

## 1 PhD Thesis

"Planar-chirale Liganden und Ligandensysteme: Stereoselektive Darstellung und Einsatz in der asymmetrischen Katalyse"

Mainz-Verlag, Aachen **1999** (*Aachener Beiträge zur Chemie*, Band 7).

## Habilitation Thesis

"Studien zur Asymmetrischen Diaminierung von Olefinen"

Bonn **2004**.

## 2 Research Publications

- 114 Defined Palladium Phthalimidato Catalysts for Improved Oxidative Amination  
C. Martínez, K. Muñiz  
*Chem. Eur. J.* **2016**, DOI: 10.1002/chem.201601128
- 113 An Improved Catalyst for Iodine(I/III)-Catalysed Intermolecular C-H Amination  
N. Lucchetti, M. Scalone, S. Fantasia, K. Muñiz  
*Adv. Synth. Catal.* **2016** DOI: 10.1002/adsc.201600191  
[Very Important Publication \(selected by the referees and the editorial office\)](#)  
[Highlighted on the journal cover](#)
- 112 DFT Rationalization of the Diverse Outcomes of the Iodine(III)-Mediated Oxidative Amination of Alkenes  
I. Funes-Ardoiz, W. M. C. Sameera, R. M. Romero, C. Martínez, J. A. Souto, K. Muñiz, F. Maseras  
*Chem. Eur. J.* **2016**, DOI: 10.1002/chem.201600415R1
- 111 Indole Synthesis through Sequential Electrophilic N-H and C-H Bond Activation using Iodine(III) Reactivity  
L. Fra, K. Muñiz  
*Chem. Eur. J.* **2016**, 22, 4351.  
[Hot Paper \(selected by the Editorial Office\)](#)  
[Highlighted on the journal backside cover](#)
- 110 N-Iodosuccinimide promoted Hofmann-Löffler Reactions of Sulfonimides under Visible Light  
C. Q. O'Broin, P. Fernández, C. Martínez, K. Muñiz  
*Org. Lett.* **2016**, 18, 436.
- 109 Enantioselective Vicinal Diacetoxylation of Alkenes under Chiral Iodine(III) Catalysis  
T. H. Wöste, K. Muñiz  
*Synthesis* **2016**, 48, DOI: 10.1055/s-0035-1561313  
[Feature Article](#)

- 108a Structurally Defined Molecular Hypervalent Iodine Catalysts for Intermolecular Enantioselective Reactions  
S. Haubenreisser, T. H. Wöste, C. Martínez, K. Ishihara, K. Muñiz  
*Angew. Chem. Int. Ed.* **2016**, 55, 413.  
[Highlighted on the journal cover](#)
- 108b Strukturell Definierte Molekulare Hypervalente Iod-Katalysatoren für Intermolekulare Enantioselektive Reaktionen  
S. Haubenreisser, T. H. Wöste, C. Martínez, K. Ishihara, K. Muñiz  
*Angew. Chem.* **2016**, 128, 422.  
[Highlighted on the journal cover](#)
- 107 A Mild Carbon-Boron Bond Formation from Diaryliodonium Salts  
N. Miralles, R. M. Romero, E. Fernández, K. Muñiz,  
*Chem. Commun.* **2015**, 51, 14068.
- 106a An Iodine Catalyzed Hofmann-Löffler Reaction  
C. Martínez, K. Muñiz  
*Angew. Chem. Int. Ed.* **2015**, 54, 8287.
- 106b Eine Iod-Katalysierte Hofmann-Löffler-Reaktion  
C. Martínez, K. Muñiz  
*Angew. Chem.* **2015**, 127, 8405.
- 105 Amidato complexes of ruthenium, rhodium and iridium from concise N-H bond activation: exploration in catalysis  
R. M. Romero, L. Fra, A. Lishchynskyi, C. Martínez, J. Streuff, K. Muñiz  
*Tetrahedron* **2015**, 71, 4465.
- 104 Hypervalent Iodine Mediated Oxidative Amination of Allenes  
N. Purkait, S. Okamura, J. A. Souto, K. Muñiz,  
*Org. Lett.* **2014**, 16, 4750.
- 103a Indole Synthesis Based On A Modified Koser Reagent  
L. Fra, A. Millán, J. A. Souto, K. Muñiz  
*Angew. Chem. Int. Ed.* **2014**, 53, 7349.
- 103b Synthese von Indolen durch ein modifiziertes Koser-Reagens  
L. Fra, A. Millán, J. A. Souto, K. Muñiz  
*Angew. Chem.* **2014**, 126, 7477
- 102 Recent Progress in Vicinal Difunctionalization of Alkenes with Iodine(III) Reagents and Catalysts  
M. Romero, T. Wöste, K. Muñiz,  
*Chem. Asian J.* **2014**, 9, 972.
- 101 Copper-Mediated 1,4-Diamination of 1,3-Butadienes  
C. Martínez, L. Martínez, J. Kirsch, E. C. Escudero-Adán, E. Martín, K. Muñiz  
*Eur. J. Org. Chem.* **2014**, 2017.
- 100 A New Remote Control for Traceless *meta*-C-H Olefination of Phenols  
C. Martínez, K. Muñiz,  
*ChemCatChem.* **2013**, 5, 3502.
- 99 A Versatile Metal-Free Intermolecular Aminochlorination of Alkenes

