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HARVARD UNIVERSITY | DEPARTMENT OF CHEMISTRY AND CHEMICAL BIOLOGY
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EDUCATION

Ph.D. Organic Chemistry, ETH Zurich, Switzerland	2004
M.B.A. Hagen University, Germany	2005
M.S. Technical University of Braunschweig, Germany	1999

APPOINTMENTS

Associate Professor of Chemistry and Chemical Biology, Harvard University	2010 – present
Associate Chemist, Department of Radiology, Massachusetts General Hospital	2010 – present
Assistant Professor of Chemistry, Harvard University:	2006 – 2010
CTO and Scientific Founder, SciFluor	2011 – present

RESEARCH INTERESTS

Synthetic organic and organometallic chemistry; development of new synthetic methods based on transition metal catalysis; stereoselective synthesis of biologically active natural and unnatural products

EXPERIENCE

HARVARD UNIVERSITY, Cambridge, MA, USA: Assistant Professor of Chemistry and Chemical Biology	2006 – 2010
Associate Professor of Chemistry and Chemical Biology	2010 – present
CALIFORNIA INSTITUTE OF TECHNOLOGY, Pasadena, CA, USA: Post-Doctoral Fellow. Development of New Olefin Metathesis Catalysts. Advisor: Prof. Robert H. Grubbs	2004 – 2006
SWISS FEDERAL INSTITUTE OF TECHNOLOGY, ETH-Zürich, Switzerland: Ph.D. Thesis: Toward the Synthesis of (+)-Resiniferatoxin via Photorearrangement of Cross-Conjugated Cyclohexadienones; Novel Cholesterol-Absorption Inhibitors Advisor: Prof. Erick M. Carreira	1999 – 2004
STANFORD UNIVERSITY, Stanford, CA, USA: Towards the Total Synthesis of Teretifolione B Advisor: Prof. Barry M. Trost	1998 – 1999
SWISS FEDERAL INSTITUTE OF TECHNOLOGY, Lausanne, Switzerland	1997 – 1998
UNIVERSITY OF BORDEAUX, Bordeaux, France	1997 – 1997
TECHNICAL UNIVERSITY OF BRAUNSCHWEIG, Braunschweig, Germany	1995 – 1997

AWARDS

- Camille Dreyfus Teacher Scholar Award 2011
- BASF Catalysis Award 2011
- Roslyn Abramson Award for Excellence in Teaching Undergraduates 2010
- AstraZeneca Excellence in Science Award 2010
- Amgen Young Investigator Award 2010
- Alfred P. Sloan Research Fellowship 2010
- NSF Career Award 2010 – 2015
- Air Force Young Investigator Award 2010 – 2013
- Eli Lilly Grantee Award 2010 – 2012
- Bayer Early Excellence in Science Award 2009
- Massachusetts Life Science Center Young Investigator Award 2009 – 2011
- Smith Family Award for Excellence in Biomedical Research 2008 – 2011
- Milton Fund Award, Harvard Medical School 2008
- Thieme Chemistry Journals Award 2007
- Postdoctoral Fellowship (DAAD) 2004 – 2006
- Kekulé-Scholarship of the Fond der Chemischen Industrie e.V. 2000 – 2002
- Winterfeld Award - Towards the Total Synthesis of Teretifolione B 2000
- Fellowship of the Konrad-Adenauer-Foundation 1998 – 1999
- Scholarship of the Swiss National Science Foundation 1997 – 1998
- Scholarship of the European Union 1997
- Scholarship of the Konrad-Adenauer-Foundation 1996 – 1999

