. J. Org. Chem.* **2008**, 3352-3363; Iridium-catalyzed hydrogenation of  $\beta$ -dehydroamino acid derivatives applying monodentate phosphoramidites.
53. F. Shi, M. K. Tse, M.-M. Pohl, A. Brückner, S. Zhang, M. Beller, *J. Mol. Catal.* **2008**, *292*, 28-35; Nano-iron oxide-catalyzed selective oxidations with hydrogen peroxide.
54. K. Alex, A. Tillack, N. Schwarz, M. Beller, *Org. Lett.* **2008**, *10*, 2377-2379; Zinc-catalyzed Synthesis of Pyrazolines and Pyrazoles via Hydrohydrazination.
55. S. Enthaler, G. Erre, K. Junge, D. Addis, R. Kadyrov, M. Beller, *Chem. As. J.* **2008**, *3*, 1104-1110; Enantioselective synthesis of 1,2,3,4-tetrahydro- $\beta$ -carboline and *N*-acyl-1-arylethylamins via rhodium-catalyzed hydrogenation.
56. N. D. Clement, L. Routaboul, A. Grotevendt, R. Jackstell, M. Beller, *Chem. Eur. J.* **2008**, *14*, 7408-7420; Development of Palladium Carbene Catalysts for Telomerization and Dimerization of 1,3-Dienes: From Basic Research to Industrial Applications.
57. B. Loges, A. Boddien, H. Junge, M. Beller, *ChemSusChem.* **2008**, *1*, 751-758; Hydrogen generation from formic acid at room temperature and application in fuel cells.
58. K. Alex, A. Tillack, N. Schwarz, M. Beller, *Tetrahedron Lett.* **2008**, *49*, 4607-4609; First synthesis of 4,5-dihydro-3(2*H*)-pyridazinones via Zn-mediated hydrohydrazination.
59. N. Mangu, H. M. Kaiser, A. Kar, A. Spannenberg, M. Beller, M. K. Tse, *Tetrahedron*, **2008**, *64*, 7171-7177; Synthesis of Novel Hymenialdisine Analogues Using Solvent-free and Silicagel-Promoted Ring Opening of Epoxides.
60. Bitterlich, K. Schröder, M. K. Tse, M. Beller, *Eur. J. Org. Chem.* **2008**, 4867-4870; An improved iron-catalyzed epoxidation of aromatic and aliphatic olefins with hydrogen peroxide as oxidant.

61. S. Enthaler, D. Addis, K. Junge, G. Erre, M. Beller, *Chem. Eur. J.* **2008**, *14*, 9491-9494; A General and Environmentally Benign Catalytic Reduction of Nitriles to Primary Amines.
62. Sergeev, A. Spannenberg, M. Beller, *J. Am. Chem. Soc.* **2008**, *130*, 15549-15563; Palladium-catalyzed Formylation of Aryl Bromides: Elucidation of the Catalytic Cycle of an Industrially Applied Coupling Reaction.
63. S. Bähn, D. Hollmann, A. Tillack, M. Beller, *Adv. Synth. Catal.* **2008**, *350*, 2099-2103; Ruthenium-catalyzed Synthesis of Secondary Alkylamines: Selective Alkylation with aliphatic Amines.
64. M. Beller, *Eur. J. Lipid Sci. Technol.* **2008**, *110*, 789-796; A Personal View on Homogeneous Catalysis and its Perspectives for the Use of Renewables.
65. T. Schareina, A. Zapf, A. Cotté, N. Müller, M. Beller, *Synthesis*, **2008**, 3351-3355; A Convenient and Green Catalytic Cyanation of Aryl Halides.
66. N. Schwarz, A. Pews-Davtyan, D. Michalik, K. Alex, A. Tillack, J. L. Diaz, M. Beller, *Eur. J. Org. Chem.* **2008**, 5425-5435; Palladium-catalyzed Amination and Sulfonylation of 5-Bromo-3-(*N,N*-diethylamino-ethoxy)-indoles to Potential 5-HT<sub>6</sub> Receptor Ligands.
67. K. Krüger (nee Alex), A. Tillack, M. Beller, *Adv. Synth. Catal.* **2008**, *350*, 2153-2167; Synthesis of Indoles from Alkynes.
68. D. Hollmann, S. Bähn, A. Tillack, R. Parton, R. Altink, M. Beller, *Tetrahedron Lett.* **2008**, *49*, 5742-5745; A Novel Salt-free Ruthenium-catalyzed Alkylation of Aryl Amines.
69. H. Neumann, A. Brennfürer, M. Beller, *Adv. Synth. Catal.* **2008**, *350*, 2437-2442; An Efficient and Practical One-pot-two-step Synthesis of Suprofen and Ketoprofen.
70. A. Tillack, D. Hollmann, K. Mevius, D. Michalik, S. Bähn, M. Beller, *Eur. J. Org. Chem.* **2008**, 4745-4750; Salt-free Synthesis of Tertiary Amines via Ruthenium-catalyzed Amination of Alcohols.
71. D. Li, K. Schröder, B. Bitterlich, M. K. Tse, F. Shi, M. Beller, *Tetrahedron Lett.* **2008**, *49*, 5976-5979; Iron-catalyzed hydroxylation of  $\beta$ -ketoesters with hydrogen peroxide.
72. S. Enthaler, B. Hagemann, G. Erre, K. Junge, M. Beller, *Adv. Synth. Catal.* **2007**, *349*, 853-860; New Ruthenium Catalysts for Asymmetric Transfer Hydrogenation of Prochiral Ketones.
73. A. Pews-Davtyan, A. Tillack, M. Beller, *CHEManager*, **2008**, *17*, 11.-24. September 2008, 29; Wirkungsvolle Katalyse: Katalyse als eine Technologie für die Wirkstoffsynthese.
74. M. Ahmed, C. Buch, L. Routaboul, R. Jackstell, H. Klein, A. Spannenberg, M. Beller, *Chem. Eur. J.* **2007**, *13*, 1594-1601; Hydroaminomethylation with novel rhodium-carbene-complexes: An efficient catalytic approach to pharmaceuticals.
75. M. Beller, *Leibniz Perspectives - Research for a Sustainable Europe Vol.2*, **2007**, 33-37; Catalysis – a Key to Sustainability.
76. K. Junge, B. Hagemann, S. Enthaler, M. Beller, *Arcivoc* **2007**, 50-66; Synthesis and catalytic application of novel binaphthyl-derived phosphorous ligands.
77. G. Anilkumar, B. Bitterlich, F. Gadissa Gelalcha, M. K. Tse, M. Beller, *Chem. Commun.* **2007**, 289-291; An efficient biomimetic Fe-catalyzed epoxidation of olefins using hydrogen peroxide.
78. S. Enthaler, G. Erre, K. Junge, J. Holz, E. Alberico, I. Nieddu, A. Börner, S. Gladiali, M. Beller, *Org. Proc. Res. Dev.* **2007**, *11*, 568-577; Development of Practical Rhodium Phosphine Catalysts for the Hydrogenation of  $\beta$ -Dehydroamino Acid Derivates.
79. W. Mägerlein, C. Dreisbach, H. Hugl, M. K. Tse, M. Klawonn, S. Bhor, M. Beller, *Catal. Today* **2007**, *121*, 140-150; Homogeneous and heterogeneous ruthenium catalysts in the synthesis of fine chemicals.
80. H. Junge, B. Loges, M. Beller, *Chem. Commun.* **2007**, 522-524; Ruthenium-catalyzed Generation of Hydrogen from *iso*-Propanol.
81. F. Shi, M. K. Tse, M. Beller, *Adv. Synth. Catal.* **2007**, *349*, 303-308; A Novel and Convenient Process for the Selective Oxidation of Naphthalenes with H<sub>2</sub>O<sub>2</sub>.

82. T. Schareina, A. Zapf, M. Beller, W. Mägerlein, N. Müller, *Synlett* **2007**, 555-558; Copper-catalyzed cyanation of heteroaryl halides: A new, simple and versatile biomimetic catalyst system.
83. J. Kischel, K. Mertins, D. Michalik, A. Zapf, M. Beller, *Adv. Synth. Catal.* **2007**, 349, 871-875; A general and efficient FeCl<sub>3</sub>-catalyzed Benzoylation of 1,3-Dicarbonyles.
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- **Driller, Katrin Marie:** Eisen-katalysierte C-C- und C-N-Verknüpfungen
- **Boddien, Albert:** Neue Katalysatoren zur Herstellung von Wasserstoff
- **Loges, Björn:** Wasserstoffgewinnung aus erneuerbaren Rohstoffen
- **Piras, Irene:** Development of new Carbonylation Catalysts
- **Addis, Daniele:** Iron in reduction chemistry
- **Dr. Erre, Giulia:** Neue axial-chirale einzählige P-Donor-Liganden für die asymmetrische Katalyse Novel axially-chiral monodentate P-donor ligands for asymmetric catalysis (2008)
- **Dr. Alex, Karolin:** Synthese von Alkaloiden mittels Katalyse (2008)
- **Dr. Schwarz, Nicole:** Synthese von Tryptamin- und Tryptopholderivaten über Ti-katalysierte Reaktionen - Hydroaminierung von Silylprogarylether (2008)
- **Dr. Hagemann, Bernhard:** Synthese und Reaktionen monodentater Binaphthosphosphine (2006)
- **Dr. Khedkar, Vivek:** Catalytic Regioselective Hydroamination of Alkenes and Alkynes (2006)

**Drittmittelprojekte (2004 – 2009):**

- Degussa AG; Industrieprojekt „*Neue Palladium-Katalysatoren*“; 01/2000 – 12/20087.
- Oxeno Olefinchemie GmbH; Industrieprojekt „*Carben-Katalysatoren für Telomerisationsreaktionen*“; 10/2001 - 09/2009.
- BMBF-Leuchtturm-Projekt „*Nachaltige Aromatenchemie*“, (12 Hochschulgruppen und drei Industriepartner); (Koordinator des Projektes); 04/2002 - 03/2005.
- Landesforschungsprojekt "*Katalytische Funktionalisierung von marinen Wirkstoffen und Multikomponentenreaktionen*"; Landesforschungsschwerpunkt Mecklenburg-Vorpommern; 01/02 – 12/05.
- DFG-Projekt "*Neue stereoselektive Aminierungen von Olefinen*"; Be 1931/5-1 und 5-2; 06/2001 - 05/2004.
- DFG-Projekt "*Neue Ruthenium-katalysierte asymmetrische Epoxidationen von Olefinen mit Luftsauerstoff als Oxidationsmittel*"; Be 1931/11-1; 08/2003 - 07/2005.
- Industrieprojekt „*Katalytische Synthese von Tryptaminen und Tryptopholen*“, Grüenthal; 07/2004-12/2004.
- DFG-Projekt "*Entwicklung von Katalysatoren für hochselektive Synthesen von Aminen durch Hydroaminomethylierungen*"; Be 1931/12-1 und 12-2; 12/2003 - 11/2006.
- DFG-Projekt "*Entwicklung von Eisen- und Ruthenium-Katalysatoren mit neuen Stickstoffliganden für stereoselektive Oxidationsreaktionen mit Luftsauerstoff*"; Be 1931/14-1; 08/2005 - 07/2007.
- AIF-Projekt „*Neue Katalysatoren für Brennstoffzellen*“, (2 Hochschulgruppen: Prof. Beller, Prof. Jeroschewski und 2 KMU's); 08/2004 - 07/2006.
- Industrieprojekt „*Synthese neuer Indolderivate*“, Esteve; 10/2004 - 09/2006.
- AIF-Projekt „*Synthese von primären Amininen in überkritischem Ammoniak*“, (2 Hochschulgruppen: Prof. Beller, Dr. A. Martin und 3 KMU's); 11/2004 - 10/2006.
- Industrieprojekt „*Organokatalysatoren für Umpolungsreaktionen*“, Degussa AG, Feed Additives; 01/2005 - 12/2009.
- Industrieprojekt „*Benzonitrilsynthesen*“, Lanxess AG; Zeitraum: 07/2005 - 06/2009.
- EU-Projekt „*Katalyseexzellenznetzwerk der EU*“, NoE „Idekate“ der EU; 07/2005 -06/2009.
- DFG-Projekt "*Multikomponentenreaktionen*"; Be 1931/15-1 und 15-2; 09/2005 - 08/2008.