- C. Martínez, K. Muñiz,  
*Adv. Synth. Catal.* **2014**, 356, 205.
- 98 Pinacol Rearrangement  
K. Muñiz  
in *Compreh. Organic Synthesis II* (Eds: G. Molander, P. Knochel), Vol. 3, Elsevier, Oxford, **2014**, 741-756.
- 97 Palladium Catalyzed Intermolecular Aminoacetoxylation of Alkenes and the Influence of  $\text{PhI}(\text{OAc})_2$  on Aminopalladation Stereochemistry  
C. Martínez, Y. Wu, A. B. Weinstein, S. S. Stahl, G. Liu, K. Muñiz  
*J. Org. Chem.* **2013**, 78, 6309.
- 96 Metal-free Catalytic Vicinal Diamination of Alkenes  
K. Muñiz  
*Pure & Appl. Chem.* **2013**, 85, 755.
- 95 Addition Reactions with Formation of Carbon-Oxygen and Carbon-Nitrogen Bonds: Dihydroxylation, Aminihydroxylation and Diamination  
K. Muñiz  
in *Compreh. Organic Synthesis II* (Eds: G. Molander, P. Knochel), Vol. 7, Elsevier, Oxford, **2014**, 411-430.
- 94 Oxidative Diamination Promoted by Dinuclear Iodine(III) Reagents  
C. Röben, J. A. Souto, E. C. Escudero-Adán, K. Muñiz  
*Org. Lett.* **2013**, 15, 1008.
- 93 Development of Intramolecular Vicinal Diamination of Alkenes: From Palladium to Bromine Catalysis (JOCSynopsis)  
C. Martínez, K. Muñiz  
*J. Org. Chem.* **2013**, 78, 2168.
- 92a Defined Hypervalent Iodine(III) Reagents incorporating transferable Nitrogen Groups: Nucleophilic Amination through Electrophilic Activation  
J. A. Souto, C. Martínez, I. Velilla, K. Muñiz  
*Angew. Chem. Int. Ed.* **2013**, 52, 1324.
- 92b Definierte hypervalente Iod(III)-Reagentien mit transferierbaren Stickstoffgruppen: nucleophile Aminierung durch elektrophile Aktivierung  
J. A. Souto, C. Martínez, I. Velilla, K. Muñiz  
*Angew. Chem.* **2013**, 125, 1363
- 91 Studies on Alkyl-Nitrogen Bond Formation via Reductive Elimination from Monomeric Palladium Complexes in High Oxidation State  
Á. Iglesias, K. Muñiz  
*Helv. Chim. Acta* **2012**, 95, 2007
- 90 Oxidative Functionalization of Alkenes  
K. Muñiz, C. Martínez,  
Metal-Catalyzed Cross-Coupling Reactions and More (Eds.: S. Bräse, A. de Meijere, M. Oestreich), Vol. 3, Chapter 17, Wiley-VCH, Weinheim, **2013**, 1259-1314.

