

Basic isorecticular nanoporous metal-organic framework for Biginelli and Hantzsch coupling: IRMOF-3 as a green and recoverable heterogeneous catalyst in solvent-free conditions

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Synthesis of IRMOF-1:

IRMOF-1 (MOF-5) was synthesized according to the literature [1] with some modifications. For the synthesis of IRMOF-3, zinc nitrate hexahydrate (3 mmol) and (3.1 mmol) Terephthalic acid (TA) were dissolved in DMF (90 mL) and placed inside an autoclave. The mixture was heated at 373 K for 24 h, and the resulting solid was recovered by filtration, washed twice with DMF, and finally covered twice with CH₂Cl₂ for 12 h. Finally the sample was dried under vacuum at 120 °C for 6 h.

[1] U. Mueller, M. Schubert, F. Teich, H. Puetter, K. Schierle-Arndt, J. Pastré, J. Mater. Chem. 16 (2006) 626.

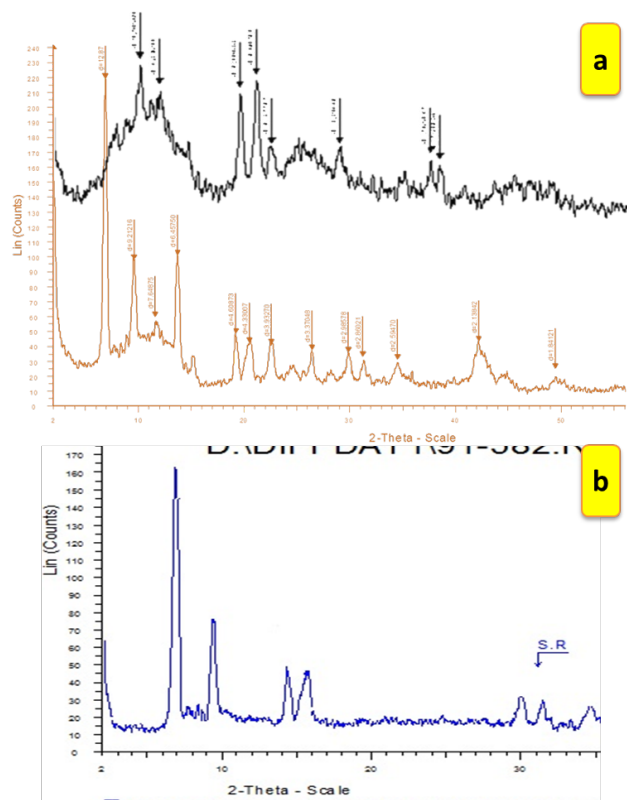


Figure 2. XRD pattern of IRMOF-3 (a) and IRMOF-1 (b) nanoporous solids.