- Landesforschungsprojekt "*Entwicklung von praktikablen heterogenen Katalysatoren für stereoselektive Reaktionen*", Wirtschaftsministerium Mecklenburg-Vorpommern; 07/2005 – 12/2006.
- Leibniz-Gemeinschaft, Pakt für Forschung I, 2008-2010.
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1968–1972	Chemiestudium an der Universität Rostock; Diplom bei Helmut Zinner an der Universität Rostock ( <i>Darstellung und Reaktionen des 1.2.2.2-Tetrachlorethylisocyanats, „sehr gut“</i> )
1973–1976	Befristeter wissenschaftlicher Mitarbeiter am Zentralinstitut für Organische Chemie, Akademie der Wissenschaften, Bereich Komplexkatalyse, in Rostock
1976	Promotion zum Dr. rer. nat. bei Erhard Kurras an der Universität Rostock ( <i>Untersuchungen zu Darstellung und Eigenschaften von <math>\sigma</math>-Organoübergangsmetal-Phosphorylid-Verbindungen, „summa cum laude“</i> )
1977	Unbefristeter wissenschaftlicher Mitarbeiter am o.g. Institut
1988	Gastwissenschaftler bei Mark E. Vol'pin und Vladimir B. Shur am Nesmeyanov-Institut für Elementorganische Verbindungen der Akademie der Wissenschaften der UdSSR in Moskau
1989	Dr. sc. nat. an der Universität Rostock ( <i>Untersuchungen zu Darstellung und Eigenschaften neuer Alkin-Komplexe des Ni(0) - als Beitrag zu Struktur-Reaktivitäts-Beziehungen unter besonderer Berücksichtigung von Alkincyclo-trimerisierungen</i> )
1990–1991	Gastwissenschaftler bei Günther Wilke am Max-Planck-Institut für Kohlenforschung in Mülheim/Ruhr in der Gruppe von Klaus Pörschke
1991	Erteilung der „ <i>facultas docendi</i> “ und Habilitation für das Fach Anorganische Chemie an der Universität Rostock
1992–1996	Leiter der Arbeitsgruppe „Komplexkatalyse“ der Max-Planck-Gesellschaft an der Universität Rostock
1994	Universitätsprofessor für Anorganische Chemie an der Universität Rostock
1997	Leiter der Abteilung „Komplexkatalyse“ am Institut für Organische Katalysenforschung an der Universität Rostock e.V., ab 2003 „Leibniz-Institut für Organische Katalyse an der Universität Rostock e.V.“
2003	Stellv. Direktor des Leibniz-Instituts für Organische Katalyse
Wissenschaftliche Interessen	Koordinations- und Organoelementchemie (Cr, Ni, Ti, Zr, Si, B, Al), Komplexkatalyse, Aktivierung kleiner Moleküle (Alkine, Butadiene, Silane), Knüpfung und Spaltung von C-C-Einfachbindungen

## Auszeichnungen und weitere Tätigkeiten:

1982	Institutspreis des Zentralinstituts für Organische Chemie der Akademie der Wissenschaften (mit W. Schulz)
1997	Institutspreis für Organometallchemie des Nesmeyanov-Instituts für Organoelementverbindungen der Akademie der Wissenschaften Rußlands (mit V. V. Burlakov, V. B. Shur und A. Ohff)
2003	Mitglied im Advisory Board der ACS-Zeitschrift <i>Organometallics</i>
2003	DFG-Fachkollegiat für "Anorganische Molekülchemie"

## Publikationen (2004 - 2009):

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- **Fischer, Christian:** Komplexchemische Untersuchungen an Rhodiumkatalysatoren (Doppelbetreuung mit PD. Dr. D. Heller)
- **Klahn, Marcus:** Chirale und nichtchirale Titanocen- und Zirconocenverbindungen in Katalysen (vorauss. 2009)
- **Dr. Beweries, Torsten:** Ungewöhnliche Metallacyclen von Titan, Zirconium und Hafnium (2008) (Doppelbetreuung mit PD Dr. D. Heller)
- **Dr. Bach, Marc:** Praktische und theoretische Studien zur Chemie von ungewöhnlichen Metallacyclen des Titans und Zirconiums (2007)
- **Dr. Jäger-Fiedler, Ulrike:** Ungewöhnliche stöchiometrische und katalytische Bindungsaktivierungen (2006)

**Drittmittelprojekte (2004 - 2009)**

- Industrie-Projekt, BASF, „Acetylenchemie“, 01/2004 - 03/2004.
- Industrie-Projekt, DSM, „Oligomerisierungen“, 10/2004 - 12/2004.
- DFG-Projekt; SPP 1118 "C-F-Aktivierung"; 07/2003 - 06/2005.
- DFG-Projekt, SPP 1166, "Lanthanoide-Ylide" 04/2004 - 03/2008.
- Industrie-Projekt, DSM, „Acetylenchemie“, 01/2005 - 12/2005.
- DFG-Projekt "Reaktionen ungewöhnlicher Metallacyclen"; 07/2006 - 06/2009.
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- DAAD; Personenaustausch Indien; 06/2005 - 05/2007.
- DFG; Graduiertenkolleg 1213 „Neue Methoden Für Nachhaltigkeit in Katalyse und Technik“; 07/2005 - 12/2009.
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1999	Habilitation (Physikalische Chemie)
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Wissenschaftliche Interessen	Reaktionskinetik und Untersuchungen zum Ursprung von Selektivität, Modelle und Modellerweiterungen zur Optimierung katalytischer Systeme, Entwicklung von Untersuchungsmethoden und Messtechniken für homogen katalysierte Reaktionen unter anaeroben Bedingungen

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#### Betreute Dissertationsthemen (2004 - 2009):

- **Fischer, Christian:** Komplexchemische Untersuchungen an Rhodiumkatalysatoren (Doppelbetreuung mit Prof. Dr. U. Rosenthal)
- **Dr. Preetz, Angelika:** Katalysatorvorstufen für enantioselektive Katalysen (**2009**)
- **Dr. Schmidt, Thomas:** Mechanistische Untersuchungen zur homogenen Rhodiumkomplex-katalysierten enantioselektiven Hydrierung prochiraler Olefine (**2008**)
- **Dr. Beweries, Torsten:** Ungewöhnliche Metallacyclen von Titan, Zirconium und Hafnium (**2008**) (Doppelbetreuung mit Prof. Dr. U. Rosenthal)

#### Drittmittelprojekte(2004 - 2009):

- Industrieprojekt; Grünenthal; 2004/2007.
- Industrieprojekt; Esteve; 2004/2008.
- Industrieprojekt; DSM; 2004.

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1989	Institutspreis des Zentralinstituts für Organische Chemie der AdW der DDR
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### Betreute Dissertationsthemen (2004 - 2009):

- **Schäffner, Benjamin:** Asymmetric Catalysis in Organic Carbonates
- **Bilenko, Vitaly:** Neue Phosphorliganden für die asymmetrische Katalyse
- **Rahn, Thomas:** Synthese und Reaktionen funktionalisierter Oligo( $\beta$ -oxo)ester (Doppelbetreuung mit Prof. P. Langer)

### Drittmittelprojekte (2004 - 2009):

- Chirale Liganden (BASF AG)
- Hydroformylierung (Degussa-Evonik GmbH)
- Asymmetrische Katalyse (Boehringer Ingelheim AG)
- Alternative Totalsynthesen (Ratiopharm GmbH)
- Asymmetrische C-C-Kupplungen (Uhde GmbH)
- Asymmetrische Synthesen (Bayer-Schering AG)
- Neue Amine (TAMINCO)
- Chirale Duftstoffe (AiF-Projekt mit Aromachemicals Miltitz)
- Chirale Selektoren (INTAS-Copernicus-Projekt der EU zusammen mit 6 anderen Partnern aus Rußland, Moldavien und Schweiz)

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1956	Geboren in Kaunas (UdSSR)
1963–1973	Schulausbildung Ulan-Bator, Mongolei
1973	Schulabschluss (Abitur) in Ulan-Bator, Mongolei
1973–1978	Hochschulausbildung (Chemiestudium) am <i>Polytechnischen Institut</i> , Fachrichtung Technische Chemie und Petrochemie in <i>Kuibyshev, UdSSR</i> , Abschluss: Diplom in Chemie und Verfahrenstechnik („Mit Auszeichnung“)
1975–1978	Studium am <i>Patent Institut, Kuibyshev, UdSSR</i> , Abschluss: Diplom in Patentrecht
1980–1984	Doktorarbeit unter der Leitung von Prof. Dr. A. M. Rozhnov: <i>Study of the relationships between the thermodynamic properties of tert-alkylphenols and their structure</i>
1996–2001	Habilitation im Fach Physikalische Chemie am Institut für Physikalische Chemie, Universität Rostock. Habilitationsarbeit <i>Thermochemistry of Associated Reacting Mixtures. Strain of a Molecule as Quantitative Manifestation of Its Structure-Energy Relationships</i>
2002	"Venia legendi" in Physikalischer Chemie

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Wissenschaftliche Interessen	Chemische Thermodynamik und Thermochemie (Gleichgewichtsuntersuchungen in reaktiven Mischungen, Verbrennungskalorimetrie, Verdampfungs- und Sublimationsenthalpien, Exzessgrößen fluider Mischungen); moderne Anwendungen der Gaschromatographie; chemische Kinetik; Radikalchemie
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1988	Preisträger der <i>Mendeleev Chemische Gesellschaft</i> (UdSSR)
1988–1989	Stipendiat des <i>Deutschen Akademischen Austauschdiensts (DAAD)</i>
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**Publikationen (2004 - 2009):****Begutachtete Publikationen**

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**Betreute Dissertationsthemen (2004 - 2009):**

- **Dr. Kozlova, Swetlana:** Experimentelle Bestimmung der physikalisch-chemischen Eigenschaften von "Green Solvents"-Alkylcarbonaten und Ionischen Flüssigkeiten.
- **Dr. Shavyalyova, Marina:** Experimentelle Bestimmung der physiko-chemischen Eigenschaften von "Green Solvents"-Alkylcarbonaten und Ionischen Flüssigkeiten.
- **Toktonov, Alexey:** Chemische Reaktionen von "Green Solvents"-Alkylcarbonaten und Ionische Flüssigkeiten. (**2009**)
- **Stepurko, Elena:** Thermochemische Eigenschaften von Phenyl- und Vinyl-Carbonaten. Dampfdruckmessungen und kalorimetrische Untersuchungen.
- **Vishnevskaya, Elena:** Neue Methoden für die Bestimmung der Polymerisationsenthalpien.
- **Ralys, Richardas:** Entwicklung der neuen Methoden für Dampfdruckmessungen und kalorimetrische Untersuchungen von Green Solvents.

**Drittmittelprojekte (2004 - 2009):**

- EU - INTAS Projekt Ref. Nr. 03-50-5526; "*Investigation of dependence between structure and physicochemical properties of green neoteric solvents - ionic liquids*"; 2005/2007
- DFG; SPP 1191; "*Study of the vapor pressure and the heat of vaporization of ionic liquids*"; 2006/2010
- DFG Graduiertenkolleg; „*Neue Methoden für Nachhaltigkeit in Katalyse und Technik*“; 2005/2008

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1987-1988	Diplomarbeit am Lehrstuhl für Biotechnologie der Universität Bonn und im Institut für Biotechnologie der Forschungszentrum Jülich GmbH (Prof. Dr. Wandrey); Thema: „Reaktionstechnische Untersuchungen zur enzymkatalysierten Cyanhydrinsynthese“
1988–1992	Doktorarbeit am Lehrstuhl für Biotechnologie der Universität Bonn und im Institut für Biotechnologie der Forschungszentrum Jülich GmbH (Prof. Dr. Wandrey); Gesamtnote: „Mit Auszeichnung“ Thema: „Reaktionstechnik biokatalytischer Prozesse am Beispiel der kontinuierlichen enzymatischen Synthese von <i>N</i> -Acetylneuraminsäure“
1992	Post-Doc Aufenthalt bei Ciba Geigy Limited, International Research Laboratories, Takarazuka, Japan
1998	Habilitation für das Fach „Technische Chemie“ an der Rheinischen Friedrich-Wilhelms-Universität Bonn. Die praktischen Arbeiten erfolgten im Institut für Biotechnologie der Forschungszentrum Jülich GmbH; Thema: „Reaktionstechnik der asymmetrischen Synthese mit Homogen- und Biokatalysatoren“
1998	Berufung zum Professor für Technische Chemie an der Universität Rostock
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## Auszeichnungen und weitere Tätigkeiten:

1997	Auszeichnung mit einem Stipendium der Karl-Winnacker-Stiftung
2000-2003	Berufung in den Unterrichtsausschuss der Bunsen-Gesellschaft für Physikalische Chemie
2001-2004	Vorsitzender der Prüfungskommission und stellvertretender Sprecher des Fachbereichs Chemie der Universität Rostock
Ab 2003	Mitglied im Beirat der Konferenz der Fachbereiche Chemie (KFC)
2004-2006	Dekan der Mathematisch-Naturwissenschaftlichen Fakultät der Universität Rostock
2004-2008	Mitglied im Vorstand des Kompetenznetzwerkes Katalyse (ConNeCat)
2002-2008	Mitglied im Vorstand der DECHEMA-Fachsektion Katalyse
Ab 2007	Gründungsdekan der Interdisziplinären Fakultät der Universität Rostock
Ab 2009	Mitglied in der Kommission der Deutschen Gesellschaft für Katalyse

## Publikationen (2004–2009):

1. S. Kumar, M. Kumar, K. Thurow, R. Stoll, U. Kragl, *Environmental Modelling and Software* **2009**, 24, 44-53; Fuzzy Filtering for Robust Bioconcentration Factor Modelling.
2. P. Izak, W. Ruth, Z. Fei, P. J. Dyson, U. Kragl, *Chemical Engineering Journal* **2008**, 139, 318–321; Selective removal of acetone and butan-1-ol from water with supported ionic liquid-polydimethylsiloxane membrane by pervaporation.
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32. M. Eckstein, M. Villela Filho, A. Liese, U. Kragl, *Chem. Comm.* **2004**, 1084-1085; Use of an ionic liquid in a two-phase system to improve an alcohol dehydrogenase catalyzed reduction.
33. M. Eckstein, T. Daußmann, U. Kragl, *Biocatalysis & Biotransformation* **2004**, *22*, 89-96; Recent developments in NAD(P)H regeneration for enzymatic reduction in one- and two-phase systems.
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35. S. P.Verevkin; V. N. Emel'yanenko, A. V. Toktonov, J. Duwensee, U. Kragl, C. Schick *Industrial & Chemical Research* **2009**, submitted; Thermodynamics of Sebacic Acid and 1,4-Butanediol and their Biocatalytic Polymerisation.
36. J. Duwensee, S. Wenda, W. Ruth, U. Kragl *Organic Process Research & Development* **2009**, submitted; Polycondensation in water – a new approach for polyester synthesis.