- 89 Metal-Free Iodine(III)-Promoted Direct Intermolecular C–H Amination Reactions of Acetylenes  
J. A. Souto, P. Becker, Á. Iglesias, K. Muñiz  
*J. Am. Chem. Soc.* **2012**, *134*, 15505.
- 88a Palladium-Catalyzed Vicinal Difunctionalization of Internal Alkenes: A Diastereoselective Diamine Synthesis  
C. Martínez, K. Muñiz  
*Angew. Chem. Int. Ed.* **2012**, *51*, 7031.
- 88b Palladium-katalysierte vicinale Difunktionalisierung von internen Alkenen zur diastereoselektiven Diaminsynthese  
C. Martínez, K. Muñiz  
*Angew. Chem.* **2012**, *124*, 7138.
- 87 Iodine(III)-Mediated Intermolecular Allylic Amination under Metal-Free Conditions  
J. A. Souto, D. Zian, K. Muñiz  
*J. Am. Chem. Soc.* **2012**, *134*, 7242.
- 86 Asymmetric Diamination of Alkenes  
J. A. Souto, K. Muñiz  
in *Asymmetric Synthesis II* (Eds. M. Christmann, S. Bräse), Wiley-VCH, Weinheim 2012, 46.
- 85 Diamination of Alkenes Employing Halide Catalysis  
P. Chavez, J. Kirsch, C. H. Hövelmann, J. Streuff, M. Martínez-Belmonte, E. C. Escudero-Adán, E. Martín, K. Muñiz  
*Chem. Sci.* **2012**, *3*, 2375.
- 84 Iodine(III)-Promoted Intermolecular Diamination of Alkenes  
J. Souto, Y. González. A. Iglesias, D. Zian, A. Lishchynskyi, K. Muñiz  
*Chem. Asian J.* **2012**, *7*, 1103.  
[Highlighted on the journal cover](#)
- 83 Palladium-Catalyzed Intramolecular Diamination of Acrylic Esters Using Sulfamates as Nitrogen Source  
P. Chavez, J. Kirsch, J. Streuff, K. Muñiz  
*J. Org. Chem.* **2012**, *77*, 1922.
- 82a Palladium Catalyzed Intermolecular C-H-Amidation of Csp<sup>3</sup> Groups  
Á. Iglesias, R. Álvarez, Á. R. de Lera, K. Muñiz  
*Angew. Chem. Int. Ed.* **2012** *51*, 2225.  
[Hot Paper \(selected by the Editorial office\)](#)
- 82b Palladiumkatalysierte intermolekulare C-H-Amidierung von Csp<sup>3</sup>-Gruppen  
Á. Iglesias, R. Álvarez, Á. R. de Lera, K. Muñiz  
*Angew. Chem.* **2012** *124*, 2268.  
[Hot Paper \(selected by the Editorial office\)](#)
- 81 Oxidation: C–N Bond Formation by Oxidation: Dinitrogen Addition to Double Bond (Diamino)  
K. Muñiz  
in *Comprehensive Chirality* (Eds. E. M. Carreira, H. Yamamoto), 2012, Elsevier, Volume 5, 183

- 80 An Approach to Regioselective Diamination of Conjugated Dienes and Trienes  
A. Lishchynskiy, K. Muñiz  
*Chem. Eur. J.* **2012**, *18*, 2213.
- 79a Enantioselective Metal-Free Diamination of Styrenes  
C. Röben, J. A. Souto, Y. González, A. Lishchynskiy, K. Muñiz  
*Angew. Chem. Int. Ed.* **2011**, *50*, 9478.  
[Hot Paper \(selected by the Editorial office\)](#)
- 79b Enantioselective metallfreie Diaminierung von Styrolen  
C. Röben, J. A. Souto, Y. González, A. Lishchynskiy, K. Muñiz  
*Angew. Chem.* **2011**, *123*, 9650.  
[Hot Paper \(selected by the Editorial office\)](#)
- 78 Pd-N to Pd-O Rearrangement for a Carbamate Synthesis from Carbon Dioxide and Methane: A Density Functional and Ab Initio Molecular Dynamics Metadynamics Study  
P. J. di Dio, M. Bruessel, K. Muñiz, R. S. Ray, S. Zahn, B. Kirchner  
*Angew. Chem. Int. Ed.* **2011**, *50*, A40.
- 77 Comparison of Free Energy Surfaces Calculations from Ab Initio Molecular Dynamic Simulations at the Example of Two Transition Metal Catalyzed Reactions  
M. Bruessel, P. J. di Dio, K. Muñiz, B. Kirchner  
*Int. J. Mol. Sci.* **2011**, *12*, 1389.
- 76 Metal-Ligand Bifunctional Activation and Transfer of N-H Bonds  
K. Muñiz, A. Lishchynskiy, J. Streuff, M. Nieger, E. C. Escudero-Adán, M. Martínez Belmonte  
*Chem. Commun.* **2011**, *47*, 4911.
- 75 Intermolecular Regioselective 1,2-Diamination of Allylic Ethers  
K. Muñiz, J. Kirsch, P. Chávez,  
*Adv. Synth. Catal.* **2011**, *353*, 689.
- 74 Dihydroxylation, Aminohydroxylation, and Diamination  
K. Muñiz in  
*Stereoselective Synthesis, Oxidation* (ed. H. deVries), Science of Synthesis, Thieme 2011.
- 73a An Intermolecular Palladium-Catalyzed Diamination of Unactivated Alkenes  
A. Iglesias, E. G. Pérez, K. Muñiz,  
*Angew. Chem. Int. Ed.* **2010**, *49*, 8109.
- 73b Eine intermolekulare Palladium-katalysierte vicinale Diaminierung von nichtaktivierten Alkenen  
A. Iglesias, E. G. Pérez, K. Muñiz,  
*Angew. Chem.* **2010**, *122*, 8286.
- 72a High-Oxidation State Palladium Catalysis: New Reactivity for Organic Synthesis  
K. Muñiz,  
*Angew. Chem. Int. Ed.* **2009**, *48*, 9412.
- 72b Katalyse mit Palladium in hoher Oxidationsstufe: neue Reaktivität für die organische Synthese  
K. Muñiz,  
*Angew. Chem.* **2009**, *121*, 9576.