PUBLICATIONS AS INDEPENDENT FACULTY

34. T. Furuya, A. S. Kamlet, T. Ritter “Catalysis for Fluorination and Trifluoromethylation” *Nature*, **2011**, 473, 470–477.
33. P. Tang, T. Ritter “Silver-mediated fluorination of aryl silanes” *Tetrahedron* **2011**, *in press*.
32. D. C. Powers, T. Ritter “Pd(III) in Synthesis and Catalysis” *Top. Organomet. Chem.* **2011**, 35, 129–156.
31. G. J. Chuang, W. Wang, E. Lee, T. Ritter “A Dinuclear Palladium Catalyst for α -Hydroxylation of Carbonyls with O₂” *J. Am. Chem. Soc.* **2011**, 133, 1760–1762.
30. D. C. Powers, D. Y. Xiao, M. A. L. Geibel, T. Ritter “On the Mechanism of Palladium-Catalyzed Aromatic C–H Oxidation” *J. Am. Chem. Soc.* **2010**, 132, 14530–14536.
29. D. C. Powers, D. Benitez, E. Tkatchouk, W. A. Goddard, III, T. Ritter “Bimetallic Reductive Elimination from Dinuclear Pd(III) Complexes” *J. Am. Chem. Soc.* **2010**, 132, 14092–14103.
28. J. Y. Wu, B. N. Stanzl, T. Ritter “A Strategy for the Synthesis of Well-Defined Iron Catalysts and Application to Regioselective Diene Hydrosilylation” *J. Am. Chem. Soc.* **2010**, 132, 13214–13216.
27. T. Ritter “Catalysis: Fluorination Made Easier” *Nature* **2010**, 466, 447–448.
26. P. Tang, T. Furuya, T. Ritter “Silver-Catalyzed Late-Stage Fluorination” *J. Am. Chem. Soc.* **2010**, 132, 12150–12154.

25. T. Furuya, E. M. N. Klein, T. Ritter "C–F Bond Formation for the Synthesis of Aryl Fluorides" *Synthesis* **2010**, 1804–1821.
24. T. Furuya, D. Benitez, E. Tkatchouk, A. E. Strom, P. Tang, W. A. Goddard, III, T. Ritter "Mechanism of C–F Reductive Elimination from Palladium(IV) Fluorides" *J. Am. Chem. Soc.* **2010**, *132*, 3793–3807.
23. D. C. Powers, M. A. L. Geibel, J. E. M. N. Klein, T. Ritter "Bimetallic Palladium Catalysis: Direct Observation of Pd(III)–Pd(III) Intermediates" *J. Am. Chem. Soc.* **2009**, *131*, 17050–17051.
22. J. Y. Wu, B. Moreau, T. Ritter "Iron-Catalyzed 1,4-Hydroboration of 1,3-Dienes" *J. Am. Chem. Soc.* **2009**, *131*, 12915–12917.
21. T. Furuya, T. Ritter "Fluorination of Boronic Acids Mediated by Silver Triflate" *Org. Lett.* **2009**, *11*, 2860–2863.
20. D. P. Powers, T. Ritter "Bimetallic Pd(III) Complexes in Palladium-Catalyzed Carbon–Heteroatom Bond Formation" *Nature Chem.* **2009**, *1*, 302–309.
19. T. Furuya, A. E. Strom, T. Ritter "Silver-Mediated Fluorination of Functionalized Arylstannanes" *J. Am. Chem. Soc.* **2009**, *131*, 1662–1663.
18. B. Moreau, J. Y. Wu, T. Ritter "Iron-Catalyzed 1,4-Addition of Olefins to Dienes" *Org. Lett.* **2009**, *11*, 337–339.
17. T. Furuya, C. Kuttruff, T. Ritter "Carbon–Fluorine Bond Formation" *Curr. Opin. Drug Disc. Dev.* **2008**, *11*, 308–319.
16. T. Furuya, T. Ritter "Carbon–Fluorine Reductive Elimination from a High-Valent Palladium Fluoride" *J. Am. Chem. Soc.* **2008**, *130*, 10060–10061.
15. T. Furuya, H. M. Kaiser, T. Ritter "Palladium-Mediated Fluorination of Arylboronic Acids" *Angew. Chem., Int. Ed.* **2008**, *47*, 5993–5996.

