H. Braunschweig (Copyright: Leopoldina/M. Scholz)

The author presented on this page has published more than ***50 articles*** *since 2000 in Angewandte Chemie, most recently* "Phosphine Adducts of 1,2-Dibromo-1,2-dimesityldiborane(4): Between Bridging Halides and Rearrangement Processes": H. Braunschweig, A. Damme, J. O. C. Jimenez-Halla, T. Kupfer, K. Radacki, *Angew. Chem.* **2012**, *124*, 6372–6376; *Angew. Chem. Int. Ed.* **2012**, *51*, 6267–6271.

Holger Braunschweig

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Education:	1988 Undergraduate degree, RWTH Aachen 1990 PhD with Prof. P. Paetzold, RWTH Aachen 1991–1992 Postdoc with Prof. M. F. Lappert FRS, University of Sussex (UK)
Awards:	**2009** Gottfried Wilhelm Leibniz Prize; elected to the Bavarian Academy of Science; Arduengo Lectureship; **2011** elected to the Leopoldina (German National Academy of Sciences); **2012** Steinhofer Lectureship
Current research interests:	Coordination chemistry of boron-containing ligands; transition-metal complexes of boron; boron heterocycles; strained metalloarenophanes; electron-precise oligoboranes; homogeneous catalyst systems; metal-mediated boron–carbon and boron–boron bond creation by homo- and heterogeneous catalysis
Hobbies:	Reading, table tennis

I like refereeing because … I hope that our publications will also be refereed with the same amount of interest. Without this mutual willingness, scientific publication would be impossible.

The most significant scientific advance of the last 100 years has been … quantum theory and the theory of relativity in terms of furthering knowledge, and computers and the internet in terms of changing our lives.

The biggest problem that scientists face is … the often poor societal and political acceptance of fundamental research. In my experience, this is particularly prevalent in the field of chemistry.

What I look for first in a publication are … reaction equations and structural evidence—the synthesis of truly "novel" molecules is what fascinates me the most.

In my opinion, the word "scientist" means … a critical collector, searcher, and sometimes an "understander".

If I could have dinner with three famous scientists from history, they would be … Albert Einstein, Erwin Schrödinger, and Max Planck.

And I would ask them … where the inspiration for their ideas and theories came from.

My greatest achievement has been … plastering half of one of the walls in my house—and having the professionals decide it was good enough not to have to redo it.

The most exciting thing about my research is … being surprised regularly—even now our knowledge is far from sufficient to predict the outcomes of our synthesis and reactivity studies with any certainty.

The best stage in a scientist's career is … in my case, without a doubt, right now.

My biggest motivation is … to first figure out if it works, and if it does, to make it work better.

Guaranteed to make me laugh is … a somewhat strange style of linguistic humor—the work of Douglas Adams being a good example.

The worst advice I have ever been given was … "give up".

The best advice I have ever been given is … "keep going".

The downside of my job is … when the freedom to concentrate on research falls victim to management, administration, and excessive bureaucracy.

My favorite author is … Neil Gaiman—whose books I have often become so absorbed in that I only regain awareness of my surrounding many, many pages later—sometimes even in bookstores!

My top three films of all time are … There's only one: "The Fifth Element"—honestly, what else.

My favorite song is … difficult to decide, but Locomotive Breath from Jethro Tull has to be right up there.

How has your approach to chemistry research changed since the start of your career?

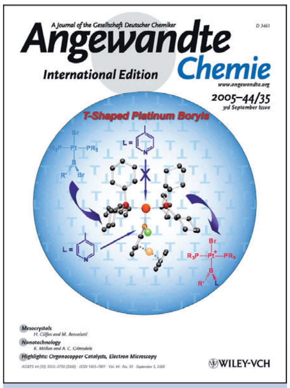
There are very few fundamental changes, as our goals—to make new classes of main-group and organometallic molecules available, and investigate their electronic and chemical properties—have not changed. However, our research interests have significantly broadened in recent years, that is, in addition to our ongoing interest in metal–boron complexes and metallocenophanes, we are investigating diverse systems such as boroles, boron–boron multiple bonds, and transition-metal bases, and have intensified our interests in molecular materials and catalysis. As in the past, our inspiration mostly comes from occasional unexpected results and intensive discussion with co-workers and colleagues.

How do you think your field of research will evolve over the next 10 years?

