

ORGANOMETALLICS

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Editor's Page

When our readers see the title of the review in this issue, "The Preparation and Reactivity of Compounds Containing a Carbon–Xenon Bond", they probably will think that we finally have gone too far beyond the accepted boundaries of organometallic chemistry. Inclusion of the organic compounds of the metalloids, boron, silicon, germanium, arsenic, and tellurium, is fine: that goes back to Frankland and the other organometallic chemists of the 1850s and 1860s. Allowing in some papers on metal amides, alkoxides, and hydrides and organophosphorus compounds is stretching things a bit but is acceptable when the subject matter is of special interest to some organometallic chemists. But organoxenon compounds?!!

It all depends on how you look at things. As you read this review, you will see that the synthesis of the stable arylxenon and arylxenonium compounds represents a very clever and imaginative application of organometallic chemistry, that of the use of fluorine-containing triarylboranes as unique synthetic reagents, by two German research groups: those of Hermann-Josef Frohn, one of the authors of the present review, and of Dieter Naumann. Thus, we are well within the borders of organometallic chemistry. In fact, the borane used most, $(C_6F_5)_3B$, is a hot item in today's organometallic chemistry. It readily abstracts alkyl anions from metallocene alkyl derivatives (such as $Cp_2Zr(CH_3)_2$) and other ligand-stabilized transition-metal alkyls to form salts containing a borate anion, $[(C_6F_5)_3BR]^-$. Such anions, formed in situ in this manner, or by other means, are weakly nucleophilic species and as such have played (and continue to play) an important role in metallocene-catalyzed ethylene and α -olefin polymerization and in the isolation of salts of highly electrophilic cations such as R_3Si^+ ions, to cite two applications well-known to our readers. (In the present case, such borate anions serve in the isolation of arylxenonium salts.)

Organoxenon compounds, their synthesis, properties, and reactivity, could find a home in inorganic journals. However, in view of their syntheses using organometallic reagents, I think that papers on organoxenon compounds fit well into an organometallic journal. For this reason, I invited Professor Frohn to write this review, which serves as a very nice introduction to this fascinating new area of chemistry.

Dietmar Seyferth
Editor

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