

**Name:** Ulrich Kortz, Ph.D.

**Position:** Professor of Chemistry

**Date of Birth:** 8 June 1963

**Nationality:** German

**Education:**

1983-1986 Study of Chemistry (B.Sc.), Giessen University, Germany

1986-1989 Study of Chemical Engineering (M.Sc.), Darmstadt University, Germany  
(thesis title: Encapsulation of Biologically Active Substances in  
Polyelectrolyte Microparticles)

1990-1995 Study of Chemistry (Ph.D.), Georgetown University, USA (thesis title:  
Diphosphate Complexes of Polyoxotungstates and Polyoxomolybdates)

**Research areas:**

Synthetic inorganic and organometallic chemistry, structural inorganic chemistry, discrete metal-oxides (polyoxometalates), hybrid organic-inorganic assemblies, study of catalytic, magnetic, electrochemical, medicinal, supramolecular properties.

**Career:**

1995-1996 Postdoc, Università di Firenze, Italy

1996-1997 Postdoc, Université de Versailles, France

1997-2001 Assistant Professor, American University of Beirut (AUB), Lebanon

2001-2002 Associate Professor, American University of Beirut, Lebanon

2002-2007 Associate Professor, International University Bremen (IUB)

2007- Professor, Jacobs University Bremen (formerly IUB)

**Honors/Awards:**

1995 *Harold N. Glassman* award (Georgetown University, USA)

1995-1996 EU postdoctoral fellowship, Università di Firenze, Italy

1996-1997 *Alfred Kastler* postdoctoral fellowship, Université de Versailles, France

2001 (summer) Visiting Associate Research Professor, Georgetown Univ.

2002 (January) Visiting Professor, Université Paris-Sud, France

2006- Editorial Board Member, *Journal of Cluster Science* (Springer)

2013- Guest Professor of Henan Province, China

2015, 2016 President's Internat. Visiting Scientist Fellowship, CAS, Beijing, China

## 5 most cited publications

Total publications: 248, citations 9394 (*h*-index: 54), 3 book chapters, 12 patents.

1. Polyoxometalates: Fascinating Structures, Unique Magnetic Properties  
Kortz, U.; Müller, A.; van Slageren, J.; Schnack, J.; Dalal, N. S.; Dressel, M. *Coord. Chem. Rev.* **2009**, *253*, 2315-2327 (**citations: 319**).
2. Heteropolymolybdates of As<sup>III</sup>, Sb<sup>III</sup>, Bi<sup>III</sup>, Se<sup>IV</sup> and Te<sup>IV</sup> Functionalized by Amino Acids  
Kortz, U.; Savelieff, M. G.; Abou Ghali, F. Y.; Khalil, L. M.; Maalouf, S. A.; Sinno, D. I. *Angew. Chem. Int. Ed.* **2002**, *41*, 4070-4073 (**citations: 239**).
3. The Wheel-Shaped Cu<sub>20</sub>-Tungstophosphate [Cu<sub>20</sub>Cl(OH)<sub>24</sub>(H<sub>2</sub>O)<sub>12</sub>(P<sub>8</sub>W<sub>48</sub>O<sub>184</sub>)]<sup>25-</sup> Ion  
Mal, S. S.; Kortz, U. *Angew. Chem. Int. Ed.* **2005**, *44*, 3777-3780 (**citations: 225**).
4. Synthesis and Characterization of Copper, Zinc, Manganese and Cobalt-Substituted, Dimeric Heteropolyanions, [( $\alpha$ -XW<sub>9</sub>O<sub>33</sub>)<sub>2</sub>M<sub>3</sub>(H<sub>2</sub>O)<sub>3</sub>]<sup>n-</sup> (n = 12, X = As<sup>III</sup>, Sb<sup>III</sup>, M = Cu<sup>2+</sup>, Zn<sup>2+</sup>; n = 10, X = Se<sup>IV</sup>, Te<sup>IV</sup>, M = Cu<sup>2+</sup>) and [( $\alpha$ -AsW<sub>9</sub>O<sub>33</sub>)<sub>2</sub>WO(H<sub>2</sub>O)M<sub>2</sub>(H<sub>2</sub>O)<sub>2</sub>]<sup>10-</sup> (M = Zn<sup>2+</sup>, Mn<sup>2+</sup>, Co<sup>2+</sup>).  
Kortz, U.; Al-Kassem, N. K.; Savelieff, M. G.; Al Kadi, N. A.; Sadakane, M. *Inorg. Chem.* **2001**, *40*, 4742-4749 (**citations: 210**).
5. Sandwich-type Germanotungstates: Structure and Magnetic Properties of the Dimeric Polyoxoanions [M<sub>4</sub>(H<sub>2</sub>O)<sub>2</sub>(GeW<sub>9</sub>O<sub>34</sub>)<sub>2</sub>]<sup>12-</sup> (M = Mn<sup>2+</sup>, Cu<sup>2+</sup>, Zn<sup>2+</sup>, Cd<sup>2+</sup>)  
Kortz, U.; Nellutla, S.; Stowe, A. C.; Dalal, N. S.; Rauwald, U.; Danquah, W.; Ravot, D. *Inorg. Chem.* **2004**, *43*, 2308-2317 (**citations: 163**).