For someone with a fondness for the “fifth element”, it is fascinating to see how rapidly the molecular chemistry of boron has developed in the last 10–15 years. In particular, metal-mediated borylation (boronic esters for C−C coupling), π-conjugated materials (organic electronics), frustrated Lewis pairs (FLPs; activation of small molecules with main-group elements), or boron–nitrogen compounds (hydrogen storage)—these fields alone provide much hope for the next ten years! Thus, functionalization of organic substrates by metal–boron complexes or through organocatalysis with FLPs has become realistic. We may even see a hydrogen-storage material based on boron and nitrogen in the next ten years. The most important precondition for success in applied chemistry, however, is comprehensive knowledge of the relevant principles; in other words, fundamental research.

My 5 top papers:

1. “Synthesis and Structure of the First Transition Metal Borylene Complexes”: H. Braunschweig, T. Wagner, *Angew. Chem.* **1995**, *107*, 904–905; *Angew. Chem. Int. Ed. Engl.* **1995**, *34*, 825–826 and “Synthesis and Structure of the First Terminal Borylene Complexes”: H. Braunschweig, C. Kollann, U. Englert, *Angew. Chem.* **1998**, *110*, 3355–3357; *Angew. Chem. Int. Ed.* **1998**, *37*, 3179–3180.
   These two publications are, for me, inseparable. Here, for the first time, the synthesis and full characterization of bridged and terminal borylenes was achieved, founding a topic that has kept us occupied ever since, and is documented in around 100 publications. This provided the unique possibility to use borylene complexes as sources of the highly reactive free borylenes “**:**B−R” under mild conditions in metathesis, transmetalation, and the functionalization of organic substrates.
2. “Interaction between d- and p-Block Metals: Synthesis and Structure of Platinum–Alane Adducts”: H. Braunschweig, K. Gruss, K. Radacki, *Angew. Chem.* **2007**, *119*, 7929–7931; *Angew. Chem. Int. Ed.* **2007**, *46*, 7782–7784.
   In our desire to extend the boron–halide oxidative addition process to other Group 13 elements, we discovered that for the heavier homologues of boron, often products with metal–metal dative bonds (so-called metal-only Lewis pairs, MOLPs) are preferred. Subsequently, we were able to synthetically realize unprecedented combinations of transition metals with Lewis acids of the s, p, and d blocks—such as complexes of the type $[(R_3P)_2Pt\rightarrow BeX_2]$, the first molecules containing transition-metal–beryllium bonds.
3. “Structural Evidence for the Antiaromaticity in Free Boroles”: H. Braunschweig, I. Fernandez, G. Frenking, T. Kupfer, *Angew. Chem.* **2008**, *120*, 1977–1980; *Angew. Chem. Int. Ed.* **2008**, *47*, 1951–1954.
   This work also opened many new research directions for us. Although boroles had been known for decades, including those bound to metals, no structural evidence for the antiaromaticity of free boroles had been presented. We are interested in the use of boroles as building blocks for π-conjugated materials and persistent or stable radicals. Recently, we have produced a rare example of a boron-centered nucleophile by reduction of a carbene-stabilized borole—a “hot topic” in current boron chemistry.
4. “Synthesis of a Paramagnetic Polymer by Ring-Opening Polymerization of a Strained [1]Vanadoarenophane”: H. Braunschweig, C. J. Adams, T. Kupfer, I. Manners, R. M. Richardson, G. R. Whittell, *Angew. Chem.* **2008**, *120*, 3886–3889; *Angew. Chem. Int. Ed.* **2008**, *47*, 3826–3829.
   We had been interested in strained diamagnetic metallocenophanes for a long time, before later also turning to paramagnetic complexes of vanadium. Thereby, we were able to prepare well-defined organometallic oligomers and polymers based on paramagnetic repeat units. We are currently investigating these, and related polymers containing chromium and titanium.
5. “Oxoboryl Complexes: Boron–Oxygen Triple Bonds Stabilized in the Coordination Sphere of Platinum”: H. Braunschweig, K. Radacki, A. Schneider, *Science* **2010**, *328*, 345–347 and “Ambient-Temperature Isolation of a Compound with a Boron–Boron Triple Bond”: H. Braunschweig, R. D. Dewhurst, K. Hammond, J. Mies, K. Radacki, A. Vargas, *Science* **2012**, *336*, 1420–1422.
   The syntheses of the first stable compounds with boron–oxygen and boron–boron triple bonds constitute some of our best results. For the first time, those highly reactive triple-bond species became available under standard conditions, thus allowing the study of their electronic and chemical characteristics.



The work of H. Braunschweig has been featured on the cover of Angewandte Chemie:
“A T-Shaped Platinum(II) Boryl Complex as the Precursor to a Platinum Compound with a Base-Stabilized Borylene Ligand”: H. Braunschweig, K. Radacki, D. Rais, D. Scheschkewitz, *Angew. Chem.* **2005**, *117*, 5796–5799; *Angew. Chem. Int. Ed.* **2005**, *44*, 5651–5654.

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