

Partial oxidation of naphthalene to naphthol over CuFe_2O_4 catalyst

김용수, 이용걸^{1,†}

단국대학교; ¹단국대학교 화학공학과

(yolee@dankook.ac.kr[†])

Naphthol is widely used as chemical sources or additives in medicines, dyes, perfumes, and antioxidants. Currently, naphthol is mainly produced by sulfonation/alkali-fusion from naphthalene, and this process, however, is time-consuming and can produce toxic byproducts causing environmental pollution. Thus, direct hydroxylation of naphthalene to naphthol has attracted much attention. A highly active nanostructured copper-iron oxide (CuFe) catalyst has been synthesized for direct oxydation of naphthalene to naphthol under mild reaction conditions. The catalysts were characterized by XRD, SEM, EDX, XAFS and N_2 physisorption. The influence of the reaction conditions such as types of solvent, reaction time, and amount of H_2O_2 oxidant, were investigated. The activity tests results indicated that the CuFe outperformed single metal oxide catalysts. Under optimized conditions, the activity test over CuFe catalyst resulted in naphthalene conversion of 25% with naphthol selectivity of 63%.