

Stories of Chiral-at-Metal Complexes and the Elusive Sensor for Barium-tagging

Dra. Zoraida Freixa

Ikerbasque Research Professor, UPV/EHU

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This lecture will cover two different topics that are the main focus of our research group: the study of chiral-at-metal complexes and the development of luminescent sensors based on organometallic compounds

The former will be exemplified with three case examples in which the unique role of the chiral-at-metal complex will be emphasized (either because it requires a new resolution methodology to be isolated, for its counterintuitive results in asymmetric catalysts or because it can be used as a tool for the dynamic resolution of helicenic ligands).

The latter is part of an ambitious project in the area of Particle Physics that requires the development of a sensor for barium with the ultimate sensitivity (one atom). An overview of the project and the strategy for the development of such sensors will be presented.

BIOGRAPHY:



<https://www.ikerbasque.net/es/zoraida-freixa>

<https://freixagroup.com/>

Zoraida Freixa completed her Ph.D. in homogeneous catalysis at the Autonomous University of Barcelona (2000). After a 1-year stage at the Universidad de Coimbra (Portugal), and a 3-years postdoctoral stage at Prof. van Leeuwen's group at the University of Amsterdam (2001–2003), she enrolled as Ramón y Cajal Researcher at the Institute of Chemical Research of Catalonia (ICIQ), in Tarragona (2004–2009). In 2010, and after a short period as a Lecturer at the University of Barcelona, she enrolled in the University of the Basque Country (UPV-EHU) in San Sebastián, holding an Ikerbasque Research Professor position she occupies until now. She is leading a research group working on organometallics for catalytic and sensing applications, with a special focus on photoswitchable and chiral-at-metal complexes.

She was vice-president of the Specialized Group on Organometallic Chemistry (GEQO) of the RSEQ (2014–2018).

Dr. Freixa has published more than 70 research articles in international journals, 8 book chapters, and is co-inventor of 3 patents in the area of organometallic catalysis (h index = 29).

She has supervised 8 PhD doctoral theses, 8 Master theses (TFMs), 11 Final degree projects (TFGs), and several post-doctoral researchers and erasmus visiting researchers. She is currently supervising 3 PhD theses.