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#### Betreute Dissertationsthemen (2004 - 2008):

- **Masuck, Ines:** Aufreinigung von Wertsustanzen durch Reaktivadsorption
- **Fritz, Ria:** Charakterisierung von Enzymen und Proteinen unter Prozessbedingungen
- **Dr. Duwensee geb. Lembrecht, Julia:** Enzymatische Polymersynthese in Carbonaten und anderen Lösungsmitteln (2009)
- **Dr. Otero Martinez geb. Wächtler, Heike:** Ribosederivate durch Kombination von Synthese und Biokatalyse (2008)

**Drittmittelprojekte (2004 - 2009):**

- BMBF (01R/05112), „*Organophile Nanofiltration für die nachhaltige Produktion in der Industrie*“ – Teilvorhaben 3; Verlängerung vom 09/2008–08/2009; 05/2008 – 08/2008.
- BML/FNR, „*Cyanophycin-Kartoffel*“; 01/2005–09/2006.
- BMBF (03WKS03A), FZ Jülich, BioOK, „*Analytischer Nachweis von Summenparametern und Einzelkomponenten*“ (Projekt 6), 04/2005–03/2008.
- BMBF (0313402E), FZ Jülich, „*Biokatalytische Hydrocyanierung & Hydroformylierung(Biohydroform)*“; 04/2005–03/2008.
- BMBF (0313433F), FZ Jülich, „*Neuartige Haloperoxidasen*“; 07/2005–06/2008.
- BMBF FZ Jülich, „*BioOK*“ (Projekt 3), 04/2005–03/2008.
- DFG, Graduiertenkolleg 1213, „*Neue Methoden für Nachhaltigkeit in Katalyse und Technik*“, 07/2005–12/2009.
- Yara AG, DLH (Double Layered Hydroxides); 06/2005–09/2008.
- BMELV/FNR, Lignocellulose-Bioraffinerie, Teilvorhaben 2, „*Holzaufschluss und Komponenten-Trennung mit ionischen Flüssigkeiten*“; 01/2007–12/2008.
- BMBF, Projektträger VDI Berlin; Mikropraktikum, Mikro-Extraktion; 05/2007–12/2008.
- Fachagentur f.Nachwachsende Rohst, Kartoffelknollen, Teilvorhaben 1: „*Expression der Cyanophycin-Synthesen in transgenen Kartoffelknollen*“; 03/2007–10/2008.
- DBU Fa. BRAIN, Förderschwerpunkt Biotechnologie: ChemieBioTec, „*Rekombinate Laccasen für die Feinchemie*“; 03/2007–02/2009.
- FNR/BMEL, „*Bio- und chemokatalytische Wege zu funktionalisierten Glycerinderivaten (MetaGlyc)*“: Teilprojekt 2:Oligomerisation und Oxidation von Glycerin; 12/2006–11/2009.
- DFG SPP 1191, „*Ionische Flüssigkeiten*“, 1. Förderphase; 01/2007–12/2008.
- DFG, „*Keramische Monolithe*“, 11/2008–10/2011.
- Evonik, „*Katalysatordeaktivierung*“, 02/2008–07/2010.
- DFG, SPP 1191, „*Ionische Flüssigkeiten*“, 2. Förderphase; 01/2009–12/2010.



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20.02.1969	geboren (in Hannover)
05/1988	Abitur
1989/90	Wehrdienst (Heeresflugabwehrtruppe)
10/1989	Chemiestudium an der Universität Hannover
07/1992 - 04/1994	Stipendiat der Studienstiftung des deutschen Volkes
02/1993	Diplom-Prüfung: Note „sehr gut“
07/1993 - 06/1994	Diplomarbeit bei Prof. Dr. Dr. h. c. mult. Dietmar Seyferth am Massachusetts Institute of Technology (MIT), USA, Organosiliciumchemie
07/1994 - 02/1997	Promotion bei Prof. H. M. R. Hoffmann, Ph.D, DSc. (Universität Hannover) mit einer Arbeit über Cinchona-Alkaloide Note: „summa cum laude“ Doktorandenstipendium des Fonds der Chemischen Industrie
05/1997 - 05/1998	Postdoktorand bei Prof. Dr. S. V. Ley, FRS, In Cambridge, England. „Ein-Topf-Synthese von Oligosacchariden“ Feodor-Lynen-Stipendium der Alexander-von-Humboldt-Stiftung
06/1998 - 07/2001	Habilitand am Institut für Organische Chemie der Universität Göttingen (Mentor: Prof. Dr. A. de Meijere) Liebig-Stipendium des Fonds der Chemischen Industrie
07/2001	Venia Legendi für Organische Chemie (Habilitation) Thema: „Effiziente Synthese biologisch relevanter Ringsysteme durch Cyclisierung von Dianionen und Dianion-Äquivalenten mit 1,2-Dielektrophilen“
09/2001	Heisenberg-Stipendium
12/2001	Lehrstuhl-Vertretung an der Universität Greifswald
04/2002	Univ.-Professor (C4) für Bioorganische Chemie Institut für Chemie und Biochemie, Universität Greifswald
12/2004 - heute	Univ.-Professor (C4) für Präparative Organische Chemie Institut für Chemie, Universität Rostock
07/2005 - heute	Assoziierter Bereichsleiter ‚Organische Synthese‘ am

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Wissenschaftliche Interessen	Ein-Topf-Cyclisierungen, Dominoreaktionen, Homogene Katalyse in der Organischen Synthese, Organosiliciumchemie, Heterocyclen, Medizinische Chemie (neue Antibiotika und Cytostatika), Naturstoffe, Kohlenhydrate, Neue Materialien
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### Auszeichnungen und weitere Tätigkeiten:

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1992-1994	Stipendium der Studienstiftung des deutschen Volkes
1995-1996	Promotionsstipendium des Fonds der Chemischen Industrie
1997	Preis der Fakultät für Chemie der Universität Hannover zur Promotion
1997	Studienabschluß-Stipendium des Fonds der Chemischen Industrie
1997/98	Feodor-Lynen-Stipendium der Alexander-von-Humboldt Stiftung)
2001	Heisenberg-Stipendium
2000	SYNTHESIS-SYNLETT Journals Award"
2008 – heute	Mitglied des Editorial Board: <i>International Journal of Carbohydrate Chemistry</i>
2008 – heute	Associate Editor of <i>Current Bioactive Compounds</i> "
2009	Guest Editor <i>Tetrahedron Symposium-in-Print</i> (to be published in 2009) "Recent Advances in Organosilicon Chemistry directed towards Organic Synthesis"
10/2002 – 09/2004	Gewähltes Mitglied im Fakultätsrat und Stellv. Direktor des Instituts für Biochemie
10/2006 – 09/2008	Vorsitzender des Prüfungsausschusses und Stellv. Direktor des Instituts für Chemie
10/2008 – 09/2010	Mitglied des Akad. Konzils
2008 – heute	Mitglied im DAAD Auswahlausschuß Ref. 442 (Irak, Iran, Afghanistan, Pakistan)
2008 – heute	Mitglied im DAAD Auswahlausschuß Ref. 326 (Kaukasus und Zentralasien)

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### Publikationen (2004–2009):

1. A. Riahi, O. Fatunsin, M. Shkoor, R. Dede, H. Reinke, C. Fischer, P. Langer, *Synthesis* **2009**, accepted; First Synthesis of 5-Cyanosalicylates by Formal [3+3] Cyclocondensations of 1,3-Bis(silyloxy)-1,3-butadienes.
2. S. Büttner, A. Riahi, I. Hussain, M. A. Yawer, M. Lubbe, P. Langer, *Tetrahedron* **2009**, in print; First Synthesis of Functionalized 5-Aryl-3-(trifluoromethyl)phenols by Regioselective [3+3] Cyclocondensations of 1,3-Bis(silyloxy)-1,3-butadienes with 3-Aryl-3-silyloxy-1-trifluoromethyl-2-en-1-ones.
3. R. Ahmad, A. Riahi, P. Langer, *Tetrahedron Lett.* **2009**, in print; Synthesis of Functionalized Triarylmethanes based on a 'FeCl<sub>3</sub>-Catalyzed Benzylolation / [3+3] Cyclocondensation' Strategy.
4. B. Juma, M. Adeel, A. Villinger, H. Reinke, A. Spannenberg, C. Fischer, P. Langer, *Adv. Synth. Catal.* **2009**, in print; Synthesis of 2,6-Dioxo-1,2,3,4,5,6-hexahydroindoles by Acid-Catalyzed Cyclization of Acetal-Protected (2,4-Dioxocyclohex-1-yl)acetamides and their Transformation into 5,8,9,10-Tetrahydro-6*H*-indolo[2,1-*a*]isoquinolin-9-ones.