- 71 Electrophilic Halogenation alpha to Carbonyl Groups  
K. Muñiz  
in *C-X Bond Formation, Top. Organomet. Chem.* Vol. 31 (Ed.: A. Vigalok), Springer, Berlin, 2010, 1.
- 70 Platinum-Catalysed Aerobic 1,2-Aminoxygenation of Alkenes  
K. Muñiz, A. Iglesias, Y. Fang,  
*Chem. Commun.* **2009**, 5591.
- 69 Oxidative Interception of the Hydroamination Pathway: A Gold Catalyzed Diamination of Alkenes  
K. Muñiz, A. Iglesias,  
*Chem. Eur. J.* **2009**, 15, 10563.
- 68 Palladium Catalysis for Oxidative 1,2-Difunctionalization of Alkene  
K. Muñiz, B. Jacques  
in *Catalyzed Carbon-Heteroatom Bond Formation* (Ed.: A. Yudin), Wiley-VCH, Weinheim, 2010.
- 67 Synthesis of Diamino Carboxylic Esters by Palladium-Catalyzed Oxidative Intramolecular Diamination of Acrylates  
K. Muñiz, J. Streuff, P. Chávez, C. H. Hövelmann,  
*Chem. Asian J.* **2008**, 3, 1248.
- 66 Direct Synthesis of Bicyclic Guanidines through Unprecedented Palladium(II) Catalysed Diamination with Copper Chloride as Oxidant  
C. H. Hövelmann, J. Streuff, L. Brelot, K. Muñiz,  
*Chem. Commun.* **2008**, 2334.
- 65 Intramolecular Diamination of Alkenes Employing Palladium(II)/Copper(II) Bromide and IPy<sub>2</sub>BF<sub>4</sub>: The Role of Halogenated Intermediates  
K. Muñiz,\* C. H. Hövelmann, E. Campos-Gómez, J. Barluenga,\* J. M. González, J. Streuff, M. Nieger,  
*Chem. Asian J.* **2008**, 3, 776.
- 64 Comments on the Role of High Oxidation Catalyst State in the Selective Palladium Catalyzed 1,2-Difunctionalization of Alkenes  
K. Muñiz, C. H. Hövelmann, J. Streuff,  
*Latvian Chemistry Journal* **2007**, 4, 3.
- 63 Advancing Palladium-Catalyzed C-N Bond Formation: Bisindoline Construction from Successive Amide Transfer to Internal Alkenes  
K. Muñiz,  
*J. Am. Chem. Soc.* **2007**, 129, 14542.
- 62 Oxidative Diamination of Alkenes with Urea as Nitrogen Sources: Mechanistic Pathways in the Presence of a High Oxidation State Palladium Catalyst  
K. Muñiz, C. H. Hövelmann, J. Streuff,  
*J. Am. Chem. Soc.* **2008**, 130, 763.
- 61 Transition Metal Catalysed Diamination of Alkenes  
K. Muñiz, C. H. Hövelmann, J. Streuff, E. Campos-Gómez,  
*Pure Appl. Chem.* **2008**, 80, 1089.
- 60a Exploring the Nickel-Catalyzed Oxidation of Alkenes: A Diamination via Sulfamide Transfer  
K. Muñiz, J. Streuff, C. H. Hövelmann, A. Nuñez,  
*Angew. Chem. Int. Ed.* **2007**, 46, 7125.

