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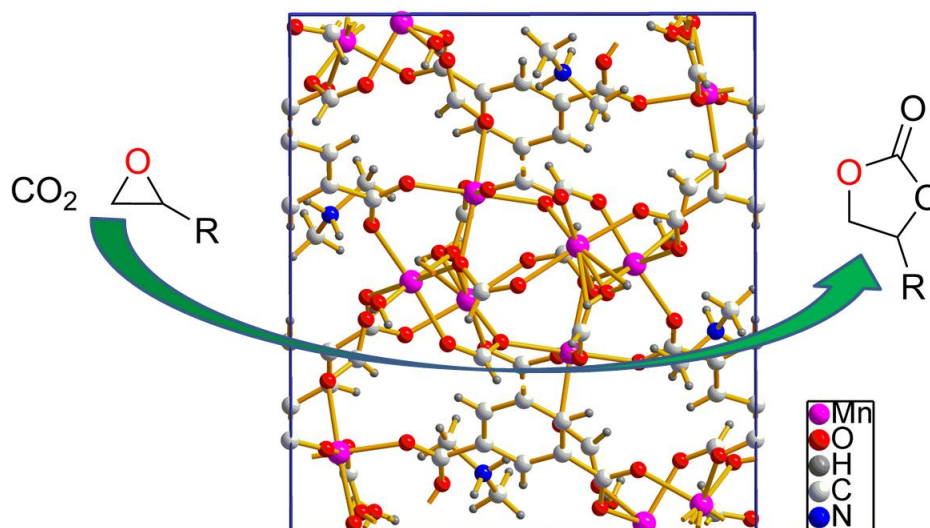
3D-monoclinic M-BTC MOF (M=Mn, Co, Ni) as highly efficient catalysts for chemical fixation of CO₂ into cyclic carbonates

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Graphical abstract



One-pot synthesis of cyclic carbonates from CO₂ and epoxides over 3D monoclinic Mn-BTC

Abstract [(CH₃)₂NH₂][M₃(BTC)(HCOO)₄(H₂O)]·H₂O (M-BTC, M=Mn, Ni, Co) were prepared under hydrothermal conditions and used as highly efficient catalysts for cycloaddition of CO₂ with epichlorohydrin (ECH). The microstructure and physicochemical properties of the compounds were determined by PXRD, FT-IR, XPS, N₂-adsorption, TG-DSC, NH₃-TPD and CO₂-TPD. 98.01% conversion of ECH and 96.05% selectivity to chloropropene carbonate was obtained over the Mn-BTC

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