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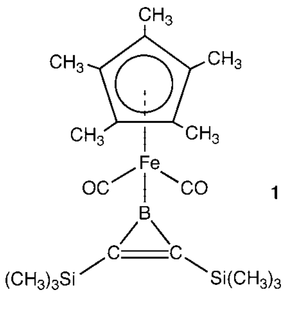
Editor's Page

Introduction to the Review by Anderson, Braunschweig, and Dewhurst in This Issue of *Organometallics*

A new and exciting area of organoboron chemistry has emerged in recent years, that of the monovalent borylenes, R−B:, in which the boron atom bears one substituent, which may be inorganic, organic, or organometallic. These are highly reactive species that can be generated only *in situ* and cannot be isolated as pure compounds. Nevertheless, they have a well-developed chemistry. Of special interest are the transition metal-substituted borylene complexes, in which the borylene is present as a terminal or a bridging ligand. Noteworthy among the reactions of such complexes are those in which the borylene ligand is transferred to another organometallic species or to an organic substrate. Such interesting and useful reactions are the subject of the review by Anderson, Braunschweig, and Dewhurst in this issue of *Organometallics*. The molecule on the cover of this issue, **1**, is a boracyclopropene (a borirene), the product of the addition of an organometal-substituted borylene to bis(trimethylsilyl)acetylene. As reported in 2007 by Braunschweig, Fernández, Frenking, Radacki, and Seeler (*Angew. Chem. Int. Ed*. 2007, *46*, 5215.), its preparation was effected by photolysis at room temperature of a mixture of the yellow borylene complex $(OC)_5Cr{=}B{-}Fe(CO)_2(\eta^5\text{-}C_5Me_5)$ in an organic solvent (hexane, benzene, or THF). It was formed in quantitative yield and isolated as a yellow crystalline solid, whose structure as shown on the cover was determined by an X-ray diffracation study and whose electronic structure was elucidated by a DFT study.



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Professor Holger Braunschweig, of the University of Würzburg, the senior author of this review, has been the major contributor to the chemistry of transition metal−borylene complexes since his discovery of the first one in 1995. Since that time this area has blossomed in Professor Braunschweig's laboratories, with contributions also by Alan Cowley, at the University of Texas at Austin, and Simon Aldridge, at Cardiff University and, more recently, Oxford University.

Holger Braunschweig began his studies in chemistry at the Rheinisch-Westfälische Technische Hochschule (RWTH) in Aachen, Germany, in 1983. He carried out research for his Diploma and Dr. rer. nat. degrees under the guidance of Professor Peter Paetzold, one of Germany's distinguished boron chemists, and his interests and research activities have in large part remained focused on the chemistry of boron and its compounds ever since. At the RWTH his research was concerned initially with the chemistry of iminoboranes. After he received his Dr. rer. nat. in December 1990, he spent a year at the University of Sussex as a postdoctoral associate of Professor Michael Lappert, working on aminostannylene and -germylene chemistry. Subsequently he returned to the RWTH, where he completed his Habilitation in Professor Paetzold's laboratory. In May 1998 he was appointed Privatdozent. Academic appointments (Senior Lecturer, 2000, and Reader, 2002) at Imperial College in London followed. Appointment to his present position of Professor of Inorganic Chemistry at the University of Würzburg came in November 2002. In addition to his outstanding, innovative, and very productive research in organoboron chemistry, Professor Braunschweig is active in other, rather diverse areas of organometallic synthesis and catalysis. For example, the preparation and study of a variety of "phane" complexes, such as [*n*]vanadoarenophanes, the first

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strained [2]silanickelocenophane, and borametallocenophanes, may be noted. However, it is the research on borylenes and metalborylene complexes whose further development promises the discovery of exciting new chemistry as Professor Braunschweig notes in his concluding “Summary and Outlook” section.

A final note about the coauthors of this review. Carly Anderson, a native of the UK, studied chemistry at the University of Leicester and obtained her Ph.D. at the University of Durham in 2007 under the guidance of Dr. Philip Dyer. Subsequently she spent a postdoctoral year at Würzburg working on transition metal−borylene complexes in Professor Braunschweig’s laboratories. She is at present continuing postdoctoral work with Professor Michael Bruce at the University of Adelaide in Australia. Rian Dewhurst is a native of New Zealand, where he obtained his B.Sc. degree in chemistry at the University of Canterbury. He continued his studies at the Australian National University, receiving his Ph.D. in 2006 after completion of his dissertation research with Professor Anthony F. Hill. Subsequent to a postdoctoral stay (2006−2007) at the University of California at Riverside with Professor Guy Bertrand, he spent 2007−2008 with Professor Braunschweig, supported by a research fellowship of the Alexander von Humboldt Foundation.

My thanks to Professor Arnold L. Rheingold for the cover figure.

Dietmar Seyferth
Editor

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