P30: Oxydeshydrogenation of ethylbenzene over sandwich-type heteropolyoxometalates

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Abstract:

Heteropolyoxometalates (POMs) are multifunctional materials and have been widely used in analytical and clinical chemistry, catalysis (including photocatalysis), biochemistry, medicine (antiviral, and even anti-HIV activity), and solid-state devices owing to their unique combination of physical and chemical properties.

Many "sandwich-type" heteropolytungstophosphates having the general formula B-α-$[M^{II}_4(H_2O)_2(PW_9O_{34})_2]^{10-}$, M = Fe, Co, Cu and Mn are easily obtained in aqueous solution by reaction of appropriate amounts of the tri- lacunary Keggin anion B-α-$[PW_9O_{34}]^{9-}$ and transition metal ions and characterized by IR, UV–Vis, and X-ray diffraction (XRD) patterns confirm the existence of Keggin anions.They were tested as catalysts in the oxydeshydrogenation of ethylbenzene by using CO_2 or N_2O as oxidising agent.

Keywords: hetropolyoxometalates, sandwich-type, IR, DRX