

## Publications

### Publications, patents and book chapters

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#### *Independent publications*

- [1] "Rhodium catalyzed synthesis of difluoromethyl cyclopropanes", Katharina J. Hock, Lucas Mertens, Rene M. Koenigs, *Chem. Commun.*, **2016**, DOI: 10.1039/C6CC07745E;
- [2] "Fluorinated diazoalkanes – a versatile class of reagents for the synthesis of fluorinated compounds", Lucas Mertens, Rene M. Koenigs, *Org. Biomol. Chem.*, **2016**, DOI: 10.1039/C6OB01618A;
- [3] "Fluoroalkyl-substituted Diazomethanes and Their Application in a General Synthesis of Pyrazoles and Pyrazolines", Lucas Mertens, Katharina J. Hock, Rene M. Koenigs, *Chem. Eur. J.*, **2016**, *22*, 9542 - 9545;

#### *Patents with Grüenthal GmbH (published patents only)*

- [4] "Aryl substituted heterocyclyl sulfones", S. Schunk, M. Reich, F. Jakob, R. M. Koenigs, N. Damann, M. Haurand, M. Rogers, K. Sutton, R. Hamlyn, US 20150291573.
- [5] "Substituted azaspiro(4.5)-decane derivatives", A. Wegert, S. Kuehnert, R. M. Koenigs, B. Nolte, K. Linz, S. Harlfinger, B.-Y. Koegel, P. Ratcliffe, F. Theil, O. Groeger, B. Braun, WO 2016008582

#### *Previous publications*

- [6] "Photoredox Catalyzed  $\alpha$ -Functionalization of Amines - Visible Light Mediated Carbon-Carbon and Carbon-Hetero Bond Forming Reactions", R. M. Koenigs, I. Atodiresei, M. Rueping, in: B. König (Ed.), *Chemical Photocatalysis*, Walter de Gruyter, Berlin/Boston, **2013**.
- [7] "Photoredox Catalysis as an Efficient Tool for the Oxidation of Amines and Alcohols - Bioinspired Demethylations and Condensations" M. Rueping, C. Vila, A. Szadkowska, R. M. Koenigs, J. Fronert, *ACS Catalysis*, **2012**, *2*, 2810-2814.
- [8] "Dual Catalysis: Combination of Photocatalytic Aerobic Oxidation and Metal Catalyzed Alkynylation Reactions - C-C Bond Formation Using Visible Light" M. Rueping, R. M. Koenigs, K. Poschary, D. C. Fabry, D. Leonori, C. Vila, *Chem. Eur. J.*, **2012**, *19*, 5170 - 5174; (Highlighted in *Synfacts* **2012**, *8*, 687).
- [9] "Light-Mediated Heterogeneous Cross Dehydrogenative Coupling Reactions: Metal Oxides as Efficient, Recyclable, Photoredox Catalysts in C-C Bond- Forming Reactions" M. Rueping, J. Zoller, D. C. Fabry, K. Poschary, R. M. Koenigs, T. E. Weirich, J. Mayer, *Chem. Eur. J.*, **2012**, *18*, 3478 - 3481.
- [10] "Visible-light photoredox catalyzed oxidative Strecker reaction", M. Rueping, S. Zhu, R. M. Koenigs, *Chem. Commun.* **2011**, *47*, 12709 - 12711.

- [11] "Photoredox Catalyzed C-P Bond Forming Reactions - Visible Light Mediated Oxidative Phosphonylations of Amines", M. Rueping, S. Zhu, R. M. Koenigs, *Chem. Commun.* **2011**, 47, 8679 - 8671.
- [12] "Size-Selective, Stabilizer-Free, Hydrogenolytic Synthesis of Iridium Nanoparticles Supported on Carbon Nanotubes" M. Rueping, R. M. Koenigs, J. Zoller, R. Borrmann, T. Weirich, J. Mayer, *Chem. Mat.* **2011**, 23, 2008 - 2010.
- [13] "Dual Catalysis: Combining Photoredox and Lewis Base Catalysis for Direct Mannich Reactions" M. Rueping, C. Vila, R. M. Koenigs, K. Poschary, D. Fabry, *Chem. Commun.* **2011**, 47, 2360 - 2362.
- [14] "Brønsted Acid Differentiated Metal Catalysis by Kinetic Discrimination" M. Rueping, R. M. Koenigs, *Chem. Comm.* **2011**, 47, 304 - 306; (Highlighted in *Synfacts* **2011**, 403).
- [15] "Synthesis and Structural Aspects of *N*-Triflylphosphoramides and Their Calcium Salts – Highly Acidic and Effective Brønsted Acids" M. Rueping, B. J. Nachtsheim, R. M. Koenigs, W. leawsuwan, *Chem. Eur. J.* **2010**, 16, 13116 - 13126.
- [16] "First Highly Enantioselective Synthesis of Benzodiazepinones by Catalytic Hydrogenation" M. Rueping, E. Merino, R. M. Koenigs, *Adv. Synth. Catal.* **2010**, 352, 2629 - 2634.
- [17] "Unifying Metal and Brønsted Acid Catalysis – Concepts, Mechanisms, and Classifications" M. Rueping, R. M. Koenigs, I. Atodiresei, *Chem. Eur. J.* **2010**, 16, 9350 - 9365.
- [18] "Efficient Enantioselective Synthesis of Optically Active Diols by Asymmetric Hydrogenation with Modular Chiral Metal Catalysts" R. Kadyrov, R. M. Koenigs, C. Brinkmann, D. Voigtlaender, M. Rueping, *Angew. Chem. Int. Ed.* **2009**, 48, 7556 - 7559; *Angew. Chem.* **2009**, 121, 7693 - 7696.
- [19] "Highly Enantioselective Organocatalytic Carbonyl-Ene Reaction with Strongly Acidic, Chiral Brønsted Acids as Efficient Catalysts" M. Rueping, T. Theissmann, A. Kuenkel, R. M. Koenigs, *Angew. Chem. Int. Ed.* **2008**, 47, 6798 - 6801; *Angew. Chem.* **2008**, 120, 6903 - 6906.