5. F. Ullah, T. T. Dang, J. Heinicke, A. Villinger, P. Langer, *Synlett* **2009**, accepted; Regioselective Sonogashira Reactions of *N*-Methyltetrabromo-pyrrole. First Synthesis of Tri- and Tetra(1-alkynyl)pyrroles.
6. G. Mroß, P. Langer, *Lett. Org. Chem.* **2009**, accepted; Synthesis of 4,5-Dimethoxy-*o*-quinone by Formal [4+2] Cyclization of 2,3-Dimethoxy-1,3-butadiene with Oxalyl Chloride.
7. S. Libnow, M. Hein, P. Langer, *Synlett* **2009**, 221-224; The First *N*-Glycosylated Indoxyls and their Application to the Synthesis of Indirubin-*N*-glycosides (Purple Sugars).
8. O. Fatunsin, A. Riahi, M. Shkooor, R. Dede, H. Reinke, P. Langer, *Synlett* **2009**, 201-204; First Synthesis of Functionalized Benzonitriles by Formal [3+3] Cyclocondensations of 1,3-Bis(silyloxy)-1,3-butadienes.
9. G. Mroß, S. Ladzik, H. Reinke, A. Villinger, C. Fischer, P. Langer, *Synthesis* **2009**, in print; Synthesis of Functionalized Salicylates by Formal [3+3] Cyclocondensation of 1,3-Bis(silyloxy)-1,3-butadienes with 3-Alkoxy-2-en-1-ones.
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14. S. Reim, M. Lau, M. Adeel, I. Hussain, M. A. Yawer, A. Riahi, Z. Ahmed, C. Fischer, H. Reinke, P. Langer, *Synthesis* **2009**, 445-463; Synthesis of Biaryls, Fluorenones, Cyclopenta[*def*]phenanthren-4-ones and Benzophenones based on Formal [3+3] Cyclocondensations of 1,3-Bis(silyloxy)-1,3-butadienes.
15. M. Adeel, M. A. Rashid, N. Rasool, R. Ahmad, A. Villinger, H. Reinke, C. Fischer, P. Langer, *Synthesis* **2009**, 243-250; Regioselective Synthesis of Functionalized Biaryls based on the First [3+3] Cyclocondensations of 4-Aryl-1,3-bis(trimethylsilyloxy)-1,3-butadienes.
16. W.-D. Pfeiffer, H. Dollinger, P. Langer, *Phosphorus, Sulfur, Silicon & Related Elem.* **2009**, in print; Synthesis of 5-Thioxo-hexahydrobenzo[*b*]thiopheno-[2,3-*d*]-1,2,4-triazolo[1,5-*c*]pyrimidines and Related Compounds based on Cyclizations of 2-Isothiocyanato-3-cyano-4,5,6,7-tetrahydrobenzo[*b*]thiophene.
17. I. Iqbal, M. Imran, A. Villinger, P. Langer, *Synthesis* **2009**, 297-305; Regioselective Synthesis of Functionalized 2-(Aryloxythio)-benzoates by the First [3+3] Cyclizations of 3-Aryloxythio-1-silyloxy-1,3-butadienes with 3-Alkoxy-2-en-1-ones.
18. H. Feist, P. Langer, *Synthesis* **2008**, 3877-3902 (review); One-Pot Cyclizations of (2,4-Dioxobutylidene)phosphoranes and (2-Alkoxy-4-oxo-but-2-enylidene)phosphoranes.
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23. K. M. Driller, S. Libnow, M. Hein, M. Harms, K. Wende, M. Lalk, D. Michalik, H. Reinke, P. Langer, *Org. Biomol. Chem.* **2008**, *6*, 4218-4223; Synthesis of 6*H*-Indolo-[2,3-*b*]quinoxaline-*N*-glycosides and their Cytotoxic Activity against Human Ceratinocytes (HaCaT).
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25. M. Imran, I. Iqbal, N. Rasool, M. A. Rashid, P. Langer, *Synlett* **2008**, 2708-2710; Regioselective Synthesis of 2-Thiophenoxybenzoates by the First Catalytic [3+3] Cyclocondensations of 1-Trimethylsilyloxy-3-thiophenoxy-1,3-butadienes with 1,1,3,3-Tetramethoxypropane.
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30. T. T. Dang, A. Villinger, P. Langer, *Adv. Synth. Catal.* **2008**, *350*, 2109-2117; Efficient Synthesis of Substituted Selenophenes based on the First Palladium(0)-Catalyzed Cross-Coupling Reactions of Tetrabromoselenophene.
31. S. Büttner, M. Lubbe, H. Reinke, C. Fischer, P. Langer, *Tetrahedron* **2008**, *64*, 7968-7976; First Synthesis of 5-Alkyl- and 5-Aryl-3-(perfluoroalkyl)phenols by [3+3] Cyclocondensation of 1,3-Bis(silyloxy)-1,3-butadienes with 3-Silyloxy-1-(perfluoroalkyl)prop-2-en-1-ones.
32. S. Reim, D. Michalik, K. Weisz, Z. Xiao, P. Langer, *Org. Biomol. Chem.* **2008**, *6*, 3079-3084; Synthesis and Solution Structure of 3,5-Dioxopimelic Acid Diesters – Stable 1,3,5,7-Tetracarbonyl Derivatives.
33. M. Lubbe, R. Klassen, T. Trabhardt, A. Villinger, P. Langer, *Synlett* **2008**, 2331-2333; Regioselective Synthesis of Functionalized 3-(Methylthio)phenols by Formal [3+3] Cyclizations of 1,3-Bis(trimethylsilyloxy)-1,3-butadienes with 1,1-Bis(methylthio)-1-en-3-ones.
34. I. Hussain, M. A. Yawer, B. Appel, M. Sher, A. Mahal, A. Villinger, P. Langer, *Tetrahedron* **2008**, *64*, 8003-8009; Synthesis of 4-Hydroxy- and 2,4-Dihydroxy-homophthalates by [4+2] Cycloaddition of 1,3-Bis(trimethylsilyloxy)-1,3-butadienes with Dimethyl Allene-1,3-dicarboxylate.
35. S. Reim, I. Hussain, M. Adeel, M. A. Yawer, A. Villinger, P. Langer, *Tetrahedron Lett.* **2008**, *49*, 4901-4904; Synthesis and Reactions of the First 2-Chloro-1,3-bis(trimethylsilyloxy)-1,3-butadienes.
36. I. Hussain, A. Riahi, M. A. Yawer, H. Görls, P. Langer, *Org. Biomol. Chem.* **2008**, *6*, 3542-3551; One-Pot Synthesis of 6-(Thien-2-yl)- and 6-(Fur-2-yl)salicylates based on Regioselective [3+3] Cyclizations of 1,3-Bis(trimethylsilyloxy)-1,3-butadienes.
37. M. A. Yawer, I. Hussain, A. Schmidt, J.-P. Gütlein, H. Jiao, H. Reinke, A. Spannenberg, P. Langer *Eur. J. Org. Chem.* **2008**, 4193-4199; Synthesis of Functionalized Isobenzomorphans by Two-Step Cyclocondensation of 1,3-Bis(trimethylsilyloxy)-1,3-butadienes with Isoquinolines.

38. M. Lubbe, C. Mamat, P. Langer, *Synlett* **2008**, 1684-1686; Regioselective Synthesis of Rare 3-(Halomethyl)phenols based on Formal [3+3] Cyclizations of 1,3-Bis(trimethylsilyloxy)-1,3-butadienes.
39. A. Schmidt, D. Michalik, E. Ullah, S. Rotzoll, C. Fischer, H. Reinke, P. Langer, *Org. Biomol. Chem.* **2008**, *6*, 2804-2814; Synthesis of Azoxabicyclo[3.3.1]nonanones based on Reactions of 1,1-Bis(trimethylsilyloxy)ketene Acetals with Isoquinolines and Quinolines.
40. M. Lubbe, A. Bunescu, A. Villinger, P. Langer, *Synlett* **2008**, 1862-1864; Synthesis of 4-Methoxy-6-(trifluoromethyl)salicylates by [3+3] Cyclocondensations of 1,3-Bis(trimethylsilyloxy)-1,3-butadienes with 1,1-Dimethoxy-4,4,4-trifluorobut-1-en-3-one.
41. M. A. Yawer, I. Hussain, I. Iqbal, A. Spannenberg, P. Langer, *Tetrahedron Lett.* **2008**, *49*, 4467-4469; Synthesis of Functionalized Dibenzo[*b,d*]pyrid-6-ones based on a [3+3]-Cyclocondensation / Lactamization Strategy.
42. J. Hefner, P. Langer, *Tetrahedron Lett.* **2008**, *49*, 4470-4472; Chelation Control in the [3+3] Annulation Reactions of Alkoxy-Substituted 1,1-Diacylcyclopropanes with 1,3-Bis(trimethylsilyloxy)-1,3-butadienes.
43. V. Karapetyan, S. Mkrtchyan, T. T. Dang, H. Reinke, P. Langer, *Tetrahedron* **2008**, *64*, 8010-8015; Regioselective Synthesis of 6-Halomethyl-5,6-dihydro-4*H*-1,2-oxazines based on Iodine-mediated Cyclizations of Arylalkenyl-oximes.
44. V. Karapetyan, S. Mkrtchyan, A. Schmidt, J.-P. Gütlein, A. Villinger, H. Reinke, H. Jiao, C. Fischer, P. Langer, *Org. Biomol. Chem.* **2008**, 2961-2968; Synthesis of 7,8-Benzo-4-hydroxy-1,9-diazabicyclo[3.3.1]non-3-enes by Cyclization of 1,3-Bis(Silyl Enol Ethers) with Quinazolines.
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- **Dr. Rotzoll, Sven:** Synthese pharmakologisch relevanter Ringsysteme durch neuartige Cyclisierungsreaktionen von Dinucleophilen mit Dielektrophilen (**2008**)
- **Dr. Sher, Muhammad:** Synthesis of Functionalized Homophthalates, Salicylates, Diaryl Ethers and Dihydroisocoumarins based on Cyclocondensations of 1,3-Dicarbonyl Compounds and of 1,3-Bis(silyloxy)-1,3-butadienes (**2008**)
- **Dr. Mroß, Gerson:** Synthese funktionalisierter Biaryle, Diarylether und Xanthone durch formale [3+3] Cyclocondensationen von 1,3-Bis(silyloxy)-1,3-butadienen (**2008**)
- **Dr. Reim, Stefanie:** Synthese von Fluorenonen, Phthalaten, 3,5-Dioxopimelaten, halogensubstituierten Phenolen und Butenoliden durch Lewis-Säure-vermittelte Reaktionen von 1,3-Bis(silyloxy)-1,3-butadienen (**2008**)
- **Dr. Libnow, Stefanie:** Darstellung pharmakologisch relevanter Indirubin-*N*-glykoside und deren Analoga (**2008**)
- **Dr. Rashid, Muhammad A.:** Synthesis of Functionalized Arenes based on [3+3] Cyclizations of 1,3-Bis(silyloxy)-1,3-butadienes and related Transformations and Isolation of New Chemical Constituents of *Symplocos racemosa* (**2008**)

- **Dr. Schmidt, Andreas:** Synthesen verbrückter und nicht verbrückter Ringsysteme durch Reaktionen von 1,3-Bis(silylenolethern) mit stickstoffhaltigen Elektrophilen (**2008**)
- **Dr. Mamat, Constantin:** Darstellung fluorierter Naturstoffanaloga (**2007**)
- **Dr. Phuong, Nguyen Thi Bich:** Synthesis of Indigo-Glycosides (Blue Sugars) and DNA-Intercalating  $\delta$ -Carbolines (**2007**)
- **Dr. Dang, Tuan Thanh:** Synthesis of Pharmacologically Relevant Heterocycles by Cyclization of Oxime and Hydrazone Dianions and by Regioselective Palladium(0)-Catalyzed Cross-Coupling Reactions (**2007**)
- **Dr. Esen Bellur:** Synthesis and Reactions of 2-Alkylidenetetrahydrofurans and 2-Alkylidenepyrrolidines Based on One-Pot Cyclizations of Free and Masked Dianions (**2006**)
- **Dr. Zafar Ahmed:** Synthesis of Natural  $\gamma$ -Alkylidenebutenolides and Analogues based on a 'Cyclization / Cross-Coupling' Strategy (**2006**)
- **Dr. Ehsan Ullah:** Synthesis of Carba- and Heterocycles based on Novel One-Pot cyclizations of 1,1-Bis(trimethylsilyloxy)ketene Acetals and 1,3-Bis(Silyl Enol Ethers) (**2006**)
- **Dr. Uwe Jens Albrecht:** Entwicklung neuer Methoden zur Synthese biologisch aktiver Ringsysteme und deren Anwendung in der Synthese von Naturstoffen (**2005**)
- **Dr. Bettina Appel:** Entwicklung neuartiger Dominoreaktionen von Benzopyryliumtriflaten mit 1,3-Bis-Silylenolethern und deren Anwendung (**2005**)
- **Dr. Nguyen Thi Hong Van:** Diversity-Oriented Synthesis of Pharmacologically Relevant O-Heterocycles and Carbacycles by Cyclization Reactions of 1,3-Bis-Silyl Enol Ethers, (**2005**)
- **Dr. Joachim-Thierry Anders:** Effiziente Synthese von N-Heterocyclen durch Cyclisierungsreaktionen von Dianionen mit Bis-Imidoylchloriden(**2004**)
- **Dr. Ilia Freifeld :** Entwicklung neuer Methoden zur Synthese von N- und O-Heterocyclen durch Cyclisierungsreaktionen von freien und maskierten Dianionen (**2004**)

### Drittmittelprojekte (2004 - 2009):

- DFG; La 1301 / 1-2; „*Stereoselektive Synthese von  $\gamma$ -Alkylidenbutenoliden und verwandten Ringsystemen durch Cyclisierung von Dianion-Äquivalenten mit Dielektrophilen*“; 01/2003-12/2004.
- DFG; La 1301 / 5-1, „*Dominoreaktionen funktionalisierter 2,3-Dihydrobenzopyrane und verwandter Ringsysteme*“; ; 01/2003-12/2004.
- Revotar AG; Auftragsforschung ; Projekt 5370 3095, „*Synthese von neuartigen, hochsubstituierten Stickstoff- und Sauerstoffheterocyclen*“; 04/2003-03/2004.
- Degussa AG; Az 1.3-7780-6139006; „*Synthese und Folgechemie ‚Forschungsarbeiten‘ NCN-Chemie*“; 11/2005-10/2006.
- DFG; Normalverfahren; La 1301 / 1-3; „*Stereoselektive Synthese von  $\gamma$ -Alkylidenbutenoliden und verwandten Ringsystemen durch Cyclisierung von Dianion-Äquivalenten mit Dielektrophilen*“; 01/2006-12/2006.
- DFG; Normalverfahren; La 1301 / 7-1; „*Rationale Synthese und theoretisches Verständnis von zwitterionischen Oligoazaacenen – Organische Materialien mit geringer Singulett-Triplett-Energieaufspaltung*“; 10/2006-09/2008.
- FCI; Forschungsförderung; FCI Kto.-Nr. 166636; „*Förderung chemierelevanter Grundlagenforschung*“; 02/2007-12/07.
- DFG; La 1301 / 9-1; „*Synthese und Struktur-Wirkungs-Beziehungen von cancerostatischen Indigoglycosiden, Akashinen und deren Analoga*“; 04/2007-03/2010.