PREVIOUS PUBLICATIONS

14. A. P. Blum, T. Ritter, R. H. Grubbs. "Synthesis of N-heterocyclic Carbene-Containing Metal Complexes from 2-(pentafluorophenyl)-imidazolidines" *Organometallics*, **2007**, *26*, 2122–2124.
13. J. M. Berlin, K. Campbell, T. Ritter, T. W. Funk, A. Chlenov, R. H. Grubbs: "Ruthenium-Catalyzed Ring-Closing Metathesis to Form Tetrasubstituted Olefins" *Org. Lett.* **2007**, *9*, 1339–1342.
12. T. Ritter, A. Hejl, A. G. Wenzel, T. W. Funk, R. H. Grubbs. "A Standard System of Characterization for Olefin Metathesis Catalysts" *Organometallics* **2006**, *25*, 5740–5745.
11. T. Ritter, M. W. Day, R. H. Grubbs. "Rate Acceleration in Olefin Metathesis through a Fluorine–Ruthenium Interaction" *J. Am. Chem. Soc.* **2006**, *128*, 11768–11769.
10. E. Ayoub, T. Ritter: "N-heterocyclic carbenes as ligands for olefin metathesis catalysts" *Top. Organomet. Chem.* **2006**, *21*, 193–218.
9. A. W. Waltman, T. Ritter, R. H. Grubbs. "Rearrangement of N-Heterocyclic Carbenes Involving Heterocycle Cleavage" *Organometallics* **2006**, *25*, 4238–4239.
8. T. Ritter, L. Kværnø, M. Werder, H. Hauser, E. M. Carreira. "Heterocyclic Ring Scaffolds as Small-Molecule Cholesterol Absorption Inhibitors" *Org. Biomol. Chem.* **2005**, *3*, 3514–3523.
7. T. Ritter, E. M. Carreira. "1,2,4-Oxadiazolidinones as Configurationally Stable Chiral Building Blocks" *Angew. Chem., Int. Ed.* **2005**, *44*, 936–938.

6. T. Ritter, E. M. Carreira. "Base-Induced or Catalyzed Addition of Terminal Alkynes to Electrophiles" in: Handbook of C-H Transformations: Applications in Organic Synthesis, G. Dyker (Ed), Wiley-VCH, 2005.
5. L. Kværnø, T. Ritter, M. Werder, H. Hauser, E. M. Carreira. "Brush Border Membrane Vesicles as the First In Vitro Assay for Intestinal Cholesterol Absorption Inhibitors" *Angew. Chem., Int. Ed.* **2004**, *43*, 4653–4656.
4. T. Ritter, P. Zarotti, E. M. Carreira. "Diastereoselective Phenol para-Alkylation: Access to a Cross-Conjugated Cyclohexadienone en Route to Resiniferatoxin" *Org. Lett.* **2004**, *6*, 4371–4374.
3. T. Ritter, K. Stanek, I. Larrosa, E. M. Carreira. "Mild Cleavage of Aryl Mesylates: Methanesulfonate as Potent Protecting Group for Phenols" *Org. Lett.* **2004**, *6*, 1513–1514.
2. T. Ritter, E. M. Carreira. "The Diazonamides: The Plot Thickens" *Angew. Chem., Int. Ed.* **2002**, *41*, 2489–2495.
1. B. König, M. Pelka, H. Zieg, T. Ritter, H. Bouas-Laurent, R. Bonneau, J. P. Desvergne. "Photoinduced Electron Transfer in a Phenothiazine-Riboflavin Dyad Assembled by Zinc-Imide Coordination in Water" *J. Am. Chem. Soc.* **1999**, *121*, 1681–1687.

AWARD LECTURES

- Novartis Lecture, Boston University February 2010
- Eli Lilly Young Investigator Lecture, University of Wisconsin–Madison May 2010
- Mordecai and Rivka Rubin Lecture, Technion–Israel Institute of Technology June 2010
- Organic Synthesis Lecturer, University of California, Berkeley April 2011

OTHER INVITED LECTURES

- Gordon Research Conference–Heterocycles, 2008
- Dana Farber/Harvard Cancer Center, 2008
- University of Puerto Rico, 2009
- University of Massachusetts–Dartmouth, 2009
- Sepracor, 2009
- Bristol-Myers Squibb, 2009
- NSF workshop on Organic Synthesis and Natural Products Chemistry, 2009
- Rising Organic Chemists in Catalysis (ROCCAT), 2009
- Amgen, Cambridge, 2009
- Eli Lilly and Company, 2009
- Abbott Labs, 2009
- University of Pennsylvania, 2009
- Princeton University, 2009
- ETH Lausanne, 2009
- University of California–Irvine, 2010
- University of California–Los Angeles, 2010
- Dartmouth University, 2010
- Bristol Myers Squibb, Wallingford, 2010

