

FLUOROFUNCTIONALIZATION OF METAL CORROLES

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Based on the methodologies for installing CF_X -groups ($X = 2$ or 3) published by the groups of Olah and Hartwig, either via cyclopropenation with the Ruppert-Prakash reagent [1] or C-C coupling of ArHal ($\text{Hal} = \text{Br}$ or I) with $(\text{phen})\text{CuCF}_3$ [2] we intend to expand the scope of these fluorofunctionalizations to metal corrole macrocycles (Figure 1) for the development of new catalysts for small molecule activation (HER, OER, and CO_2 reduction). Furthermore, we report the effect of the (additional) fluorinated groups attached at the *meso*-substituents or β -pyrrolic positions of the 18π -electron macrocycle onto photo- and electrochemical properties.

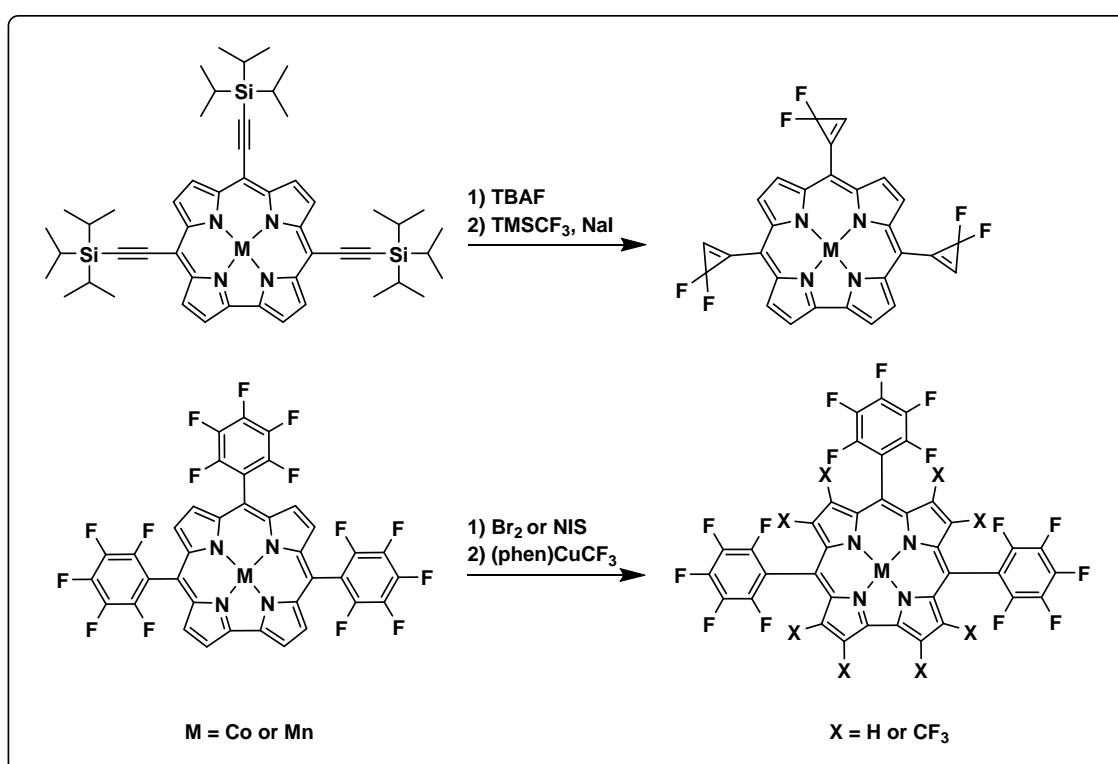


Figure 1: Envisioned reaction scheme for the fluorofunctionalization of metal corrole macrocycles.

[1] F. Wang, T. Luo, J. Hu, Y. Wang, H. S. Krishnan, P. V. Jog, S. K. Ganesh, G. K. S. Prakash, and G. A. Olah, *Angew. Chem. Int. Ed.* **2011**, *50*, 7153–7157.

[2] H. Morimoto, T. Tsubogo, N. D. Litvinas, and J. F. Hartwig, *Angew. Chem. Int. Ed.* **2011**, *50*, 3793–3798.