- 60b Entwicklung Nickel-katalysierter Oxidationen von Alkenen: eine Diaminierung durch Sulfamid-Transfer  
K. Muñiz, J. Streuff, C. H. Hövelmann, A. Nuñez,  
*Angew. Chem.* **2007**, *119*, 7255.
- 59a Phenanthroline-Ligands in Aryl-Palladium-Hydrazinate Complexes: Catalysts for Efficient Coupling of Azo-Compounds with Aryl Boronic Acids  
K. Muñiz, A. Iglesias,  
*Angew. Chem.* **2007**, *46*, 6350.
- 59b Phenanthrolinliganden in Aryl-Palladium-Hydrazinato-Komplexen: Katalysatoren für die effiziente Kupplung von Azoverbindungen mit Arylboronsäuren  
K. Muñiz, A. Iglesias,  
*Angew. Chem.* **2007**, *119*, 6466.
- 58 Intramolecular Aminopalladation of Alkenes as a Key Step to Pyrrolidines and Related Heterocycles  
A. Minatti, K. Muñiz,  
*Chem. Soc. Rev.* **2007**, *36*, 1142.
- 57a Catalytic Activation of N-N-Multiple Bonds: a Defined Homogeneous Palladium Catalyst Site for Mechanistically Unprecedented Reduction of Azo Compounds  
K. Muñiz, M. Nieger,  
*Angew. Chem. Int. Ed.* **2006**, *45*, 2305.
- 57b Katalytische Aktivierung von N-N-Mehrfachbindungen: ein definierter homogener Palladiumkatalysator zur mechanistisch neuartigen Reduktion von Azoverbindungen  
K. Muñiz, M. Nieger,  
*Angew. Chem.* **2006**, *118*, 2363.
- 56 A Convenient and Highly Productive Aminohydroxylation Protocol Employing a Reusable Osmium-Diamine-Catalyst  
K. Muñiz, I. Almodovar, J. Streuff, M. Nieger,  
*Adv. Synth. Catal.* **2006**, *348*, 1831.
- 55 Asymmetrische Katalyse mit Metall-Komplexen  
K. Muñiz,  
*Chem. Unserer Zeit* **2006**, *40*, 112.
- 54 Enantioselective Diamination of Alkenes with a Bisimidoosmium Reagent and the Aid of Chiral Catalysts  
I. Almodovar, C. H. Hövelmann, J. Streuff, M. Nieger, K. Muñiz,  
*Eur. J. Org. Chem.* **2006**, 704.
- 53 Asymmetric Hydrogenation through Metal-Ligand Bifunctional Catalysis  
R. Noyori, T. Ohkuma, C. A. Sandoval, K. Muniz  
In *Asymmetric Synthesis – The Essentials* (Eds.: M. Christmann, S. Bräse), Wiley-VCH, Weinheim 2006.
- 52 Small Molecules on Tripeptide Basis through a Catalysis Sequence of Metathesis and Aminohydroxylation  
J. Streuff, M. Nieger, K. Muñiz,  
*Chem. Eur. J.* **2006**, *12*, 4363.

