

# Ligand Design: the Key to Unlock the Chemical Space of Gold

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Instituto de Síntesis Química y Catálisis Homogénea

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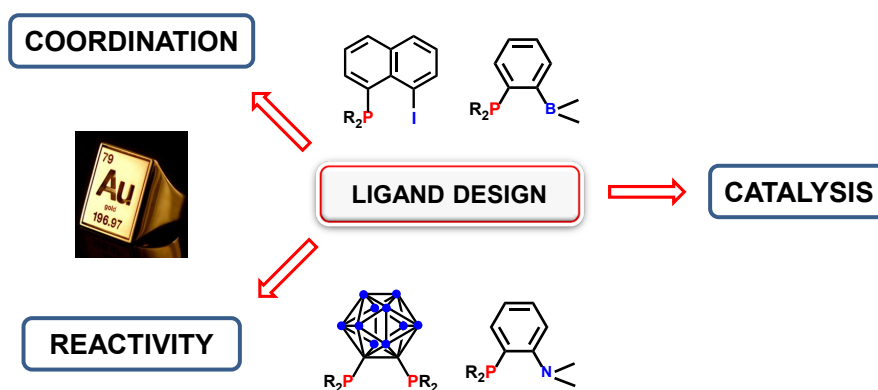
# Ligand Design: the Key to Unlock the Chemical Space of Gold

D. Bourissou (LHFA, CNRS-University of Toulouse)

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The research activities in our group are focused on the design of bifunctional ligands for applications in organic and organometallic chemistry. We are particularly interested in new highly reactive species and new chemical transformations. Very fundamental in nature with thorough structural/bonding analyses and mechanistic investigations, our work aims at developing (catalytic) reactions complementary to those currently known.

In this seminar, I will focus on gold chemistry, where ligand design proved to be extremely fruitful and to open new chemical space. Special interest will be given to ligands triggering challenging elementary steps, oxidative addition and reductive elimination in particular. The various ligand frameworks and their specific features will be discussed in detail. Applications in homogeneous catalysis will also be presented.



## D. Bourissou (LHFA, CNRS-University of Toulouse)

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Didier Bourissou obtained his PhD from Toulouse University with G. Bertrand. He then spent one year as research associate at the Ecole Polytechnique with F. Mathey and P. Le Floch. Appointed as a Chargé de Recherche CNRS in 1998, he was promoted Directeur de Recherche in 2006. From 2006 to 2018, he has been Associate Professor at the Ecole Polytechnique. He has been Director of the Laboratoire Hétérochimie Fondamentale et Appliquée (LHFA) from 2011 to 2020.

Recently, he was awarded the Silver Medal of the CNRS (2016), the Organic Division Award from the French Chemical Society (2018) and the Del Duca Grant from the French Academy of Sciences (2020). He was elected to the Academia Europaea in 2021.

His research interests concern new bonding situations and reactivity patterns arising from the main group elements, the transition metals and their interplay. He has pioneered ambiphilic ligands in the mid 2000's and developed the concept of  $\sigma$ -acceptor ligands. Part of his research deals with non-innocent pincer complexes and unusual behavior of the coinage metals, in particular gold. In 2022, he received an ERC Advanced Grant entitled « Gold-Redox ».