- Esteve S.A.; Auftragsforschung Auftragsforschung; Projekt 109, „*Chemical reactions of isoquinolines, benzopyrans, benzoxepins, benzoxacins and carboline analogues*“; LIKAT; 04/2007-03/2008.
- Land MV; Exzellenz-Programm; UR 07 068; „*Synthese und biologisches Screening von natürlichen  $\gamma$ -Alkylidenbutenoliden und deren Analoga als potentielle Cytostatika*“; 07/2007-06/2009.
- Deutsche Krebshilfe; Verbundprojekt; Verbund: Nr. 108008, Teilprojekt: Nr. 108545; Verbundprojekt „*Molecular mechanisms of development and progression of malignant melanoma*. Teilprojekt 5: *Identification and molecular targeting of signalling pathways in malignant melanoma*“; 07/2008-06/2011.
- Riemser Arzneimittel; Auftragsforschung; Projekt LIKAT; „*Neue Synthesemethoden zur Herstellung von Thiotepa*“; 09/2008-02/2010.
- BMBF Wachstums-kern II, BioOK ; Verbundprojekt, BMBF-Förderprogramm „Innovative Regionale Wachstumskerne“: „*BioOK - Entwicklung von Zulassungs- und Überwachungsverfahren für gentechnisch veränderte Nutzpflanzen*“, Verbundprojekt Nr. 3: „*Inhaltsstoffanalyse zur Identifizierung von Zeigersubstanzen 2*“.

**Prof. Dr.-Ing. habil. Kerstin THUROW (C1)**

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**Wissenschaftlicher Werdegang:**


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1969	Geboren in Rostock
1976–1979	Allgemeinbildende Polytechnische Oberschule Rostock
1979–1982	Schule bei der Botschaft der DDR in der UdSSR, Moskau
1982–1988	3. EOS „J.-G. Herder“ Rostock
1988	Schulabschluss (Abitur) an der 3. EOS „J.-G. Herder“ in Rostock
1988–1992	Hochschulausbildung (Chemiestudium) an der Universität Rostock, Abschluss: Diplom
1992–1994	Promotionsstudium am Fachbereich Chemie und Pharmazie der Ludwig-Maximilians-Universität München
1995	Promotion in der Fachrichtung Metallorganische Chemie <i>Übergangsmetall-substituierte Schwefel-Verbindungen: Metallosulfane, -sulfoxide, -sulfone, -sulf(ox)onium-Salze und -sulfurane</i>
1995–1997	Wissenschaftlicher Mitarbeiter am Institut für Automatisierungstechnik der Universität Rostock
1997–1998	Stellv. Direktor des Institutes für Mess- und Sensorsysteme e.V.
1998–1999	Geschäftsführer des Institutes für Mess- und Sensorsysteme e.V.
1999	Habilitation <i>Ein Methodenspektrum zur selektiven messtechnischen Bestimmung stofflicher Spezies durch spektroskopische Messsysteme am Beispiel ausgewählter Arsenverbindungen</i>  venia legendi im Fach Mess- und Regelungstechnik an der Ingenieurwissenschaftlichen Fakultät der Universität Rostock
1999	Berufung zum Professor für Laborautomation an der Universität Rostock
seit 2000	Direktor des Institutes für Automatisierungstechnik an der Universität Rostock
2004	Berufung zum Professor für Automatisierungstechnik / Life Science Automation
seit 2004	Sprecher Center for Life Science Automation

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**Auszeichnungen und weitere Tätigkeiten:**


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2008	Vorstandsmitglied der Akademie der Wissenschaften Hamburg
2008	Board of Director Association Laboratory Automation
2005	Gründungsmitglied der Akademie der Wissenschaften Hamburg

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2005	Mitglied acatech – Akademie der Technikwissenschaften Deutschland
2004	Joachim-Jungius-Preis der Joachim Jungius-Gesellschaft der Wissenschaften Hamburg
2003-2007	Vorstandsvorsitzender des Institutes für Mess- und Sensorsysteme e.V.
seit 2008	Vorstandsmitglied und Geschäftsführer Hanseatic Institute of Technology e.V.
seit 2005	Vorstandsvorsitzender des städtepartnerschaftlichen Vereins Rostock-Raleigh e.V. Mitglied des Editorial Board Journal Association Laboratory Automation Guest Lecturer North Carolina State University, Science University Tokyo, University Hanoi, CIDESI Queretaro

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### Publikationen (2004–2009):

1. S. Kumar, M. Kumar, K. Thurow, R. Stoll, U. Kragl, *Environmental & Software* **2009**, 24 (1), 44-53; Fuzzy Filtering for Robust Bioconcentration Factor Modelling.
2. V. Hahn, A. Mikolasch, K. Manda, D. Gördes, K. Thurow, F. Schauer, *Amino Acids* **2008**, 1-7; Laccase-catalyzed carbon-nitrogen bond formation: coupling and derivatization of unprotected L-Phenylalanine with different para-hydrochinones.
3. T. Krüger, K. Thurow, *GIT* **2008**, 964-966; Volumenbestimmung kleiner Tropfen in der Nanodosierung.
4. M. Kumar, D. Arndt, S. Kreuzfeld, K. Thurow, N. Stoll, R. Stoll, *IEEE Transactions on Systems, Man, And Cybernetics: Part B Cybernetics* **2008**, 38 (6), 1449-1464; Fuzzy Techniques for Subjective Workload-Score Modeling Under Uncertainties.
5. M. Mikolasch, S. Hessel, M. Gesell-Salazar, H. Neumann, M. Manda, D. Gördes, E. Schmidt, K. Thurow, E. Hammer, U. Lindeqist, M. Beller, F. Schauer, *Chem.Pharm.Bull* **2008**, 56 (6),781-786; Synthesis of New N-Analogous Corollosporine Derivates with Antibacterial Activity by Laccase-Catalyzed Animation.
6. S. Müller, J. Majcher-Peszynska, R. G. Mundkowski, B. Uehleke, S. Klammt, H. Sievers, R. Lehnfeld, B. Frank, K. Thurow, G. Kundt, B. Drewelow, *European Journal of Pharmacology*, **2008**, 1-7; No clinically relevant CYP3A induction after St. John's wort with low hyperforin content in healthy volunteers.
7. R. Stoll, D. Arndt, S. Kreuzfeld, M. Weippert, K. Thurow, *BioSpektrum* **2008**, 14(3), 258-261; High Throughput Screening: Stress Monitoring in hoch automatisierten Umgebungen der Life Sciences.
8. K. Thurow, H. Weinmann, *Journal Association Laboratory Automation (JALA)* **2008**, 13 (1),1-5; Review: Automation Highlights from Literature (I).
9. K. Thurow, H. Weinmann, *Journal Association Laboratory Automation (JALA)* **2008**, 13 (2), 61-64; Review: Automation Highlights from Literature (II).
10. K. Thurow, H. Weinmann, *Journal Association Laboratory Automation (JALA)* **2008**, 13 (3), 125-130; Review: Automation Highlights from Literature (III).
11. K. Thurow, H. Weinmann, *Journal Association Laboratory Automation (JALA)* **2008**, 13 (4),181-186; Review: Automation Highlights from Literature (IV).
12. K. Thurow, H. Weinmann, *Journal Association Laboratory Automation (JALA)* **2008**, 13 (5), 255-258; Review: Automation Highlights from Literature (V).
13. K. Thurow, H. Weinmann, *Journal Association Laboratory Automation (JALA)* **2008**, 13 (1), 309-313; Review: Automation Highlights from Literature (VI).
14. B. Göde, S. Holzmüller-Laue, D. Haller, I. Schneider, K. Thurow, *Bioforum* **2007**, 30 (5), 42-44; Flexible IT-Plattform zur automatisierten HTS-Wirkstoffanalyse.

15. B. Göde, S. Holzmüller-Laue, K. Rimane, K. Thurow, *Laborpraxis* **2007**, 31 (7-8), 32-38; Integrierte flexible Datenverarbeitung in einem webbasierten LIMS: Idee und Praxis eines Excel-Prozessors in Serverapplikationen.
16. B. Göde, S. Holzmüller-Laue, K. Rimane, K. Thurow, *VDI Berichte*, **2007**, 1980, 969-978; Migrationspotenzial eines Laborinformationsmanagementsystems in der Life Science Automation.
17. M. Kumar, K. Thurow, N. Stoll, R. Stoll, *European Journal of Medicinal Chemistry* **2007**, 42 (5), 675-685; Robust Fuzzy Mappings for QSAR studies.
18. K. Manda, D. Gördes, A. Mikolasch, E. Hammer, E. Schmidt, K. Thurow, F. Schauer; *Applied microbiology and biotechnology* **2007**, 76 (2), 407-416; Carbon-oxygen bond formation by fungal laccases: cross-coupling of 2,5-dihydroxy-N-(2-hydroxyethyl)-benzamide with the solvents water, methanol, and other alcohols.
19. P. Schneider, N. Stoll, D. Haller, K. Thurow *Journal Association Laboratory Automation* **2007**, 12 (4), 219-229; Establishment of a flexible platform for an automated Brain-Derived Neurotropic factor-ELISA.
20. K. Thurow, S. Junginger, Ü. Kolukisaoglu, N. Stoll *Bioforum*, **2007**, 30(5), 23-25; Automatisierte Zellkultivierung - Der nächste Schritt auf dem Weg zum vollautomatisierten Labor.
21. K. Thurow, H. Weinmann, *Journ. Ass. Lab. Aut. JALA* **2007**, 12 (1), 1-5; Review: Automation Highlights from Literature (I).
22. K. Thurow, H. Weinmann, *Journ. Ass. Lab. Aut. JALA* **2007**, 12 (2), 67-72; Review: Automation Highlights from Literature (II).
23. K. Thurow, H. Weinmann, *Journ. Ass. Lab. Aut. JALA* **2007**, 12 (3), 131-134; Review: Automation Highlights from Literature (III).
24. K. Thurow, H. Weinmann, *Journ. Ass. Lab. Aut. JALA* **2007**, 12 (3) 189-194; Review: Automation Highlights from Literature (IV).
25. K. Thurow, H. Weinmann, *Journ. Ass. Lab. Aut. JALA*, 12 (5) **2007**, 12 (4), 255-259; Review: Automation Highlights from Literature (V).
26. K. Thurow, H. Weinmann, *Journ. Ass. Lab. Aut. JALA* **2007**, 12 (6), 335-338; Review: Automation Highlights from Literature (VI).
27. C. Wendler, D. Gördes, K. Thurow, *GIT Europe* **2007**, 9-10, 36-38; Automated Synthesis of Compound Libraries.
28. D. Gördes, K. Thurow, *Journ. Ass. Lab. Aut. JALA* **2006**, 11 (2), 128-133; High Throughput Screening Application for the Determination of Enantiomeric Excess using Mass Spectrometry.
29. F. Grassert, D. Timmermann, K. Thurow, *GIT Laborfachzeitschrift*, **2006**, 50 (8), 676-680; Drahtlose Überwachung von Laboren der Life Sciences.
30. K. Manda, E. Hammer, A. Mikolasch, D. Gördes, K. Thurow, F. Schauer, *Amino Acid*, **2006**, 31 (2), 409-419; Laccase-induced derivatisation of pure amino acid L-tryptophan with the *p*-hydroquinone 2,5-dihydroxy-N-(2-hydroxyethyl)-benzamide.
31. N. Stoll, A. Allwardt, U. Dingerdissen, K. Thurow, *Chem. Ing. Tech.* **2006**, 78 (7), 937-947; Ein 8-fach Parallel-Reaktionssystem für die kombinatorische Katalyseforschung.
32. N. Stoll, A. Allwardt, U. Dingerdissen, K. Thurow, *Journal of Automated Methods and Management in Chemistry* **2006**, 1-9; An 8fold Parallel Reactor System for Combinatorial Catalysis Research.
33. N. Stoll, T. Krüger, S. Hagemann, K. Thurow, *GIT Laborfachzeitschrift*, **2006**, 50, 29-32; Von der Mikro- zur Nanodosierung - Trends und Entwicklungen in der Liquid-Dosiertchnik.
34. N. Stoll, E. Schmidt, K. Thurow, *Journal of the American Society for Mass Spectrometry*, **2006**, 17, 1692-1699; Isotopic Pattern Evaluation for the Reduction of Elemental Compositions assigned to High Resolved Mass Spectral Data from Electrospray Ionization Fourier Transform Ion Cyclotron Resonance Mass Spectrometry.