- 51 Palladium-Catalyzed Intramolecular Diamination of Alkenes  
J. Streuff, C. H. Hövelmann, M. Nieger, K. Muñiz,  
*J. Am. Chem. Soc.* **2005**, *127*, 14587.
- 50 First Asymmetric Aminohydroxylation of Acryl Amides  
J. Streuff, B. Osterath, M. Nieger, K. Muñiz,  
*Tetrahedron Asymmetry (Special Issue on Asymmetric Oxidation)* **2005**, *16*, 3492.
- 49 First Osmium-Catalyzed Ketamination of Alkenes  
K. Muñiz, A. Villar, C. H. Hövelmann, J. Streuff, R. Vicente, M. Nieger,  
*J. Mol. Catal. A* **2006**, *251*, 277.
- 48 Metal-Ligand Bifunctional Catalysis for Asymmetric Hydrogenation  
R. Noyori, C. A. Sandoval, K. Muñiz, T. Ohkuma,  
*Philosophical Trans. Royal Soc. A.* **2005**, 3635, 901.
- 47a Metal-Ligand Bifunctional Catalysis: Hydrogenations and New Reactions within the Metal-(Di)Amine Scaffold  
K. Muñiz,  
*Angew. Chem. Int. Ed* **2005**, *44*, 6622.
- 47b Bifunktionale Metall-Ligand-Katalyse: Hydrierungen und neue Reaktionen an der Metall-(Di)amin-Einheit  
K. Muñiz,  
*Angew. Chem.* **2005**, *117*, 6780.
- 46 Efficient synthesis of fumaric amides through cross-metathesis of acrylic amides with the NHC Grubbs ruthenium catalyst  
J. Streuff, K. Muñiz,  
*J. Organomet. Chem. (Special Issue on Carbene Chemistry)* **2005**, *690*, 5973.
- 45 Asymmetric Hydrogenation of *tert*-Alkyl Ketones  
T. Ohkuma, C. A. Sandoval, R. Srinivasan, Q. Lin, Y. Wei, K. Muñiz, R. Noyori,  
*J. Am. Chem. Soc.* **2005**, *127*, 8288.
- 44 The Development of Asymmetric Diamination of Alkenes  
K. Muñiz,  
*New J. Chem.* **2005**, *29*, 1371.  
[Highlighted on the journal cover](#)
- 43 Titanium Catalysts for Enantioselective Diamination of Alkenes with Imidoosmium Reagents  
K. Muñiz, M. Nieger,  
*Chem. Commun.* **2005**, 2729.
- 42 First Osmium-Catalyzed Ketamination of Alkenes  
K. Muñiz, A. Villar, C. H. Hövelmann,  
*Chem. Commun.* **2005**, 3304.
- 41 Enantiopure Boronic Esters from direct Asymmetric Dihydroxylation of Olefins  
K. Muñiz, C. H. Hövelmann,  
*Chem. Eur. J.* **2005**, *11*, 3951.
- 40 On the Stereochemical Course of Self-Replication in Secondary Cycle Sharpless Aminohydroxylation



- K. Muñiz,  
*Adv. Synth. Catal.* **2005**, 367 275.
- 39 Efficient Procedures for Sulfamide Synthesis  
K. Muñiz, M. Nieger,  
*Synlett* **2005**, 149.
- 38 Carbene-Palladium Catalysts for aerobic intramolecular Wacker-type cyclisation reactions  
K. Muñiz,  
*Adv. Synth. Catal.* **2004**, 364, 1425.
- 37 Electronic Effects in Imidoosmium-mediated Olefin Oxidation  
K. Muñiz,  
*Eur. J. Org. Chem.* **2004**, 2243.
- 36 Road Maps for Nitrogen Transfer Catalysis. The Challenge of the Osmium(VIII)-Catalyzed Diamination  
D. V. Deubel, K. Muñiz,  
*Chem. Eur. J.* **2004**, 10, 2475.
- 35a Stereochemically defined osmium centres from asymmetric diamination of olefins: mechanistic insight into osmium-mediated olefin functionalisation  
K. Muñiz, M. Nieger, H. Mansikkamäki,  
*Angew. Chem. Int. Ed.* **2003**, 425, 5958.
- 35b Stereochemisch definierte Osmium-Zentren durch asymmetrische Diaminierung von Olefinen: Konsequenzen für den Mechanismus Osmiumvermittelter Acrylester-Oxidationen  
K. Muñiz, M. Nieger, H. Mansikkamäki,  
*Angew. Chem.* **2003**, 115, 6140.
- 34 Imido-Osmium(VIII) Compounds in Organic Synthesis: Aminohydroxylation and Diamination Reactions  
K. Muñiz,  
*Chem. Soc. Rev.* **2004**, 33, 166.
- 33 Ferrocenoyl-substituted Cinchona Alkaloids: Synthesis, Structure and Application in Asymmetric Oxidative Catalysis  
K. Muñiz, M. Nieger,  
*Organometallics* **2003**, 11, 4616.
- 32 The Mechanism of Asymmetric Hydrogenation of Ketones Catalyzed by trans-RuH<sub>2</sub>(binap)(1,2-diamine)  
T. Ohkuma, C. Sandoval, K. Muñiz, R. Noyori,  
*J. Am. Chem. Soc.* **2003**, 125, 13490.
- 31 Diamination of Olefins: Synthesis, Structure and Reactivity of Osmaimidazolidines  
K. Muñiz, A. Iesato, M. Nieger,  
*Chem. Eur. J.* **2003**, 9, 5581.
- 30 Dialkylzinc Additions with a chiral Osmaimidazolidine Ligand derived from Asymmetric Diamination of olefins  
K. Muñiz,  
*Tetrahedron Lett.* **2003**, 44, 3547.
- 29 Manganese-Catalyzed Epoxidations

