Cooperative Asymmetric Catalysis under Confinement using functionalized Phenoxy-Imine Catalysts

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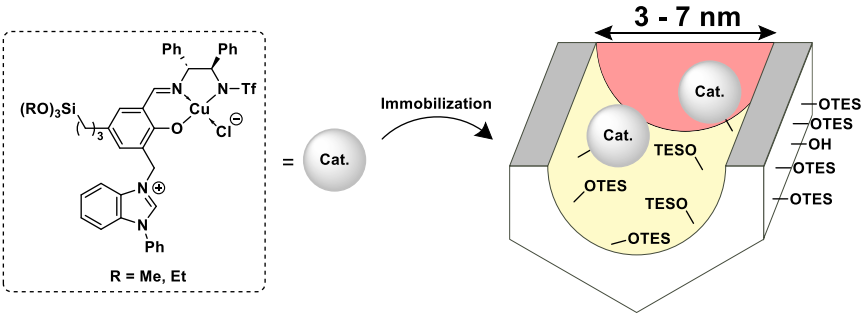
The concept of Cooperative Catalysis has previously been used in our group to develop a catalyst for the asymmetric Michael addition of 1,3-dicarbonyl compounds to various Michael acceptors with high activities, selectivities and TONs [1]. Our goal is to analyze how Cooperative Catalysis is affected by the confinement of mesoporous materials and if the catalytic activity/selectivity can benefit from it. For this purpose, the previously reported catalyst was modified with an innocent trimethoxysilyl linker and selectively immobilized within various mesoporous silica materials with moderate loadings. To facilitate the comparison between the homo- and heterogeneous systems, the catalyst and the catalytic conditions were simplified, while maintaining the high activity and selectivity. The results of these catalyses are presented and the found effects are discussed.



[1] A. C. Hans, P. M. Becker, J. Haußmann, S. Suhr, D. M. Wanner, V. Lederer, F. Willig, W. Frey, B. Sarkar, J. Kästner, R. Peters, *Angew. Chem. Int. Ed.* **2023**, *62,* e202217519, 10.1002/anie.202217519.