### Scientific presentations

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- [1] "Fluoroalkyl substituted diazoalkanes – powerful reagents for applications in cycloaddition reactions" 6<sup>th</sup> EuCheMS Conference, Sevilla/Spain, 15. September 2016
- [2] "Fluoroalkyl substituted diazoalkanes – applications in batch and flow" University of British Columbia, Vancouver/Canada, 31. August 2016
- [3] "Fluoroalkyl substituted diazoalkanes – applications in batch and flow" Université de Montreal, Montreal/Canada, 30. August 2016
- [4] "Fluoroalkyl substituted diazoalkanes – applications in batch and flow" McGill University, Montreal/Canada, 29. August 2016
- [5] "Fluoroalkyl substituted diazoalkanes – applications in batch and flow" Emory University, Atlanta/GA/USA, 26. August 2016

- [6] "Fluoroalkyl substituted diazoalkanes – powerful reagents for applications in cycloaddition reactions" 252<sup>nd</sup> ACS National Meeting, Philadelphia/PA/USA, 22. August 2016
- [7] "Berufsinformationstag" RWTH Aachen University, Aachen/D. 15. July 2016
- [8] "A Matter of Selectivity – from Hydrogenations towards Medicinal Chemistry" RWTH Aachen University/D., 06. May 2015
- [9] "Catalytic C-H functionalization of *N*-heterocycles and development of novel Bradykinin B1 receptor antagonists" Universität Hamburg/D., 06. October 2014
- [10] "Catalytic C-H functionalization of *N*-heterocycles and development of novel Bradykinin B1 receptor antagonists" Universität Regensburg/D., 27. August 2014
- [11] "A catalytic journey – About giving and taking hydrogen" Vortrag im Rahmen des Berufungsverfahren der Carl-Zeiss Stiftungsprofessur, Jena/D., 31. March 2014
- [12] "Combining Photoredox and Metal Catalysis for the Efficient Synthesis of Propargylic Amines" Short Lecture *Orchem*, Weimar/D., 25. September 2012
- [13] "Visible Light Photoredox Catalysis" *GDCh Wissenschaftsforum*, Bremen/D., 07. September 2011
- [14] "Iridium @ CNT – From Synthesis towards Applications" *GDCh Wissenschaftsforum*, Bremen/D., 05. September 2011
- [15] "New Developments in Visible Light Photoredox Catalysis" 15<sup>th</sup> *Green Chemistry & Engineering Conference*, Washington D.C., USA, 23. June 2011
- [16] "Brønsted Acid Differentiated Metal Catalysis" Short Lecture *Orchem*, Weimar/D., 14. September 2010
- [17] "*N*-Triflylphosphoramides - From Synthesis and Applications in Organocatalysis towards Combined Metal-Brønsted Acid Catalysis" 240<sup>th</sup> *National Symposium*, Boston/MA/USA, 22. August 2010
- [18] "*N*-Triflylphosphoramides - From Synthesis and Applications in Organocatalysis towards Combined Metal-Brønsted Acid Catalysis" *JCF Frühjahrssymposium*, Göttingen/D., 18. March 2010
- [19] "Enantioselective Hydrogenation Reactions: Novel and Efficient Approaches to obtain highly enantioselective Catalysts" 2. *Neujahrssymposium*, Aachen/D., 22. January 2010
- [20] "Development of a Highly Enantioselective Hydrogenation of  $\alpha$ -Hydroxy Ketones" *JCF Frühjahrssymposium*, Essen/D., 13. March 2009
- [21] "Organic Chemistry - an Experimental Lecture" *Night of Science*, Frankfurt/M./D., 06. June 2008
- [22] "Synthesis of Chiral Ion Pairs and their Application in Asymmetric Synthesis" *Diplomarbeit – Einstieg in die Forschung*, Frankfurt/M./D. 29. January 2008