- K. Muñiz, C. Bolm,  
in *Transition Metals For Organic Chemistry: Building Blocks and Fine Chemicals* (Eds.: M. Beller, C. Bolm), 2nd Ed., Wiley/VCH **2004**, Vol. 2, 344.
- 28 Asymmetric Aminohydroxylation: Recent Developments  
K. Muñiz,  
in *Transition Metals For Organic Chemistry: Building Blocks and Fine Chemicals* (Eds.: M. Beller, C. Bolm), 2nd Ed., Wiley/VCH **2004**, Vol. 2, 326.
- 27 Asymmetric Dihydroxylation: Recent Developments  
K. Muñiz,  
in *Transition Metals For Organic Chemistry: Building Blocks and Fine Chemicals* (Eds.: M. Beller, C. Bolm), 2nd Ed., Wiley/VCH **2004**, Vol. 2, 298.
- 26 A Simple Approach towards Enantiomerically Pure Fischer Carbene Complexes of Chromium and Molybdenum: Chiral Modification of the Metal Fragment  
J. Barluenga, K. Muñiz, M. Tomás, A. Ballesteros, S. García-Granda,  
*Organometallics* **2003**, 22, 1756.
- 25 Planar Chiral Arene Chromium(0) Complexes as Ligands for Asymmetric Catalysis  
K. Muñiz  
in *Topics in Organometallic Chemistry, New Aspects of Transition Metal Arene Complexes* (Ed.: E. P. Kündig), Springer, Heidelberg, **2004**, 205.
- 24 A First Asymmetric Diamination of Olefins  
K. Muñiz, M. Nieger,  
*Synlett* **2003**, 211.
- 23 Improving Enantioselective Fluorination Reactions: Chiral *N*-Fluoro Ammonium Salts and Transition Metal Catalysts  
K. Muñiz  
in *Organic Synthesis Highlights V* (Eds.: H. G. Schmalz, T. Wirth), Wiley/VCH, Weinheim, **2003**, 399.
- 22 *trans*-RuH( $\eta^1$ -BH<sub>4</sub>)(binap)(1,2-diamine): A Catalyst for Asymmetric Hydrogenation of Simple Ketones under Base-Free Conditions  
T. Ohkuma, M. Koizumi, K. Muñiz, G. Hilt, C. Kabuto, R. Noyori,  
*J. Am. Chem. Soc.* **2002**, 124, 6508.
- 21 Cyclopropanation of Alkenes Mediated by Novel Chiral Fischer Carbene Complexes  
J. Barluenga, M. Tomás, A. Ballesteros, K. Muñiz, S. Martínez,  
*Archivoc* **2002**, 110.
- 20 Polymer-supported ferrocenyl oxazolines for the catalyzed highly enantioselective phenyl transfer onto aldehydes  
C. Bolm, N. Hermanns, A. Claßen, K. Muñiz,  
*Bioorg. Med. Chem. Lett.* **2002**, 41, 263.
- 19 Chemie Nobelpreis 2001  
K. Muñiz,  
*Naturwiss. Rundschau.* **2001**, 54, 651.
- 18 Catalytic Asymmetric Arylation  
C. Bolm, J. P. Hildebrand, K. Muñiz, N. Hermanns,  
*Angew. Chem.* **2001**, 113, 3382.

