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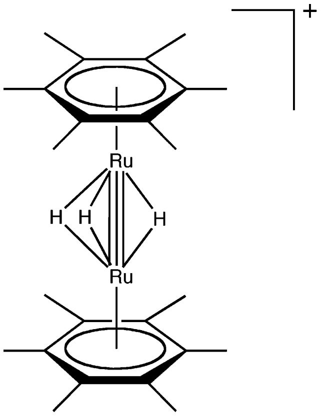
Editor's Page

The Editor's Introduction to the Review by Süss-Fink and Therrien in This Issue of *Organometallics*

Our cover molecule, a cationic dinuclear (η^6-hexamethylbenzene)ruthenium complex with three hydrogen bridges between the ruthenium atoms (**1**), was first prepared in 1982 but was structurally characterized by Georg Süss-Fink, the author (with Bruno Therrien) of the review in the present issue of *Organometallics*, and his co-workers at the University of Neuchâtel in Switzerland only in 1998 (*J. Organomet. Chem.* **1998**, *561*, 227). This ruthenium complex, which was isolated as its PF_6^- salt in the form of violet crystals, has a very short Ru−Ru distance indicative of a formal metal−metal triple bond (a five-center−six-electron interaction involving the two Ru and three H atoms). The PF_6^- salt is noteworthy because it is water-soluble and stable to hydrolysis, allowing its reactions to be carried out in aqueous medium, thus adding another dimension to its reactivity. Furthermore, the dinuclear cation **1** is electron-deficient, making it susceptible to attack by diverse nucleophiles. The very interesting chemistry of cation **1** and of its osmium analogue, $[(\eta^6\text{-}C_6Me_6Os(\mu_2\text{-}H)_3Os(\eta^6\text{-}C_6Me_6)]$, is the subject of the review by Professor Süss-Fink and Dr. Therrien.



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Professor Süss-Fink, who was born in Germany, studied chemistry at the Technische Universität München, where he carried out his doctoral research under the guidance of Max Herberhold, obtaining his Ph.D. in 1977. A year of postdoctoral work with Professor (now Lord) Jack Lewis at the University of Cambridge followed. From 1978 to 1986 he continued his collaboration with Professor Herberhold, now at the University of Bayreuth, where he obtained his Habilitation, after having spent a year as invited professor at the University of Rennes. Following two years as associate professor at the Technische Hochschule Aachen, Professor Süss-Fink joined the chemistry faculty of the University of Neuchâtel as Professor of Chemistry. He has been Director of the Institute of Chemistry since 2004. Dr. Therrien, a native Canadian, studied chemistry at the University of Montreal and left Canada to obtain his Ph.D. in 1998 at the University of Berne in Switzerland. After several postdoctoral years (Weizmann Institute, Massey University, Tokyo University), he holds at present a senior research position in Professor Süss-Fink's group at Neuchâtel.

A perusal of Professor Süss-Fink's extensive publication list shows that he has dedicated most of his research career to the organometallic chemistry of ruthenium and osmium: extensive studies on trinuclear carbonyl derivatives of these metals, including very interesting and useful applications in catalysis (hydroformylation, carbonylation, C−H, Si−H, and N−H bond activation, C−C and C−N bond coupling) and as building blocks in the construction of higher nuclearity clusters. Of special interest is the result of a collaborative study between the research groups of Professor Süss-Fink and Professor R. G. Finke of Colorado State University which provided strong evidence that the novel, water-soluble, oxo-capped, trinuclear cation $[H_3Ru_3(C_6H_6)(C_6Me_6)_2(O)]^+$ is not the true active catalyst of the hydrogenation of benzene, but that it really is trace Ru(0) formed from the trinuclear complex under the reaction conditions. Noteworthy also is the tetranuclear, water-soluble cluster $[H_4Ru_4(C_6H_6)_4]^{2+}$, which abstracts the sulfur atoms from thiophene, benzothiophene, and dibenzothiophene to give $[H_2S_2Ru_4(C_6H_6)_4]^{2+}$ and the respective hydrocarbons 1,3-butadiene, styrene, and 1,1′-biphenyl. Many studies of dinuclear ruthenium and osmium complexes, including those which are the subject of the review in this issue, have been carried out as well. It is obvious from the publications of Professor Süss-Fink and of many workers in other laboratories throughout the world that there is much of interest in the chemistry of polynuclear ruthenium and osmium complexes. The excellent review by Süss-Fink and Therrien of one small aspect of this area gives us only a taste of what easily could be the subject of a large and interesting monograph.

Our thanks are due to Professor Arnold L. Rheingold for the cover figure.

Dietmar Seyferth
Editor

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