

## Metaloradical intermediates as a playground for structural complexity

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Our group has recently explored the reactivity of C and N centered radicals, in combination with transition metals, to streamline the functionalization of  $\pi$ -systems.

Here, we will present our efforts to generate and harvest these valuable intermediates in synthetically relevant contexts, including recent results towards their application in asymmetric transformations.<sup>[1]</sup> Further, examples of Nickel catalyzed dicarbofunctionalizations of alkenes and alkynes in a chemo-, regio- and stereoselective manner utilizing radicals as well as studies on the mechanistic features underlying these transformations will be presented in this lecture.<sup>[2]</sup>

- [1] a) C. Hervieu, M. Kirillova, T. Suárez, M. Müller, E. Merino, C. Nevado, *Nat. Chem.*, **2021**, *13*, 327.  
b) C. Hervieu, M. Kirillova, S. Cuesta-Galisteo, Y. Hu, E. Merino, C. Nevado, *Nat. Chem.*, **2024**, *16*, 607–614.
- [2] a) S. Cuesta-Galisteo, J. Schörgenhumer, X. Wei, E. Merino, C. Nevado, *Angew. Chem. Int. Ed.*, **2021**, *60*, 1605.  
b) X. Wei, W. Shu, A. García-Domínguez, E. Merino, C. Nevado, *J. Am. Chem. Soc.* **2020**, *142*, 13515.  
c) X. Hu, I. Cheng-Sánchez, S. Cuesta-Galisteo, C. Nevado, *J. Am. Chem. Soc.* **2023**, *145*, 6270.  
d) X. Du, I. Cheng-Sánchez, C. Nevado *J. Am. Chem. Soc.* **2023**, *145*, 12532.  
e) S. Cuesta-Galisteo, J. Schoergenhumer, C. Hervieu, C. Nevado\*, *Angew. Chem. Int. Ed.*, **2024**, e202313717.  
f) X. Hu, I. Cheng-Sánchez, W. Kong, G. A. Molander, C. Nevado\* [doi.org/10.1038/s41929-024-01153-0](https://doi.org/10.1038/s41929-024-01153-0)