35. K. Thurow *Laborwelt*, **2006**, 7 (1), 22; Nanoliter-Dispensing im Focus der LabAutomation Conference.
36. K. Thurow, N. Stoll, *BioForum Europe* **2006**, 3, 33-35; Automating Analytical Processes.
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39. K. Thurow, H. Weinmann; *Journ. Ass. Lab. Aut. JALA*, **2006**, 11, 55-59; Review: Automation Highlights from Literature (I).
40. K. Thurow, H. Weinmann, *Journ. Ass. Lab. Aut. JALA*, **2006**, 11, 113-117; Review: Automation Highlights from Literature (III).
41. K. Thurow, H. Weinmann, *Journ. Ass. Lab. Aut. JALA*, **2006**, 11, 167-171; Review: Automation Highlights from Literature (IV).
42. K. Thurow, H. Weinmann, *Journ. Ass. Lab. Aut. JALA*, **2006**, 11, 285-290; Review: Automation Highlights from Literature (V).
43. K. Thurow, H. Weinmann; *Journ. Ass. Lab. Aut. JALA*, **2006**, 11, 335-340; Review: Automation Highlights from Literature (VI).
44. U. Albrecht, D. Gördes, E. Schmidt, K. Thurow, M., Lalk, P. Langer, *Bioorganic & Medicinal Chemistry* **2005**, 13, 4402-4407; Synthesis and structure-activity relationships of 2-alkylidenethiazolidine-4,5-diones as antibiotic agents.
45. A. Allwardt, N. Stoll, C. Wendler, K. Thurow, *Journal of Automated Methods & Management in Chemistry*, **2005**, 26, 26-30; New Developments in the Field of Reaction Technology: The Multi Parallel Reactor HPMR 50-96.
46. K. Entzian, A. Allwardt, S. Holzmüller-Laue, S. Junginger, T. Roddelkopf, N. Stoll, K. Thurow; *VDI Berichte* **2005**, 1883, , 235-242; Automationslösungen für biologische und chemische Screeningverfahren.
47. B. Jürgen, S. Tobisch, M. Wümpelmann, D. Gördes, A. Koch, K. Thurow, D. Albrecht, M. Hecker, T. Schweder, *Biotechnology and Bioengineering* **2005**, 92 (3), 277-298; Global expression profiling of *Bacillus subtilis* cells during industrial-close fed-batch fermentations with different nitrogen sources.
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49. N. Stoll, I. Hawali, K. Thurow, *Journal of Automated Methods & Management in Chemistry*, **2005**, 26, 230-234; Automated Micro Dosing System for Integration with a Miniaturized High-Pressure Reactor System.
50. K. Rimane, B. Göde, K. Thurow, *VDI Berichte*, **2005**, 1883, 175-182; Moderne XML- und Datenbankkopplung von Prozessdaten an LIM-Systeme.
51. N. Stoll, S. Junginger, T. Roddelkopf, K. Thurow, *LITUS*, **2005**, 27Error Broadcasting – Automatisierte Überwachung komplexer Laboranlagen.
52. K. Thurow, S. Decker, *transkript* **2005**, 11, 45-46, 49; High Content Screening - der nächste Schritt in der Arzneimittelentwicklung.
53. K. Thurow, S. Decker, A. Allwardt,; *Nachrichten aus der Chemie* **2005**, 53 (10) 1046-1050; Automatisierte Reaktionssysteme oder Syntheseautomaten - neue Entwicklungen in der Reaktionstechnik,
54. K. Thurow, B. Göde, K. Rimane, N. Stoll, *GIT Laborfachzeitschrift* **2005**, 49, 124-125; Remote Control für Life-Science-Labore.
55. K. Thurow, S. Hagemann, *GIT-Laborfachzeitschrift* **2005**, 49 (12), 1040-1042; High Throughput Analytik - schnelle Analysenmesstechniken für HTS-Systeme.

56. K. Thurow, S. Junginger, N. Stoll, *BioSpektrum* **2005**, 11 (5), 666-670; Systemintegration für die Vollautomation – Von Einzelkomponenten zum Gesamtsystem.
57. K. Thurow, H. Weinmann, *Journ. Ass. Lab. Aut. JALA* **2005**, 10 (1), 1-5; Review: Automation Highlights from Literature (I).
58. K. Thurow, H. Weinmann, *Journ. Ass. Lab. Aut. JALA* **2005**, 10 (2), 77-81; Review: Automation Highlights from Literature (II).
59. K. Thurow, H. Weinmann, *Journ. Ass. Lab. Aut. JALA* **2005**, 10 (3), 135-139; Review: Automation Highlights from Literature (III).
60. K. Thurow, H. Weinmann, *Journ. Ass. Lab. Aut. JALA* **2005**, 10 (4), 197-202; Review: Automation Highlights from Literature (IV).
61. K. Thurow, H. Weinmann, *Journ. Ass. Lab. Aut. JALA* **2005**, 10 (5), 281-286; Review: Automation Highlights from Literature (V). *Journ. Ass. Lab. Aut. JALA* **2005**, 10 (5), 281-286
62. K. Thurow, H. Weinmann, *Journ. Ass. Lab. Aut. JALA* **2005**, 10 (6), 359-363; Review: Automation Highlights from Literature (VI).
63. J. Wangelin, H. Neumann, D. Gördes, S. Hübner, C. Wendler, S. Klaus, D. Strübing, A. Spannenberg, H. Jiao, L. E. Firdoussi, K. Thurow, N. Stoll, M. Beller, *Synthesis* **2005**, 12, (2005), 2029-2038; Sequential Three-Component and Heck Reactions for the Synthesis of Phenanthridones.
64. Wendler, T. Krüger-Sundhaus, M. Beller, D. Gördes, K. Thurow, *Journ. Ass. Lab. Aut. JALA* **2005**, 10 (4), 237-241; Single-Pot Solution Phase Synthesis Optimization Using Fully Automated Systems for Combinatorial Screening.
65. K. Thurow, *Nachrichten aus der Chemie* **2004**, 52, 618-620; Roboter in der Analytik.
66. K. Thurow, S. Decker, *Biospektrum*, **2004**, 682-684; High Throughput-Screening heute und morgen - Entwicklungstendenzen für die Zukunft.
67. K. Thurow, K. Entzian, G. Eberlein, *Journ. Ass. Lab. Aut. JALA* **2004** 3, 159-162; Toxicological and Pharmacological Evaluation of New Drug Candidates by In Vitro Robotic High Throughput Cell Assays.
68. K. Thurow, B. Göde, U. Dingerdissen, N. Stoll, *Organic Process Research & Development* **2004**, 12.8 A-M; Laboratory Information Management Systems for Life Science Applications.
69. K. Thurow, B. Göde, K. Rimane, N. Stoll, *LITUS* **2004**, 28-29; Globaler Netzwerkzugriff auf Laboranlagen - Remote Control-Lösungen in der Laborautomation.
70. K. Thurow, N. Stoll, C. Wendler, *Laborpraxis*, **2004**, 26-28; Automatisierte Probenvorbereitung - Vision und Realität.
71. K. Thurow, H. Weinmann, Review: *Journ. Ass. Lab. Aut. JALA* **2004**, 9, 1-4; Automation Highlights from Literature (I).
72. K. Thurow, H. Weinmann, *Journ. Ass. Lab. Aut. JALA* **2004**, 2, 45-49; Review: Automation Highlights from Literature (II)
73. K. Thurow, H. Weinmann, *Journ. Ass. Lab. Aut. JALA*, **2004** 3, 95-98; Review: Automation Highlights from Literature (III).

#### **Buchbeiträge**

74. N. Stoll, K. Thurow, In: Medical Automation, Chapter 12, **2008**, 197-209. Process Management Using Information Systems - Principles and Systems.
75. N. Stoll, K. Thurow, In: Medical Automation, Chapter 12, **2008**, 197-209; Process Management Using Information Systems - Principles and Systems.
76. K. Thurow, S. Hagemann, N. Stoll; Chapter 2: In: B. Nelson, M. Zhang, R. Felder: Life Science Engineering. **2007**, 23-66. Basic Analytical Chemistry for Engineers.
77. N. Stoll, S. Hagemann, K. Thurow, In: B. Nelson, M. Zhang, R. Felder (Eds.): Life Science Automation – Fundamentals and Applications. **2007**, Artech House Inc. (USA), 319-348; Chapter 12: Bio-Instrumentation Automation.

78. N. Stoll, K. Thurow, S. Hagemann, In: IMS-Press, Neue Wirkstoffe und Biomaterialien - Screeningverfahren und Produktentwicklung.
79. N. Stoll, S. Hagemann, K. Thurow, In: B. Nelson, M, Zhang, R. Felder (Eds.): Life Science Automation – Fundamentals and Applications. **2007**, Artech House Inc. (USA), 319-348; Chapter 12: Bio-Instrumentation Automation.
80. K. Thurow, S. Hagemann, N. Stoll; Chapter 2: In: B. Nelson, M, Zhang, R. Felder: Life Science Engineering. **2007**, 23-66; Basic Analytical Chemistry for Engineers.
81. N. Stoll, K. Thurow, S. Hagemann; IMS-Press, ISBN 9-938042-02-8 **2005**), 100 Seiten; Neue Wirkstoffe und Biomaterialien- Screeningverfahren und Produktentwicklung.

### **Betreute Dissertationsthemen (2004 - 2009):**

(Doppelbetreuung mit Prof. N. Stoll)

- **Fröhlich, Anne:** Kopplung eines Mikroreaktorsystems an ein HRMS.
- **Kleinwächter, Andre:** Entwicklung einer flexiblen Roboterplattform für die Laborautomatisierung im Single Vessel Handling.
- **Dr. Krüger, Thomas:** Beiträge zur Optimierung von automatischen Flüssigkeitsdosiersystemen auf Basis der Piezotechnologie (**2008**).
- **Dr. Schmidt, Enrico:** Algorithmierung und automatisierte Datenauswertung für die hochauflösende und ultrahochauflösende Massenspektrometrie (**2007**).

### **Drittmittelprojekte (2004 - 2009):**

- BMBF; Campus PlasmaMed. Teilvorhaben: "*Campus PlasmaMed III*"; 07/2008-12/2010.
- BMBF / Industrie; „*celisca - Center for Life Science Automation*“; 05/2005-04/2010.
- BMBF, FIT 50+; 08/2007-07/2010.
- DFG; Graduiertenkolleg 1213 – „*Neue Methoden für Nachhaltigkeit in Katalyse und Technik*“; 07/2005- 12/2009.

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Prozessmesstechnik

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**Wissenschaftlicher Werdegang:**


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1955	Geboren in Rostock
1961–1971	Allgemeinbildende Polytechnische Oberschule Rostock
1971–1973	1. EOS Rostock
1973	Schulabschluss (Abitur) an der 1. EOS in Rostock
1974–1979	Studium der Technischen Kybernetik und Automatisierungstechnik an der Sektion Technische Elektronik der Universität Rostock
1979	Diplom in der Fachrichtung Schaltungstechnik und Mikrorechentechnik
1979–1991	Wiss. Mitarbeiter am Zentralinstitut für Organische Chemie der Akademie der Wissenschaften, Bereich Komplexkatalyse
1985	Promotion in der Fachrichtung Messtechnik <i>Datenerfassung und rechnergestütztes "peak matching" am Massenspektrometer LKB 9000 A</i>
1992–1994	Arbeitsgruppenleiter und Stellv. Direktor des Institutes für Organische Katalyseforschung an der Universität Rostock
1994	Berufung zum Professor für Prozessmesstechnik an der Universität Rostock

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**Auszeichnungen und weitere Tätigkeiten:**


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1994–2000	Direktor des Institutes für Automatisierungstechnik der Universität Rostock
1996–1999	Vorstandsvorsitzender Institut für Mess- und Sensorsysteme e.V.
2000–2002	Dekan der Fakultät für Ingenieurwissenschaften der Universität Rostock
seit 2006	Scientific Advisory Board Medical Automation

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**Publikationen (2004 - 2009):**

