

## Poster Presentation

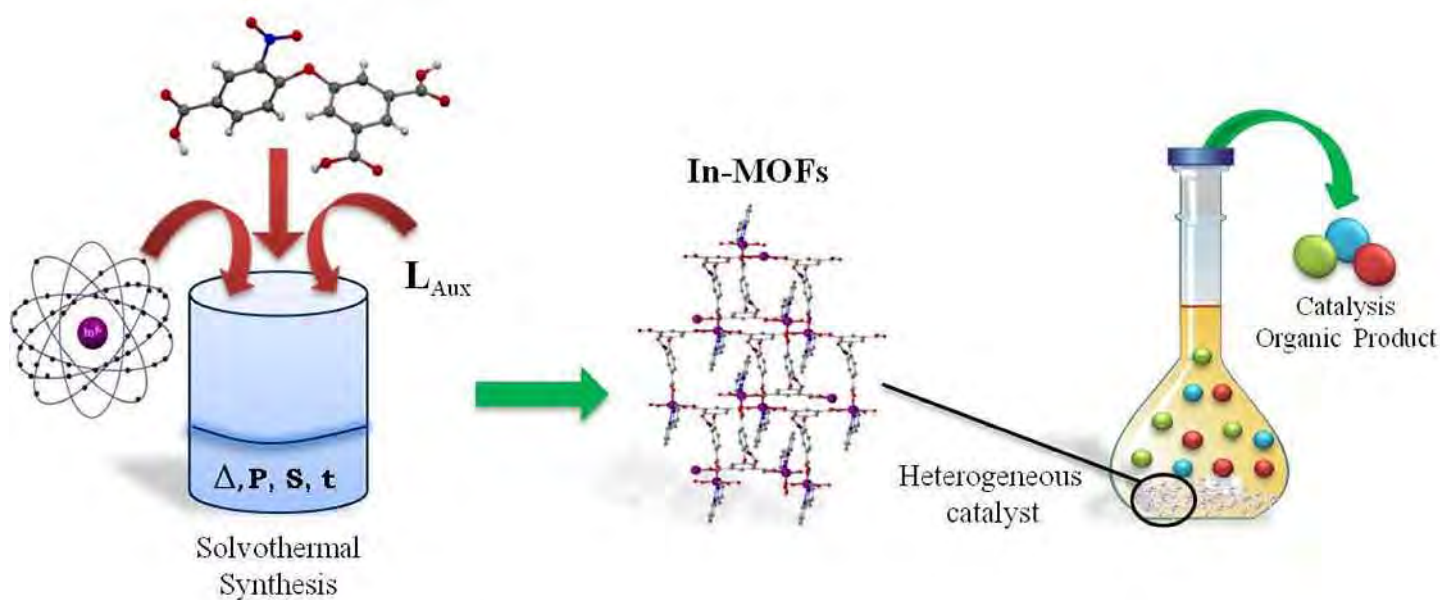
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### Heterogeneous catalytic activity of Novel Indium MOFs

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Generally, group IIIA metal-based polycarboxylates are less studied, compared with those of transition or rare earth metals. However, In-MOFs have received recently much attention due to their interesting network topologies, which are mainly owing to the variety of coordination modes (6, 7 or 8) in indium MOFs with O- and N-donor ligands. [1]. Some of In-MOFs exhibit an exceptional gas absorption, fluorescent, ion-exchange properties, and can be used as heterogeneous Lewis acid catalysts in various organic transformations. The high relevance of Indium materials in catalytic studies for important organic reactions led to development of indium MOFs. [2-3] Here we report the solvothermal synthesis, structural characterization, topological analysis and catalytic studies of six new indium-based MOFs using 5-(4-carboxy-2-nitrophenoxy)isophthalic acid (H<sub>3</sub>popha) together with N-donor ancillary ligands (Figure 1). The three indium compounds showing 3D networks are the following: [In<sub>8</sub>(OH)<sub>6</sub>(popha)<sub>6</sub>(H<sub>2</sub>O)<sub>4</sub>] $\cdot$ xH<sub>2</sub>O (1), [In<sub>2</sub>(popha)<sub>2</sub>(4,4'-bipy)<sub>2</sub>] (2) and [In<sub>3</sub>(OH)<sub>3</sub>(popha)<sub>2</sub>(4,4'-bipy)<sub>2</sub>] $\cdot$ xH<sub>2</sub>O (3). Meanwhile, compounds with a 2D network have a composition [In(popha)(1,10-phen)] $\cdot$ xH<sub>2</sub>O (4), [In(popha)(1,10-phen)] $\cdot$ xH<sub>2</sub>O (5) and [In(popha)(2,2'-bipy)] $\cdot$ xH<sub>2</sub>O (6). The catalytic study performed using indium compounds 1-6 as catalysts in a Lewis acidity promoted organic reaction, allows for establishing a connection between the corresponding MOF network dimensionality and its catalytic behavior.

[1] Y. L. Liu, J. F. Eubank, A. J. Cairns, Eckert, et al., *Angew. Chem., Int. Ed.*, 2007, 46, 3278., [2] B. Gómez-Lor, E. Gutiérrez-Puebla, M. Iglesias, et al., *Inorg. Chem.*, 2002, 41, 2429., [3] L. M. Aguirre-Díaz, M. Iglesias, N. Snejko, et al., *CrystEngComm*. 2013 15, 9562.



**Figure 1.** Description of the followed procedure for Indium MOFs obtained with the flexible ligand H<sub>3</sub>popha

**Keywords:** Indium compounds, metal-organic frameworks, Heterogeneous catalysis