

Amine-functionalized MOF membranes via microwave/ultrasonic heating for catalytic applications

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Metal organic frameworks (MOFs) are a class of organic-inorganic hybrid materials composed of metal clusters interconnected through a rigid organic linker. In this work, continuous and defect-free IRMOF-3 (Zn) and MIL125-NH<sub>2</sub> (Ti) membranes supported on either Al<sub>2</sub>O<sub>3</sub> and TiO<sub>2</sub> (both on a TiO<sub>2</sub> disc and on TiO<sub>2</sub> nanotubes obtained by anodization), relatively, were prepared by ultrasonic (US) and microwave (MW) heating methods, and the obtained membranes were applied as a heterogeneous catalyst for the Knoevenagel condensation reaction with high stability and recyclability, which enable easy catalyst separation in liquid phase.