



## Homogeneous supported (asymmetric) catalysis

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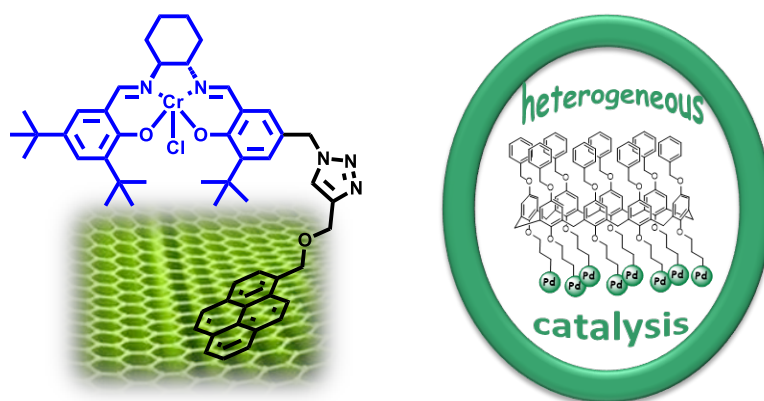
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The role of organometallic catalysis allowing the targeted production of high value-added products no longer needs to be demonstrated, but the fine chemicals sector dedicated to health applications remains very demanding for innovative and sustainable synthesis routes.

On the one hand, the search for an efficient synthesis of enantioenriched functionalized molecules is still topical; Making precious chiral catalysts insoluble and therefore easily recoverable and reusable is an elegant way to answer the principles of green chemistry and sustainable development.

On the other hand, obtaining minimal residual traces of metal in the target products is another important objective; Most transition metals are indeed toxic species, and their presence in valuable chemicals is accurately regulated, depending on their mode of administration. Additionally, residual amounts of metals can interfere with subsequent synthetic steps of the process.

It is in this context that we work on the one hand on different modes of immobilization of chiral salen complexes and study their efficiency in the heterogeneous catalysis of enantioselective formation of C-C, C-O and C-N bonds.<sup>[1]</sup> Since cross-coupling reactions are prevalent tools in the fine chemical industry, we also propose the synthesis and the evaluation of the catalytic activity of Pd-NHC complexes covalently grafted on calix[8]arene supports in Suzuki-Miyaura<sup>[2]</sup> and Buchwald-Hartwig reactions.<sup>[3]</sup>



### For some recent references

1. Calix[8]arene as new platform for Cobalt-Salen complexes immobilization and use in hydrolytic kinetic resolution of epoxides. I. Abdellah, C. Martini, A. Dos Santos, D. Dragoe, V. Guérineau, V. Huc, E. Schulz, *ChemCatChem* **2018**, *10*, 4761; DOI: [10.1002/cctc.201801164](https://doi.org/10.1002/cctc.201801164); Chiral Chromium Salen@rGO as Multipurpose and Recyclable Heterogeneous Catalyst. M. Abd El. Sater, M. Mellah, D. Dragoe, E. Kolodziej, N. Jaber, E. Schulz, *Chem. Eur. J.* **2021**, *27*, 9454; DOI: [10.1002/chem.202101003](https://doi.org/10.1002/chem.202101003); Making Chiral Salen Complexes Work with Organocatalysts. Y. Yuan, M. Mellah, E. Schulz, Olivier R. P. David, *Chem. Rev.* **2022**, *122*, 8841; DOI: [10.1021/acs.chemrev.1c00912](https://doi.org/10.1021/acs.chemrev.1c00912)
2. Synthesis, catalytic activity and comparative leaching studies of calix[8]arene-supported Pd-NHC complexes for Suzuki-Miyaura cross-couplings. S. Abi Fayssal, T. Naret, J. Buendia, A. Labattut, V. Huc, C. Martini, E. Schulz, *Adv. Synth. Catal.* **2022**, *364*, 947. DOI: [10.1002/adsc.202101204](https://doi.org/10.1002/adsc.202101204)
3. Benzyloxycalix[8]arene supported Pd-NHC cinnamyl complexes for Buchwald-Hartwig C-N cross-couplings. S. Abi Fayssal, T. Naret, V. Huc, J. Buendia, C. Martini, E. Schulz, *Catal. Sci. Technol.* **2021**, *11*, 5223. DOI: [10.1039/D1CY00669J](https://doi.org/10.1039/D1CY00669J)