

Highly Efficient Selective Oxidation of Alcohol with a Heterogeneous Supported Ruthenium Catalyst at Room Temperature and in Air

Muhammad Asif Hussain, 황승규, 김정원*

강원대학교

(jwemye@kangwon.ac.kr*)

Selective alcohol oxidation has been achieved by using inexpensive and simply prepared supported ruthenium catalyst ($\text{Ru(OH)}_x/\text{MnO}_2$) at room temperature in the presence of air. A wide variety of substrates including aromatic, hetero-atomic and allylic alcohols were converted to the desired products in excellent yield and selectivity using hexane as a cheap solvent without any additive such as inorganic bases. In addition, non-activated alcohols like alicyclic, primary and secondary aliphatic ones were selectively oxidized to the corresponding aldehydes or ketones at moderate or room temperature. The $\text{Ru(OH)}_x/\text{MnO}_2$ catalyst is easily separable and reusable for at least 10 times for benzyl alcohol without reducing its catalytic activity.