• PERSONAL INFORMATION

Family name, First name: Wolf, Robert
Researcher ID: B-4439-2012; orcid.org/0000-0003-4066-6483
Publications: 53, Citations: 735; Citations per article: 15.0; H Index 16
Nationality: German
Date of birth: 18.09.1977
URL for web site: http://www.uni-regensburg.de/chemie-pharmazie/anorganische-chemie-wolf/

• EDUCATION

2005	PhD, Department of Chemistry, University of Leipzig, Germany (*summa cum laude*)
2002	MPhil, Department of Chemistry, University of Cambridge, UK

• CURRENT POSITION

2011 –	Associate Professor of Inorganic Chemistry Faculty of Chemistry and Pharmacy / University or Regensburg / Germany

• PREVIOUS POSITIONS

2008 – 2011	Research group leader (assistant professor/ Habilitand) Department of Chemistry, University of Münster, Germany
1992 – 1993	Postdoc (DFG fellowship) with Prof. Dr. K. Lammertsma Division of Organic Chemistry / Vrije Universiteit Amsterdam / The Netherlands
1991 – 1991	Postdoc (Feodor Lynen fellowship, AvH) with Prof. Dr. P. P. Power Department of Chemistry / University of California / Davis / U.S.A.

• FELLOWSHIPS AND AWARDS

2010 – 2011	Emmy Noether Research Group Leader (Deutsche Forschungsgemeinschaft)
2009 – 2014	Member of the Young Academy at the Berlin-Brandenburg Academy of Sciences and the German Academy of Natural Sciences Leopoldina
2008 – 2010	Liebig fellowship (Fonds der Chemischen Industrie, Germany)
2007 – 2008	Postdoctoral Research fellowship (Deutsche Forschungsgemeinschaft)
2006 – 2007	Feodor-Lynen-Fellow (Alexander von Humboldt-Foundation)

• SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

2008 – 2014	2 Postdocs / 6 PhD students / 4 Master/diploma students at the University of Münster, Germany (until 2011) and at the Faculty of Chemistry and Pharmacy, University of Regensburg, Germany

• TEACHING ACTIVITIES

Since 2008	Teaching chemistry at all levels from first year inorganic chemistry classes to specialized graduate seminars.
Since 2012	Co-ordinator of the new module “synthesis techniques”

• INSTITUTIONAL RESPONSIBILITIES

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• MEMBERSHIPS OF SCIENTIFIC SOCIETIES

German Chemical Society (GDCh)

• MAJOR COLLABORATIONS

Prof. Axel Jacobi von Wangelin, Institute of Organic Chemistry, University of Regensburg, Germany
Prof. Bas de Bruin, Universiteit von Amsterdam, The Netherlands
Prof. František Hartl, University of Reading, UK
Prof. Jan J. Weigand, Technical University of Dresden, Germany

• RESEARCH PROFILE

1. *Homogeneous catalysis – hydrogenations, cross couplings and cyclizations* catalysed by low-valent metal complexes are investigated. Spectroscopic investigations, model reactions and monitoring studies give insight into the mechanisms of these reactions and aid future catalyst development. By combining fundamental synthetic investigations with catalyst development, we aim at the fruitful interplay of both fields.

2. Visible light photocatalysis. Metalloenzymes such as cytochrome P450 and non-heme iron complexes perform oxidations of alkenes and aliphatic hydrocarbons selectively under mild conditions by metalloenzymes. In the laboratory, the development of efficient and selective catalytic reactions is an important challenge. Using a biomimetic approach, we combine iron catalysis with flavin photocatalysis to perform cheap, green, and sustainable photocatalytic C–H oxidations and alkene epoxidations using visible light. Atmospheric oxygen serves as the terminal oxidant. These investigations are performed within the framework of the DFG research training group "Chemical Photocatalysis".

3. Fundamental Organometallic Chemistry. We study fundamental aspects of the synthesis, structure, spectroscopic properties, and reactivity of new low-oxidation state organometallic complexes. Our focus is on the iron group metals Fe, Co and Ni. New reactive metal complexes are synthesized and applied in catalysis and small molecule activation. A variety of structural and spectroscopic techniques is applied to characterize these complexes, including quantum chemical (DFT) calculations.

4. Phosphorus chemistry. Another major area of our research is the transformation of the P_4 molecule using low-valent transition metalate anions and transition metal radicals. White phosphorus (P_4) is the industrially produced form of element 15, and its conversion into useful phosphaorganic molecules is a great great scientific challenge. In addition to P_4 activation, we have a program which investigates the synthesis of new phosphaorganometallic compounds. New diphosphacyclobutadiene and phosphabenzene complexes are prepared and used as simple and readily accessible tools for catalysis and supramolecular chemistry.

1. Five representative publications

1. *Photocatalytic benzylic C–H bond oxidation with a flavin scandium complex* B. Mühldorf, R. Wolf, *Chem. Commun.* **2015**, *51*, 8425–8428.
   The enhanced oxidation potential of riboflavin tetraacetate coordinating to scandium triflate enables the challenging photocatalytic oxidation of electron-deficient alkylbenzenes and benzyl alcohols to the corresponding aldehydes.

2. *Heteroatom-Free Cobalt and Iron Catalysts for Hydrogenations* (Times Cited 7) D. Gärtner, A. Welther, B. Rezaei Rad, R. Wolf, A. Jacobi von Wangelin, *Angew. Chem. Int. Ed.* **2014**, *53*, 3722–3726.
   This study demonstrates the catalytic utility of an anionic polyarene complex in hydrogenations and polar substrates (ketones and imines) for the first time.

3. *Preparation of an Organometallic Molecular Square by Self-Assembly of Phosphorus-Containing Building Blocks* (Times Cited 1) J. Malberg, M. Bodensteiner, D. Paul, T. Wiegand, H. Eckert, R. Wolf, *Angew. Chem. Int. Ed.* **2014**, *53*, 3722-3726.
   The paper illustrates a new strategy for the preparation of organometallic molecular squares, which capitalizes on the coordination ability of phosphorus-containing building blocks.

4. *Selective P_4 activation by an organometallic nickel(I) radical: Formation of a dinuclear nickel(II)*

tetraphosphide and related di- and trichalcogenides (Times Cited 2) S. Pelties, D. Herrmann, B. de Bruin, F. Hartl, R. Wolf, *Chem. Commun.* **2014**, 50, 7014–7016.
This paper exemplifies our research on new transition metal radicals. We report the synthesis of new mononuclear cyclopentadienylnickel(I) complexes and their application to the selective transformation of white phosphorus and sulfur, selenium and tellurium.

5. *Synthesis of Anionic Iron Polyphosphides by Reaction of White Phosphorus with „Cp*Fe⁻“* (Times Cited 13) E.-M. Schnöckelborg, J. J. Weigand, R. Wolf, *Angew. Chem. Int. Ed.* **2011**, *50*, 6657–6660.
Unprecedented anionic iron phosphides have been obtained at low temperature using the activation of white phosphorus with an anionic iron(0) complex.

2. Research monographs

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3. Granted patents

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4. Invited presentations to internationally established conferences / international advanced schools.

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5. International Prizes/ Awards/ Academy memberships.

2009 –2014 The Young Academy at the Berlin-Brandenburg Academy of Sciences and the German Academy of Natural Sciences Leopoldina