## Third-party funded projects since 2004

- 2004 HBF 066-006, large instrument grant, single-crystal XRD.
- 2004-2007 DFG KO 2288/3-1 and KO 2288/3-2, "Molecular Magnetism", priority program SPP 1137.
- 2005-2007 DFG KO 2288/4-1, "Secondary Interactions as a Steering Principle for the Selective Functionalization of Non-Reactive Substrates", priority program SPP 1118.
- 2005-2007 Industry grant, "Polyoxoanions Anchored on Large Surface Area Metal Oxides: Fundamentally Novel Oxidation Catalysts".
- 2008-2010 DFG KO-2288/8-1, "Lanthanide Specific Functionalities in Molecules and Materials", priority program SPP 1166.
- 2008-2010 Industry grant, "Polyoxometalates as Medicinal Contrast Agents".
- 2008-2011 DFG KO-2288/9-1, "Synthesis and Structure of Ti-, Zr- and Hf-Containing Polyoxotungstates and Study of their Oxidation Catalysis Properties".
- 2010-2011 DFG KO-2288/14-1, "Synthesis of Ruthenium Containing Tungstoselenites- and -Tellurites and Investigation of their Catalytic Properties".
- 2010-2012 DFG IZ-60/1-1, "Noble Metal (Pd, Pt and Au) Based Polyoxometalates".
- 2012-2015 DFG KO-2288/20-1, "Highly Robust and Efficient Water Oxidation Catalysts based on Nanoscopic Metal Oxide Species (Polyoxometalates): from Fundamental Science to Devices".
- 2015-2017 Private industry grant, confidential.
- 2016-2019 DFG KO-2288/26-1, "PolyoxoNobleMetalate Chemistry Merged with Metal-Organic Frameworks: A Novel Class of Heterogeneous Catalysts".

## Scientific collaborators

**Austria:** Prof. Annette Rompel (Vienna University); **Belgium:** Prof. Tatjana Parac-Vogt (Leuven University); **China:** Prof. Guangjin Zhang (CAS, Beijing), Prof. Changwen Hu (BIT, Beijing); **Germany:** Prof. Thomas Heine (Leipzig University), Prof. Christa Müller (Bonn University), Dr. Holger Stephan, HZDR, Dresden-Rossendorf; **Italy:** Prof. Marcella Bonchio (University of Padova); **Japan:** Prof. Masahiro Sadakane (Hiroshima Univ.); **Pakistan:** Prof. Jamshed Iqbal (COMSATS Institute of Information Technology); **Russia:** Prof. Oxana Kholdeeva (Boreskov Institute of Catalysis, Novosibirsk); **Spain:** Prof. Josep M. Poblet (Tarragona Univ.), Prof. Eugenio Coronado (Valencia Univ.), Prof. José Ramón Galán-Mascarós (ICIQ, Tarragona); **UK:** Prof. Ulrich Stimming (Newcastle University); **USA:** Prof. Naresh Dalal (Florida State University), Prof. Tianbo Liu (The University of Akron)