1. S. Allwardt, S. Holzmüller-Laue, C. Wendler, N. Stoll, *Catalysis Today*, **2008**, 137 (1), 11-16; A High Parallel Reaction System for Efficient Catalyst Research.
2. M. Kumar, D. Arndt, S. Kreuzfeld, K. Thurow, K., N. Stoll, R. Stoll, *IEEE Transactions on Systems, Man, And Cybernetics: Part BCybernetics*, **2009**, 38 (6), 1449-1464; Fuzzy Techniques for Subjective Workload-Score Modeling Under Uncertainties.
3. Allwardt, S. Holzmüller-Laue, C. Wendler, N. Stoll, *Chemie- Ingenieur-Technik* **2007**, 79 (9), 1491; Einsatzmöglichkeiten von miniaturisierten Reaktoren am Beispiel des HPMR 100-384.
4. S. Allwardt, S. Holzmüller-Laue, C. Wendler, N. Stoll, *Journal of the Association for Laboratory Automation*, **2007**, 12 (6), 368-373; Multiparallel High Pressure Reactions in a 384 Microplate.
5. T. Krüger, N. Stoll, *BIOForum*, **2007**, 30 (1), 42-43; Volumenerkennung für die Dosierung kleinster Volumina.
6. M. Kumar, K. Thurow, N. Stoll, R. Stoll, *European Journal of Medicinal Chemistry* **2007**, 42 (5), , 675-685; Robust Fuzzy Mappings for QSAR studies.
7. R. Stoll, S. Kreuzfeld, M. Weippert, R. Vilbrandt, N. Stoll, *Journal Association Laboratory Automation JALA* **2007**, 12 (2), 110-114; System for Flexible Field Measurement of Physiological Data of Operators Working in Automated Labs.
8. K. Thurow, S. Junginger, Ü. Kolukisaoglu, N. Stoll. *Bioforum*, **2007**, 30 (5), 23-25; Automatisierte Zellkultivierung - Der nächste Schritt auf dem Weg zum vollautomatisierten Labor.
9. A. Göde, K. Rimane, S. Holzmüller-Laue, N. Stoll, *GIT Labor-Fachzeitschrift*, **2006**, 3 (50), 218-220; Adaptive Online-Steuerung von Gerätesystemen - Die direkte Ansteuerung von Geräten aus einem LIMS.
10. A. Göde, K. Rimane, S. Holzmüller-Laue, N. Stoll; *Transkript*, **2006**, 10 (12); Trends bei LIMS für die Biotechnologie.
11. A. Göde, K. Rimane, N. Stoll; *Laborwelt*, **2006**, 2 (7), 36-41, 48-51; Trends bei Labor- Informations-Management-Systemen (LIMS).
12. M. Kumar, N. Stoll, R. Stoll, *Automatica*, **2006**, 42, 711-721; An Energy Gain Bounding Approach to Robust Fuzzy Identification.
13. M. Kumar, R. Stoll, N. Stoll, *IEEE Transactions on System, Man and Cybernetics* **2006**, 36 (4), 767-780; A Deterministic Approach to Robust Adaptive Learning of Interpretible Fuzzy Models.
14. M. Kumar, R. Stoll, N. Stoll, *IEEE Transactions on Fuzzy Systems* **2006**, 14 (2), 314-328; A Robust Design Criterion for Interpretable Fuzzy Models with Uncertain Data.
15. M. Kumar, R. Stoll, N. Stoll, *IEEE Transactions on Fuzzy Systems* **2006**, 14 (2), 248-262; A Min-Max Approach to Fuzzy Clustering, Estimation and Identification.
16. N. Stoll, A. Allwardt, U. Dingerdissen, K. Thurow, *Chem. Ing. Tech.* **2006**, 78 (7) 937-947. Ein 8-fach Parallel-Reaktionssystem für die kombinatorische Katalyseforschung.
17. N. Stoll, A. Allwardt, U. Dingerdissen, K. Thurow, *Journal of Automated Methods and Management in Chemistry* **2006**, 1-9; An 8fold Parallel Reactor System for Combinatorial Catalysis Research.
18. N. Stoll, T. Krüger, S. Hagemann, K. Thurow *GIT Laborfachzeitschrift*, **2006**, 50 (1), 29-32; Von der Mikro- zur Nanodosierung - Trends und Entwicklungen in der Liquid-Dosiertechnik.
19. N. Stoll, E. Schmidt, K. Thurow, *Journal of the American Society for Mass Spectrometry* **2006**, 17 (12), 1692-1699; Isotopic Pattern Evaluation for the Reduction of Elemental Compositions assigned to High Resolved Mass Spectral Data from Electrospray Ionization Fourier Transform Ion Cyclotron Resonance Mass Spectrometry.
20. K. Thurow, N. Stoll, *BioForum Europe 3* **2006**, 33-35; Automating Analytical Processes.

21. K. Thurow, N. Stoll, *Bioforum* **2006**, 29 (3), 42-44; Trends in der Automatisierung Analytischer Verfahren.
22. Allwardt, N. Stoll, C. Wendler, K. Thurow, *Journal of Automated Methods & Management in Chemistry* **2005**, 26, 26-30; New Developments in the Field of Reaction Technology: The Multi Parallel Reactor HPMR 50-96.
23. Göde, K. Rimane, S. Holzmüller-Laue, N. Stoll, *LITUS* **2005**, 2, 12-14; Adaptive Online-Steuerung von Gerätesystemen - Die direkte Ansteuerung von Geräten aus einem LIMS.
24. K. Entzian, A. Allwardt, S. Holzmüller-Laue, S., Junginger, T. Roddelkopf, N. Stoll, K. Thurow, *VDI Berichte*, **2005**, 1883, 235-242; Automationslösungen für biologische und chemische Screeningverfahren.
25. N. Stoll, I. Hawali, K. Thurow, *Journal of Automated Methods & Management in Chemistry* **2005**, 26, 230-234, Automated Micro Dosing System for Integration with a Miniaturized High-Pressure Reactor System.
26. N. Stoll, S. Junginger, T. Roddelkopf, K. Thurow, *LITUS* **2005**, 26-27. Error Broadcasting – Automatisierte Überwachung komplexer Laboranlagen.
27. K. Thurow, B. Göde, K. Rimane, N. Stoll, *GIT Laborfachzeitschrift* **2005**, 2, 124-125; Remote Control für Life-Science-Labore.
28. K. Thurow, S. Junginger, N. Stoll, *BioSpektrum* **2005**, 11 (5), 666-670; Systemintegration für die Vollautomation – Von Einzelkomponenten zum Gesamtsystem.
29. A. Allwardt, K. Thurow, C. Wendler, N. Stoll, *Journal of Automated Methods & Management in Chemistry* **2005**, 1, 26-30; Multi Parallel Reactor HPMR 50-96 - A New Step in Robot Integrated Reaction Systems.
30. A. Allwardt, N. Stoll, C. Wendler, K. Thurow, *Chemie Ingenieur Technik* **2004**, 76, 1679-1682; Neue Entwicklungen in der Reaktionstechnologie - Der Multiparallelreaktor HPMR 50-96.
31. M. Kumar, R. Stoll, N. Stoll, *Fuzzy Optimization and Decision Making* **2004**, 3 (1), 63-82; Robust solution to Fuzzy Identification Problem with Uncertain Data by Regularization. Fuzzy Approximation to Physical Fitness with Real World Medical Data: An Application.
32. M. Kumar, R. Stoll, N. Stoll, *Fuzzy Optimization and Decision Making*, **2004**, 3 (3), 195-216; Robust Adaptive Identification of Fuzzy Systems with uncertain Data. A Fuzzy Expert System for Physical Fitness Approximation with Real World Medical Data: An Application.

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33. N. Stoll, K. Thurow, In: Medical Automation, Chapter 12, **2008**, 197-209; Process Management Using Information Systems - Principles and Systems.
34. K. Thurow, S. Hagemann, N. Stoll; Chapter 2: In: B. Nelson, M, Zhang, R. Felder: Life Science Engineering. **2007**, 23-66; Basic Analytical Chemistry for Engineers.
35. N. Stoll, S. Hagemann, K. Thurow; In: B. Nelson, M, Zhang, R. Felder (Eds.): Life Science Automation – Fundamentals and Applications. **2007**, Artech House Inc. (USA), 319-348; Chapter 12: Bio-Instrumentation Automation.
36. N. Stoll, K. Thurow, S. Hagemann; IMS-Press, ISBN 9-938042-02-8 **2005**, 100 Seiten; Neue Wirkstoffe und Biomaterialien- Screeningverfahren und Produktentwicklung.

#### **Betreute Dissertationsthemen (2004 - 2009):**

**(Doppelbetreuung mit Prof. K. Thurow)**

- **Fröhlich, Anne:** Kopplung eines Mikroreaktorsystems an ein HRMS
- **Kleinwächter, Andre:** Entwicklung einer flexiblen Roboterplattform für die Laborautomatisierung im Single Vessel Handling
- **Dr. Krüger, Thomas:** Beiträge zur Optimierung von automatischen Flüssigkeitsdosiersystemen auf Basis der Piezotechnologie (**2008**)

- **Dr. Schmidt, Enrico:** Algorithmierung und automatisierte Datenauswertung für die hochauflösende und ultrahochauflösende Massenspektrometrie (**2007**)

**Drittmittelprojekte (2004 - 2009):**

- BMBF; Campus PlasmaMed. Teilvorhaben: "*Campus PlasmaMed II*"; 07/2008-12/2010.
- BMBF / Industrie; „*celisca - Center for Life Science Automation*“; 05/2005-04/2010.
- BMBF, FIT 50+; 08/2007-07/2010.
- DFG; Graduiertenkolleg 1213 – „*Neue Methoden für Nachhaltigkeit in Katalyse und Technik*“; 07/2005- 12/2009.

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**Wissenschaftlicher Werdegang:**


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1956	Geboren in Stolpen
1962–1974	Schulbildung (Grundschule in Stolpen, Erweiterte Oberschule in Sebnitz, Abschluss Abitur)
1974–1979	Chemiestudium an der Humboldt-Universität zu Berlin, Diplomarbeit „Gaschromatographische Mikrobestimmung von perfluorierten Kohlenwasserstoffen“
1980–1985	Wissenschaftliche Assistentin im Fachbereich „Anorganische Chemie der Humboldt-Universität zu Berlin mit einjähriger Unterbrechung wegen Erziehungsurlaubs
1985	Dissertation „Untersuchungen zur Darstellung von Difluorcarben und seinen Reaktionen mit ausgewählten kovalenten Halogeniden“
1985-1991	<i>Zentralinstitut für Anorganische Chemie Berlin (ZIAC) der Akademie der Wissenschaften der DDR</i> : Wissenschaftliche Mitarbeiterin im Bereich Festkörperchemie
1992–1993	<i>Zentrum für Anorganische Polymere der KAI e. V. Berlin (ZAP)</i> : Wissenschaftliche Mitarbeiterin  <i>Institut für Angewandte Chemie Berlin-Adlershof e. V. (ACA)</i>
1994–1998	Wissenschaftliche Mitarbeiterin im Forschungsbereich Katalyse
1998–2006	Leiterin der Forschungsgruppe „Entwicklung und Anwendung von in-situ-Methoden zum Studium heterogen katalysierter Vorgänge“
2002–2006	Stellvertreterin des wissenschaftlichen Direktors
2002	Habilitation im Fach Physikalische Chemie an der Humboldt-Universität zu Berlin zum Thema „Spectroscopic in-situ investigations of transition metal oxide catalysts: The key for understanding structure-reactivity relationships“  <i>Leibniz-Institut für Katalyse, Außenstelle Berlin (LIKAT)</i>
seit 2006	Mitglied des Vorstandes und Leiterin des Forschungsbereichs „Katalytische in situ-Studien“ und der Themengruppe „Magnetische Resonanz- und Röntgenmethoden“
Dez 2006	Forschungsaufenthalt an der Universität Lille (Frankreich), Unité de Catalyse et de Chimie du Solide
seit 04/2007	Direktorin der Außenstelle Berlin des LIKAT

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## Auszeichnungen und weitere Tätigkeiten:

---

Juni 2008	Invited Professor, Universität Lille (Frankreich), Unité de Catalyse et de Chimie du Solide
2002 – 2004	Newsbrief Correspondent für „Applied Catalysis A: General“
2004 – 2008	Mitglied des Editorial Board von „Catalysis Communications“
seit 2004	Mitglied des Advisory Board des International Congress on Operando Spectroscopy
seit 2006	Mitglied des Vorstandes von ConNeCat
seit 2008	Editor von „Catalysis Communications“

