

## Ruthenium Catalyst for Effective Heterogeneous Oxidation of Amines with Air and at Room Temperature

김정원\*

강원대학교

(jwemye@kangwon.ac.kr\*)

Oxidative functional transformation of amines is significant in organic synthesis and industry because the corresponding imines or nitriles are widely used as synthetic intermediates. An efficient heterogeneous liquid phase catalytic method for aerobic oxidation of amine has been developed by a supported ruthenium hydroxide ( $\text{Ru}(\text{OH})_x/\text{MnO}_2$ ) which is easily prepared and inexpensive to use. The oxidation reactions of amines to the corresponding nitriles and imines proceed at room temperature and in air without stoichiometric amounts of harmful oxidants such as dichromate and permanganate. The  $\text{Ru}(\text{OH})_x/\text{MnO}_2$  catalyst showed high selectivity and yield for the oxidation of various substrate scopes like aromatic, aliphatic, and heteroatomic amines under the reaction condition. The catalyst/product could be simply separated and the catalysis was intrinsically heterogeneous. The recovered catalyst was reused for several times with retention of its catalytic activity and selectivity.