- Bayer AG, Berlin, Germany, 2010
- Bayer AG, Wuppertal, Germany, 2010
- RWTH Aachen, Germany 2010
- ACS National Meeting, San Francisco, 2010
- University of California–San Diego, 2010
- The Scripps Research Institute, 2010
- Amgen, San Francisco, 2010
- Merck, West Point, 2010
- Merck, Rahway, 2010
- Northeastern Regional Meeting, American Chemical Society, 2010
- Weizmann Institute, Israel, 2010
- Tel Aviv University, 2010
- Pfizer, Groton, 2010
- ICIQ Summer School, Tarragona, 2010
- Gordon Research Conference, Stereochemistry, 2010
- American Chemical Society, National Meeting, Boston 2010
- Bayer CropScience 2010
- ORGCHEM–Weimar 2010
- AstraZeneca, Waltham 2010
- University of California–Santa Barbara 2010
- Amgen, Thousand Oaks 2010
- Pacificchem 2010
- Winter Fluorine Conference, St. Pete Beach 2011
- Dow Chemicals, Midland 2011
- Merck, Boston 2011
- Ludwig-Maximilians-Universität, Munich, Germany 2011
- Sanofi-Aventis, Frankfurt, Germany 2011
- Max Planck Institut für Kohlenforschung, Mulheim, Germany 2011
- University of Munster, Germany 2011
- Hoffman-La Roche, Nutley 2011
- University of North Carolina, Chapel Hill 2011
- University of Illinois at Urbana-Champaign 2011
- ACS National Meeting, Anaheim 2011
- Genentech, South San Francisco 2011
- RSC Organic Symposium, Queen Mary University of London, United Kingdom 2011
- Oxford University, Oxford, United Kingdom 2011
- University of Bristol, Bristol, United Kingdom 2011
- University of Minnesota 2011
- California Institute of Technology 2011
- Annual Graduate Student Symposium, University of Buffalo 2011
- High Throughput Chemistry & Chemical Biology Gordon Research Conference 2011
- Heterocycles Gordon Research Conference 2011
- Organic Reactions and Processes Gordon Research Conference 2011
- Natural Products Gordon Research Conference 2011

- Medicinal Chemistry Gordon Research Conference 2011
- Yale, 2011
- Boston College 2011

AWARDED RESEARCH SUPPORT

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|---|-----------|
| • Camille Dreyfus Teacher Scholar Award | 2011–2016 |
| • NIH (RO1) | 2011–2015 |
| • Roslyn Abramson Award for Excellence in Teaching Undergraduates | 2010 |
| • AstraZeneca Excellence in Science Award | 2010 |
| • Amgen Young Investigator Award | 2010 |
| • Alfred P. Sloan Fellowship | 2010 |
| • NSF Career Award | 2010–2015 |
| • Air Force Young Investigator Award | 2010–2013 |
| • Eli Lilly Grantee Award | 2010–2012 |
| • NIH (RO1) | 2009–2014 |
| • ACS PRF | 2009–2011 |
| • Massachusetts Life Science Center | 2009–2011 |
| • Smith Family Award for Excellence in Biomedical Research | 2008–2011 |
| • Harvard Accelerator Grant | 2008–2010 |
| • Harvard University Center for the Environment | 2008–2009 |
| • Milton Research Award, Harvard Medical School | 2008–2008 |
| • Pfizer fellowship for undergraduate research | 2007–2007 |

TEACHING EXPERIENCE

CHEMISTRY 30 – ORGANIC CHEMISTRY 2006–2010

Fundamental principles and advanced topics in organic chemistry. Carbonyl chemistry and pericyclic reactions are covered in detail. Students learn about strategies in multi-step organic synthesis and are given an introduction into organometallic chemistry. Laboratory: an introduction to organic chemistry laboratory techniques and experimental organic synthesis. Committee for Undergraduate Education instructor ratings by students (out of 5.0): 4.5 (06–07), 4.8 (07–08), 4.5 (08–09), 4.9 (09–10).

CHEMISTRY 153 – ORGANOMETALLIC CHEMISTRY 2010–2011

Fundamental principles and advanced topics in organometallic chemistry. Transition metal catalysis and principles thereof are covered in detail, with focus on the organometallic reactivity. Committee for Undergraduate Education instructor ratings by students (out of 5.0): 4.6 (10–11).