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***Scientific Vita***

2023-now ICREA Research Full Professor, ICIQ

2014- now Group Leader at the Institute of Chemical Research of Catalonia (ICIQ) Tarragona, Spain

2010-2014 Postdoctoral Researcher, University of Cambridge, UK

2009-2010 Postdoctoral Researcher, University of Oviedo

2005 PhD summer internship, Harvard University, USA

2004-2009 PhD in Organometallic/Organic Chemistry, University of Oviedo, Asturias, Spain

2003 BS Chemistry, University of Oviedo, Asturias, Spain

***Research Field***

Catalytic C–H & C–C bond functionalization, carbyne & carbene transfer, skeletal editing, biomolecule bioconjugation

***Awards and Recognition***

ERC Proof of Concept 2024, Young Investigator 2020 (Eli Lilly-RSQE), ERC Consolidator Grant 2019 (European Commission), Young Investigator Award (EuChemS -Organic Division)

***Representative Publications***

1. Zhaofeng Wang, Ana G. Herraiz, Ana M. del Hoyo, Marcos G. Suero. Generating carbyne equivalents with photoredox catalysis. *Nature*, **2018**, *554*, 86.
2. Zhaofeng Wang, Liyin Jiang, Pau Sarró, Marcos G. Suero. Catalytic cleavage of C(*sp*2)-C(*sp*2) bonds with Rh-carbynoids. *J. Am. Chem. Soc* **2019**, *141*, 15509.
3. Hang-Fei Tu, Aliénor Jeandin, Marcos G. Suero. Catalytic Synthesis of Cyclopropenium Cations with Rh- Carbynoids. *J. Am. Chem. Soc.* **2022**, *144,* 16737*.*
4. Eric Palomo, Akhilesh K. Sharma, Zhaofeng Wang, Liyin Jiang, Feliu Maseras, Marcos G. Suero. Generating Fischer-type Rh-carbenes with Rh-carbynoids. Generating Fischer-type Rh-carbenes with Rh-carbynoids. *J. Am. Chem. Soc.* **2023***, 145,* 4975*.*
5. Wei Jie Teo, Josep Esteve Guasch, Liyin Jiang, Bowen Li, Marcos G. Suero. Rh-Catalyzed Enantioselective Single-Carbon Insertion of Alkenes. *J. Am. Chem. Soc.* **2024**, *146*, 21837.

Catalytic Carbyne Transfer in Organic Synthesis

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The art of organic synthesis and reaction discovery relies on logic-guided thought processes that often involve hypovalent carbon reactive species and their corresponding stabilized equivalent forms. However, not all of the possible carbon reactive intermediates and their reactivity rules have attracted the same attention by the synthetic community. This is mainly because of the perception of the lack of synthetic utility and importantly, because of the challenges associated with controlling its extreme reactivity and lack of efficient sources.

In this lecture, I will show how the catalytic generation of conceptually-novel carbyne equivalents, enabled the discovery of new carbon reactivity towards C–H and C–C bonds. The metal or photocatalytic activation of tailored sources revealed new reactivity rules at carbon that have been under-appreciated, not only in the design and discovery of new chemical reactions, but also in their use to build molecular complexity through unexplored disconnection approaches via skeletal editing and late-stage functionalizations of medically relevant agents.

