

Room Temperature Heterogeneously Catalyzed Efficient Oxidative Dehydrogenation of Amines to Nitriles by a Hydrated Supported Ruthenium Catalyst in Air

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An efficient solid supported heterogeneous catalyst $\text{Ru}(\text{OH})_x/\text{MnO}_2$ was developed for oxidative dehydrogenation of amines at room temperature. A wide range of substrates including aromatic, aliphatic, and hetero-atomic amines were afforded to the corresponding nitriles selectively under air atmosphere as a green oxidant. This hydrated ruthenium catalyst can be easily separated by simple workup and reused for at least 10 times without losing its catalytic activity under the reaction conditions.