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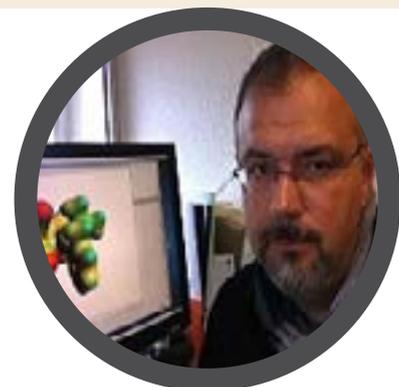
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FROM FUNDAMENTAL ORGANOMETALLICS TO CATALYSIS: THE QUEST FOR “FUZZY” METAL-METAL AND METAL-LIGAND BONDS

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Metal-promoted catalysis creates a great variety of challenges mostly related to the transient formation of coordinatively unsaturated metal complexes. The latter, long considered as chemical chimeras are central to the rationalization of reaction mechanisms. It will be shown that such species can be isolated in a persistent form, thanks to the stabilization provided by non-covalent interactions (NCIs). The concept of “Hemichelation” relies on the central cohesive role of NCIs and allows the ready isolation of T-shaped metal complexes for instance. Further, proper understanding of metal-ligand interaction is still an important domain of research. It will be shown that, in the field of metal-promoted hydrosilylation, renewed insight into the electronic structure of metal (silane) adducts may clarify the potentials of those key reaction intermediates.



Biography

Jean-Pierre Djukic is Director of Research at the CNRS in Strasbourg and heads the Laboratory for Organometallic Chemistry and Systemics within the Institute of Chemistry of Strasbourg (UMR CNRS 7177). He obtained a PhD in 1992 from Pierre and Marie Curie University in Paris under the guidance of E Rose, was Associate Researcher with L K Woo at Iowa State University from 1993 to 1994 and an Alexander von Humboldt fellow with K H Dötz at the University of Bonn from 1996 to 1997. He is currently heading a research effort in organometallic chemistry at the CNRS in Strasbourg, which he joined in 1994. Since 2014, he is involved in an interdisciplinary ANR-DFG-funded consortium with the group S Grimme (Bonn, Germany), which deals with cohesion in transition metal chemistry. Since January 2015, he is Chairing the Scientific Council of the Institute of Chemistry of the CNRS.

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