

SYNTHESIS OF LINKER-BASED BIFUNCTIONAL LIGANDS FOR UiO-67 METAL-ORGANIC FRAMEWORKS

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The immobilization of transition-metal complexes in metal-organic frameworks (MOFs) is a promising strategy for the recyclability of molecular catalysts. The high surface area and controllable structure of MOFs allow their design and modifiability.[1] In this regard, the incorporation of linker-based ligands can provide the appropriate stereochemical and electronic environments around the active transition-metal, mimicking molecular catalysts.

Recently, our group have reported a series of Cu complexes containing bioinspired linker-based ligands. Following a post-synthetic linker modification procedure of UiO-67, they have been successfully incorporated in the MOF structure.[2]

Herein, we describe the synthesis and structural characterization of linker-based bifunctional ligands containing a 4,4'-dicarboxylate-substituted phenyl-pyridine scaffold (Figure 1). The synthesis and characterization of the diacid analogue via hydrolysis of the ester is also described.

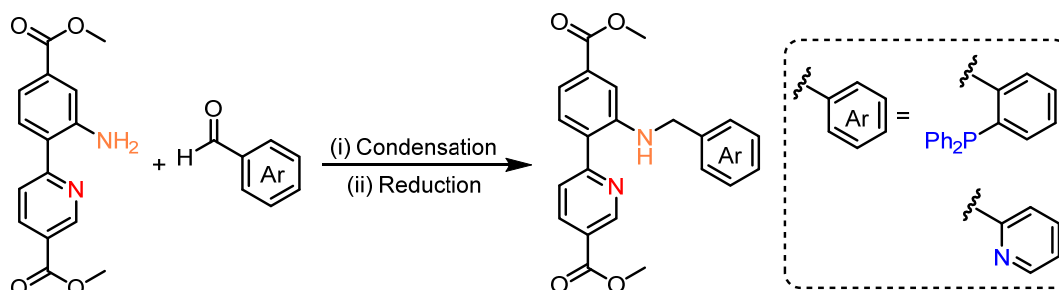


Figure 1. Linker-based bifunctional ligands reported in this work.

[1] (a) Lee, J.; Farha, O. K.; Roberts, J.; Scheidt, K. A.; Nguyen, S. T.; Hupp, J. T. *Chem. Soc. Rev.* **2009**, 38, 1450; (b) Pascanu, V.; González Miera, Greco; Ken Inge, A.; Martín-Matute, B. *J. Am. Chem. Soc.* **2019**, 141, 7223.

[2] Gerz, I.; Jannuzzi, S. A. V.; Hylland, K. T.; Negri, C.; Wragg, D. S.; Øien-Ødegaard, S.; Tilset, M.; Olsbye, U.; DeBeer, S.; Amedjkouh *Eur. J. Inorg. Chem.* **2021**, 4762.