- 17a Improving Enantioselective Fluorination Reactions: Chiral *N*-Fluoro Ammonium Salts and Transition Metal Catalysts  
K. Muñiz,  
*Angew. Chem. Int. Ed.* **2001**, *113*, 1653.
- 17b Fortschritte bei enantioselektiven Fluorierungsreaktionen: von chiralen *N*-Fluorammonium-Salzen und Übergangsmetallkatalysatoren  
K. Muñiz,  
*Angew. Chem.* **2001**, *113*, 1701.
- 16 Asymmetric, Catalytic Phenyl Transfer to Aldehydes: Enantioselective Synthesis of Diarylmethanols  
C. Bolm, N. Hermanns, J. P. Hildebrand, K. Muñiz,  
*Angew. Chem.* **2000**, *112*, 3607.
- 15 Diastereoselective Synthesis of Planar and Central Chiral Enantiopure Ferrocenyl Sulfoximines  
C. Bolm, M. Kesselgruber, K. Muñiz, G. Raabe,  
*Organometallics* **2000**, *19*, 1648.
- 14 Configurational Control in Diastereomeric Ligands and Metal Complexes for Asymmetric Catalysis  
K. Muñiz, C. Bolm,  
*Chem. Eur. J.* **2000**, *6*, 2309.
- 13 Planar-Chiral Ferrocenes in Asymmetric Catalysis: The Impact of Stereochemically Inhomogeneous Ligands  
C. Bolm, K. Muñiz, J. P. Hildebrand,  
*Org. Lett.* **1999**, *1*, 491.
- 12 Bis(pyridine)iodonium(I)tetrafluoroborate (Synlett Spotlight 10)  
K. Muñiz,  
*Synlett* **1999**, 1679.
- 11 Catalytic Enantioselective Aryl Transfer: Asymmetric Addition of Diphenylzinc to Aldehydes  
C. Bolm, K. Muñiz,  
*Chem. Commun.* **1999**, 1295.
- 10 The Search for Benchrotrenes and Ferrocenes Containing a Chiral Sulfoximido Group: Preparation and Structural Properties  
C. Bolm, K. Muñiz, N. Aguilar, M. Kesselgruber, G. Raabe,  
*Synthesis* **1999**, 1251.
- 9 Planar-chirale Liganden und Ligandensysteme: Stereoselektive Darstellung und Einsatz in der asymmetrischen Katalyse (Tesis Doctoral, Publicacin en forma de Libro)  
K. Muñiz  
Editorial Mainz-Verlag, Aachen **1999** (*Aachener Beiträge zur Chemie*, Band 7).
- 8 Asymmetric Dihydroxylation and Aminohydroxylation  
C. Bolm, J. P. Hildebrand, K. Muñiz,  
in *Catalytic Asymmetric Synthesis* (Hrsg.: I. Ojima), 2nd ed., Wiley-VCH, Weinheim **2000**, 399.
- 7 Planar Chiral Arene Chromium(0) Complexes: Potential Ligands For Asymmetric Catalysis  
C. Bolm, K. Muñiz,  
*Chem. Soc. Rev.* **1999**, *28*, 51.

- 6 New Chiral Tricarbonyl( $\eta^6$ -arene)chromium(0) Complexes: Synthesis and Preliminary Application in Asymmetric Catalysis  
C. Bolm, K. Muñiz, C. Ganter,  
*New. J. Chem.* **1998**, 1371.
- 5 Sulfide Oxidation  
C. Bolm, K. Muñiz-Fernández, J. P. Hildebrand,  
in *Comprehensive Asymmetric Catalysis* (Eds.: E. N. Jacobsen, A. Pfaltz, H. Yamamoto),  
Springer, New York **1999**, Vol. II, 697.
- 4 On the Role of Planar Chirality in Asymmetric Catalysis: A Study toward Appropriate Ferrocene Ligands for Diethylzinc Additions  
C. Bolm, K. Muñiz-Fernández, A. Seger, G. Raabe, K. Günther,  
*J. Org. Chem.* **1998**, 63, 7860.
- 3 Manganese-Catalyzed Epoxidations  
K. Muñiz-Fernández, C. Bolm,  
in *Transition Metals For Organic Chemistry: Building Blocks and Fine Chemicals* (Eds.: M. Beller, C. Bolm), Wiley/VCH, Weinheim **1998**, Vol. II, 271.
- 2 A New Ferrocene in the Asymmetric Addition of Diethylzinc to Aldehydes  
C. Bolm, K. Muñiz-Fernández, A. Seger, G. Raabe,  
*Synlett* **1997**, 1051.
- 1 A Dimethyldioxirane Mediated Route to Enantiomerically Pure Tricarbonylchromium(0) Complexes of *ortho*-Substituted Styrenes  
P. W. N. Christian, R. Gil, K. Muñiz-Fernández, S. E. Thomas, A. E. Wierzechlejski,  
*J. Chem. Soc., Chem. Commun.* **1994**, 1569.

## Patents

- 4 An iodine catalysed process for preparing heterocyclic nitrogen-containing compound  
K. Muñiz, C. Martínez,  
EP3310EP00
- 3 Novel iodine compounds, processes for their preparation and use thereof as amination agents  
K. Muñiz, Á. Iglesias, J. A. Souto, C. Roeben,  
EP11382166
- 2 Process for the preparation of 1,2-diamines by intermolecular transfer of two nitrogen groups onto alkenes and intermediates thereof  
K. Muñiz,  
EP10382248
- 1 Preparation of ruthenium diphosphine diamine hydride complexes and preparation of alcohols under base-free conditions and optical resolution of racemic carbonyl compounds using the prepared ruthenium hydride complexes

T. Ohkuma, M. Koizumi, K. Muñiz, R. Noyori,  
*Jpn. Kokai Tokkyo Koho* **2003**, JP2003-104993A.