---

## Publikationen (2004–2009):

1. M.-M. Pohl, J. Radnik, M. Schneider, U. Bentrup, D. Linke, A. Brückner, E. Ferguson, *J. Catal.* **2009**, im Druck; Bimetallic Pd,Au-KOAc/SiO<sub>2</sub> catalysts for vinyl acetate monomer (VAM) synthesis: Insights into deactivation under industrial conditions.
2. U. Bentrup, J. Radnik, U. Armbruster, A. Martin, J. Leiterer, F. Emmerling, A. Brückner, *Top. Catal.* **2009**, im Druck; Linking simultaneous in situ WAXS/SAXS/Raman with Raman/ATR/UV-vis spectroscopy: Comprehensive insight into the synthesis of molybdate catalyst precursors.
3. F. Shi, M. K. Tse, M.-M. Pohl, A. Brückner, S. Zhang, M. Beller, *Angew. Chem. Int. Ed* **2009**, in press; Tuning catalytic activity between homogeneous and heterogeneous catalysis: Improved activity and selectivity of free nano-Fe<sub>2</sub>O<sub>3</sub> in selective oxidations.
4. F. G. Gelalcha, G. Anilkumar, M. K. Tse, A. Brückner, M. Beller *Chemistry - A European Journal*, **2008**, *14*, 7687-7698; Biomimetic Iron-Catalyzed Asymmetric Epoxidation of Aromatic Alkenes by Using Hydrogen Peroxide.
5. F. Klasovsky, J. Hohmeyer, A. Brückner, M. Bonifer, J. Arras, M. Steffan, M. Lucas, J. Radnik, C. Roth, P. Claus, *J. Phys. Chem. C* **2008**, *112*, 19555-19559; Catalytic and mechanistic investigation of polyaniline supported PtO<sub>2</sub> nanoparticles: A combined in situ operando EPR, DRIFTS, and EXAFS study
6. M. Schwidder, S. Heikens, A. De Toni, S. Geisler, M. Berndt, A. Brückner, W. Grünert, *J. Catal.* **259** **2008**, 96-103; The Role of NO<sub>2</sub> in the Selective Catalytic Reduction of Nitrogen Oxides over Fe-ZSM-5 Catalysts – Active Sites for the Conversion of NO and of NO/NO<sub>2</sub> Mixtures.
7. A. Brückner, J. K. Jabor, A. E. C. McConnell, P. B. Webb, *Organometallics*, **2008**, *27*, 3849; Monitoring Structure and Valence State of Chromium Sites during Catalyst Formation and Ethylene Oligomerization by in Situ EPR Spectroscopy.
8. A. Martin, V. N. Kalevaru, B. Lücke, A. Brückner, *Appl. Catal. A: Gen.* **2008**, *335*, 196-203; Deactivation and oxidative regeneration of VTiSbSiO<sub>x</sub> catalyst for ammoxidation of 3-picoline to nicotinonitrile.
9. M. Schwidder, M. Santhosh Kumar, U. Bentrup, Javier Pérez-Ramírez, A. Brückner, W. Grünert, *Micropor. Mesopor. Mater.*, **2008**, *111*, 124; The role of Bronsted acidity in the selective reduction of NO over Fe-ZSM-5 catalysts.
10. A. Brückner, *Adv. Catal.* **2007**, *51*, 265-308; Electron Paramagnetic Resonance: A Powerful Tool for Monitoring Working Catalysts.
11. F. Shi, M. K. Tse, M.-M. Pohl, A. Brückner, S. Zhang, M. Beller, *Angew. Chem. Int. Ed.* **2007**, *46*, 8866 – 8868; Tuning catalytic activity between homogeneous and heterogeneous catalysis: Improved activity and selectivity of free nano-Fe<sub>2</sub>O<sub>3</sub> in selective oxidations.

12. K. Schröder, X. Tong, B. Bitterlich, M. K. Tse, F. G. Gelalcha, A. Brückner, M. Beller, *Tetrahedron Letters* **2007**, *48*, 6339-6342; Novel biomimetic iron-catalysts for environmentally benign epoxydations of olefins.
13. De Toni, M. Schwidder, A. Brückner, W. Grünert, *Chemie-Ingenieur-Technik* **2007**, *79*, 871; Zentrenstruktur und Vergiftungswirkungen bei der selektiven katalytischen Reduktion von NO mit Ammoniak an Fe-ZSM-5-Katalysatoren (Poisoning and Site Structure in the Selective Catalytic Reduction of NO by NH<sub>3</sub> over Fe-ZSM-5 Catalysts).
14. E. Berrier, O. Ovsitser, E. V. Kondratenko, M. Schwidder, W. Grünert, A. Brückner, *J. Catal.* **2007**, *249*, 67-78; Temperature-dependent N<sub>2</sub>O decomposition over Fe-ZSM-5: Identification of sites with different activity.
15. A. Brückner, *Advances in Catalysis* **2007**, *51*, 265-308; Electron Paramagnetic Resonance: A Powerful Tool for Monitoring Catalytic Systems in situ.
16. A. Brückner, G. Scholz, D. Heidemann, M. Schneider, D. Herein, U. Bentrup, M. Kant, *J. Catal.* **2007**, *245*, 369-380; Selective oxidation of isobutane over H<sub>4</sub>PVMo<sub>11</sub>O<sub>40</sub> x H<sub>2</sub>O: New insights on active sites by a comprehensive in situ approach.
17. A. Brückner, *Topics in Catalysis* **2006**, *38*, 133; Spin-spin exchange in vanadium-containing catalysts studied by in situ-EPR: a sensitive monitor for disorder-related activity.
18. U. Bentrup, A. Brückner, M. Kant, S. Kolf, U. Dingerdissen, S. Jansen, D. Maschmeyer, H. Siegert, H. W. Zanthoff, *Erdöl Erdgas Kohle* **2006**, *122*, OG 145; Selective oxidation of i-butane and i-butene to methacrolein and methacrylic acid over Keggin-type polyoxometalate and MoVTenbO<sub>x</sub> catalysts: A comparative catalytic and in situ-spectroscopic study.
19. J. C. Groen, L. Maldonado, E. Berrier, A. Brückner, J. A. Moulijn, J. Perez-Ramirez, *J. Phys. Chem. B* **2006**, *110*, 20369-20378; Alkaline treatment of iron-containing MFI zeolites. Influence on mesoporosity development and distribution of iron species.
20. J. C. Groen, A. Brückner, E. Berrier, L. Maldonado, J. A. Moulijn, J. Perez-Ramirez, *J. Catal.* **2006**, *243*, 212-216; Active site enhancement in direct N<sub>2</sub>O decomposition upon controlled desilication of Fe-ZSM-5.
21. U. Bentrup, A. Brückner, M. Kant, S. Kolf, U. Dingerdissen, S. Jansen, D. Maschmeyer, H. Siegert, H. W. Zanthoff, *DGMK-Tagungsbericht* **2005-2**, 115; Selective oxidation of i-butane and i-butene to methacrolein and methacrylic acid over Keggin-type polyoxometalate and MoVTenbO<sub>x</sub> catalysts: A comparative catalytic and in situ-spectroscopic study.
22. M. Santhosh Kumar, M. Schwidder, W. Grünert, U. Bentrup, A. Brückner, *J. Catal.* **2006**, *239*, 173-186; Selective reduction of NO with Fe-ZSM-5 catalysts of low Fe content: Part II: Assessing the function of different Fe sites by spectroscopic in situ studies.
23. Köckritz, M. Sebek, A. Dittmar, J. Radnik, A. Brückner, U. Bentrup, M.-M. Pohl, H. Hugl, W. Mägerlein *J. Mol. Catal. A: Chemical* **2005**, *246*, 85-99; Ru-catalyzed oxidation of primary alcohols.
24. S. Kumar, J. Pérez-Ramírez, M. N. Debbagh, B. Smarsly, U. Bentrup, A. Brückner, *Appl. Catal. B: Environ.* **2006**, *62*, 244-254; Evidence of the vital role of the pore network on various catalytic conversions of N<sub>2</sub>O over Fe-silicalite and Fe-SBA-15 with the same iron constitution.
25. A. Brückner, E. Kondratenko *Catal. Today* **2006**, *113*, 16-24; Simultaneous operando EPR/UV-vis/laser-Raman spectroscopy - A powerful tool for monitoring transition metal oxide catalysts during reaction.
26. U. Bentrup, A. Brückner, M. Fait, B. Kubias, J. B. Stelzer *Catal. Today* **2006**, *112*, 78-81; Structure-reactivity relationships in VO<sub>x</sub>/TiO<sub>2</sub> catalysts for the oxyhydrative scission of 1-butene and n-butane to acetic acid as examined by in situ-spectroscopic methods and catalytic tests.
27. M Schwidder, M. Santhosh Kumar, A. Brückner, W. Grünert, *Chem. Commun.* **2005**, 805-807; Active sites for NO reduction over Fe-ZSM-5 catalysts.
28. J. Perez-Ramirez, J. C. Groen, A. Brückner, M. S. Kumar, U. Bentrup, M. N. Debbagh, L. A. Villaescusa, *J. Catal.* **2005**, *232*, 318-334; Evolution of isomorphously substituted iron zeolites during activation: comparison of Fe-beta and Fe-ZSM-5.

29. M. Schwidder, M. Santhosh Kumar, K. Klementiev, M. M. Pohl, A. Brückner, W. Grünert, *J. Catal.* **2005**, *231*, 314-330; Selective Reduction of NO with Fe-ZSM-5 Catalysts of Low Fe content: I. Relations between Active Site Structure and Catalytic Performance.
30. A. Brückner, *Chem. Commun.* **2005**, *13*, 1761-1763; Killing three birds with one stone – Simultaneous operando EPR/UV-vis/Raman spectroscopy for monitoring catalytic reactions.
31. A. Brückner, U. Bentrup, M. Fait, B. Kubias, *Catal. Today* **2005**, *99*, 123-129, Structure-reactivity relationships in supported VO<sub>x</sub> catalysts for the oxyhydrative scission (OHS) of 1-butene and n-butane to acetic acid: A comprehensive catalytic and in situ-study.
32. A. Brückner, U. Bentrup, J.-B. Stelzer, *Z. Anorg. Allg. Chem.* **2005**, *631*, 60-66; The Influence of Sulfate-Doping on the Nature of V Sites in VO<sub>x</sub>/TiO<sub>2</sub> Catalysts.
33. U. Bentrup, A. Brückner, M. Fait, B. Kubias, J. B. Stelzer, *DGMK-Tagungsbericht* **2004**, 109; Structure-reactivity relationships in supported VO<sub>x</sub>/TiO<sub>2</sub> catalysts for the oxyhydrative scission of 1-butene to acetic acid: A comprehensive catalytic and in situ-spectroscopic study.
34. P. Albers, U. Bentrup, A. Brückner, F. Nierlich, H.-W. Zanthoff, D. Maschmeyer, *DGMK-Tagungsbericht* **2004**, 145; Oligomerisation of C<sub>3</sub>-C<sub>5</sub> on Solid State Nickel Compounds: Complex Catalysts for a Versatile Reaction.
35. M. Santhosh Kumar, M. Schwidder, W. Grünert and A. Brückner, *J. Catal.* **2004**, *227*, 384-397; On the nature of different iron sites and their catalytic role in Fe-ZSM-5 DeNO<sub>x</sub> catalysts: New insights by a combined EPR and UV/VIS spectroscopic approach.
36. U. Bentrup, A. Brückner, C. Rüdinger, H.-J. Eberle, *Appl. Catal. A: General* **2004**, *269*, 237-248; Elucidating structure and function of active sites in VO<sub>x</sub>/TiO<sub>2</sub> catalysts during oxyhydrative scission of 1-butene by in situ and operando spectroscopy.
37. J. Pérez-Ramirez, M. Santhosh Kumar, A. Brückner, *J. Catal.* **2004**, *223*, 13-27; Reduction of N<sub>2</sub>O with CO over FeMFI zeolites: influence of the preparation method on the iron species and catalytic behavior.
38. Q. Smejkal, D. Linke, U. Bentrup, M.-M. Pohl, H. Berndt, M. Baerns, A. Brückner, *Appl. Catal. A: General* **2004**, *268*, 67-76; Combining Accelerated Activity Tests and Catalyst Characterization: A Time-saving Way to Study the Deactivation of Vinylacetate Catalysts.
39. W. Grünert, A. Brückner, H. Hofmeister, P. Claus, *J. Phys. Chem.* **2004**, *108*, 5709-5717; Structural properties of Ag/TiO<sub>2</sub> catalysts used for acrolein hydrogenation.
40. G. Boskovic, N. Dropka, D. Wolf, A. Brückner, M. Baerns, *J. Catal.* **2004**, *226*, 334-342; Deactivation Kinetics of a Commercial Ag/Al<sub>2</sub>O<sub>3</sub> Catalyst for Ethylene Epoxidation.
41. G. Boskovic, D. Wolf, A. Brückner, M. Baerns, *J. Catal.* **2004**, *224*, 187-196; Deactivation of a Commercial Catalyst in the Epoxidation of Ethylene to Ethylene Oxide - Bases for Accelerated Testing.

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42. A. Brückner in *In situ Spectroscopy of Catalysts*, ed. B. M. Weckhuysen, American Scientific Publishers, Stevenson Ranch, California **2004**, 219-251; Electron Paramagnetic resonance.

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