C. Bolm

*The author presented on this page has published more than **25 articles** since 2000 in Angewandte Chemie, most recently:*
"Acylsilanes in Rhodium-(III)-Catalyzed Directed Aromatic C–H Alkenylations and Siloxycarbene Reactions with C–C Double Bonds": P. Becker, D. L. Priebbenow, R. Pirwerdjan, C. Bolm, *Angew. Chem.* **2014**, *126*, 273 – 275; *Angew. Chem. Int. Ed.* **2014**, *53*, 269 – 271.

Carsten Bolm

Date of birth:	March 8, 1960
Position:	Professor of Organic Chemistry, RWTH Aachen University
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Education:	1978–1984 Chemistry degree, University of Braunschweig, and University of Wisconsin–Madison (1983–1984) 1985–1987 Dr. rer. nat. with Manfred T. Reetz, University of Marburg 1987–1988 Postdoctoral studies with K. Barry Sharpless, Massachusetts Institute of Technology
Awards:	**1991** Heinz Maier Leibnitz Prize; **1992** ADUC Prize; **1993** Award for Chemistry from the Göttingen Academy of Sciences and Humanities; **1996** Otto Klung Award; **1998** Otto Bayer Award; **2003** Stipend from the Japan Society for the Promotion of Science; **2006** Prix Franco-Allemand of the Société Française de Chimie (currently Société Chimique de France)
Current research interests:	We focus on the design, development, synthesis, and use of new catalysts for selective conversions in organic chemistry. Asymmetric catalysis—with and without metals—is a major research area. Further "playgrounds" are special topics in sulfur chemistry (with relevance to synthesis, catalysis, and applications in medicinal chemistry and crop protection), ball milling, direct fluorinations, and targeted biomass conversions relating to fuel production and the preparation of basic chemicals.
Hobbies:	Henny and Lewon (my children)

My worst nightmare is … to have to suffer from more administrative nonsense.

My biggest motivation is … not the h-index, for sure.

The most exciting thing about my research is … to discover new things that could only previously be postulated.

I lose track of time when … working on an exciting manuscript.

The best advice I have ever been given is … "Talk to the group" (by K. B. Sharpless).

The worst advice I have ever been given was … to be patient.

I can never resist … discovering the unexpected.

I celebrate success by … the search for a new triumph.

When I'm frustrated … the laughter of our kids is helpful.

My favorite authors (fiction) are … Axel Scheffler and Julia Donaldson.

My top three films of all time are … the ones we produced ourselves in Super 8 format.

My favorite food is … Kaiserschmarrn.

I like refereeing because … I can read about new discoveries that only a few people in the world know about.

The most significant scientific advance of the last 100 years has been … the internet.

The biggest problem that scientists face is … respecting the success of competitors.

What I look for first in a publication is … the novelty in the broader context.

My favorite piece of research is … reporting our latest discoveries.

My favorite place on earth is … always where I feel comfortable—and that varies often.

I chose chemistry as a career because … I enjoy the unique combination of brain and manual work.

If I were not a scientist, I would be … a landscape designer.

Angewandte International Edition Chemie

How is chemistry research different now than at the beginning of your career?

As success in chemical research is predominantly based on attributes such as a thirst for knowledge, creativity, and self-motivation, the fundamentals have not changed much over the years. With respect to myself, I see many more opportunities today. Whereas in the initial phase of my university career, I had to focus on a particular research topic to gain visibility, I take the liberty to scientifically broaden myself today. I perform research in a variety of areas that I consider interesting, challenging, and most promising. In this process, I also feel grateful to the German academic system that allows my to focus on entirely new research topics in a continuous manner without having an exaggerated pressure to publish.

What is the secret to publishing so many high-quality papers?

I have always had the fortune to collaborate in a most fruitful environment with a number of dedicated co-workers, who could easily be stimulated to perform research in a highly self-motivated manner. The chemical advances that led to those high-quality papers fall on their shoulders. Sure, in most cases individuals pushed ahead the very diverse research topics in the group with a great drive. But noticeably, that was only possible in a stimulating network of all group members—academic and nonscientific personnel. (Great thanks to all of you!) To be able to pursue whichever new ideas with the support of young scientists is heart-refreshing and a great privilege of an academic teacher.

My 5 top papers:

1. "Optically Active Lactones from a Baeyer–Villiger-Type Metal-Catalyzed Oxidation with Molecular Oxygen": C. Bolm, G. Schlingloff, K. Weickhardt, *Angew. Chem.* **1994**, *106*, 1944–1946; *Angew. Chem. Int. Ed. Engl.* **1994**, *33*, 1848–1849.
   This is the very first report of an asymmetric Baeyer–Villiger reaction catalyzed by a chiral metal complex in an enantioselective manner. The work set the scene for various subsequent studies—by us and others—in this field, where previously only biocatalysts had successfully been applied. Perhaps we later gave up too early in this most difficult area—but other research areas proved interesting as well.
2. "Asymmetric Sulfide Oxidation with Vanadium Catalysts and H_2O_2": C. Bolm, F. Bienewald, *Angew. Chem.* **1995**, *107*, 2883–2885; *Angew. Chem. Int. Ed. Engl.* **1996**, *34*, 2640–2642.
   With this publication, we initiated research that later even gained industrial relevance. In subsequent work, this firstly reported catalyst system was applied and advanced worldwide. In the following years, we showed—again in *Angewandte Chemie*—that also an iron-based catalyst could be used for performing analogous asymmetric sulfide oxidations with hydrogen peroxide as oxidant.
3. "Rhodium-Catalyzed Imination of Sulfoxides and Sulfides: Efficient Preparation of N-Unsubstituted Sulfoximines and Sulfilimines": H. Okamura, C. Bolm, *Org. Lett.* **2004**, *6*, 1305–1308.
   This Communication, which at first glance appeared rather unspectacular, proved to be a "blockbuster" in sulfoximine chemistry because we introduced a new metal-catalyzed sulfur imination system that proceeded at ambient temperature. The great potential of this process was immediately recognized by industrial chemists, and today the paper is highly cited in patents related to new molecules with relevance to potential drugs and crop-protection agents.
4. "Base-Catalyzed Synthesis of Substituted Indazoles under Mild, Transition-Metal-Free Conditions": I. Thomé, C. Besson, T. Kleine, C. Bolm, *Angew. Chem.* **2013**, *125*, 7657–7661; *Angew. Chem. Int. Ed.* **2013**, *52*, 7509–7513.
   Stimulated by various observations, we became engaged in transition-metal-free reactions, which led to cross-coupling-type products, very early on. In this article, we demonstrated that synthetically relevant heterocycles can be prepared—without transition metals—under very mild reaction conditions. Spectroscopic and mechanistic studies revealed the complexity of the system.
5. "Enantioselective Nitrene Transfer to Sulfides Catalyzed by a Chiral Iron Complex": J. Wang, M. Frings, C. Bolm, *Angew. Chem.* **2013**, *125*, 8823–8827; *Angew. Chem. Int. Ed.* **2013**, *52*, 8661–8665.
   Herein, we solved a synthetic problem that relates to three research topics in the group: 1) asymmetric metal catalysis, 2) sulfur iminations, and 3) iron catalysis. The newly developed protocol allows preparing optically active sulfimides, which can then be linked to sulfoximines that are of interest for us (and others). A first breakthrough was finally achieved after many years of effort.

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