

Past and Present Research Systems of Green Chemistry

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Suzuki-Miyaura cross coupling reactions in water: New hydrophilic ligand scaffolds from pincer compounds to cocoa beans

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Catalysis is at the core of green chemistry, constituting one of the principles of this doctrine and representing one of its fundamental pillars. Among the most celebrated catalyzed chemical transformations are the cross coupling reactions and one that has had a tremendous development in the last decade is the Suzuki-Miyaura reaction. Being considered nowadays a fundamental power tool in organic synthesis. Recent advances in this area deal with the use of this process in water, using alternative energy sources, employing highly reactive and selective catalyst, preferable soluble in water. Thus, in this work we will present recent developments on the design and synthesis of novel hydrophilic ligand scaffolds including pincer ligands, secondary amines having hydrophilic substituents and naturally occurring compounds such as theophylline and other xanthine derivatives. The results on the use of these ligands in cross coupling reactions in water or aqueous media will be discussed.

Biography

David Morales-Morales did his PhD at the University of Essex, UK and Postdoctoral studies at the University of Hawaii at Manoa. He is Professor of Chemistry at Instituto de Química-UNAM in Mexico. His research covers organometallic and coordination chemistry with platinum group metals. He has published some 150 papers, reviews and chapters in books. He was the Editor of the book *"The Chemistry of the Pincer Compounds"* (Elsevier). He has presented over 60 plenary and invited conferences around the world and is a part of the international editorial and advisory boards of the journals *ARKIVOC* and *ChemCatChem* (Wiley-VCH-Germany) and of the *Homogeneous Catalysis Symposia (ISHC)*.

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