

Catalytic Activity of CO oxidation on
 $M/Ce_{1-x}Cu_xO_{2-\delta}$ (M=Pt, Pd, Cu, and Ni)

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As automobiles increase year by year, environmental pollution becomes a serious issue due to the exhaust gases. Among them, CO is a main exhaust gas of automobiles which is fatal to people. It is therefore required to develop high performance CO conversion catalysts. Particularly, CeO_2 has been widely studied because it has made great contribution as a support in CO oxidation. Thus, in order to improve the CO oxidation, we doped or impregnated the CeO_2 with several metals. First, by comparing $M/Ce_{1-x}Cu_xO_{2-\delta}$ with M/CeO_2 , the interaction was identified between Cu doped into CeO_2 and metal particles impregnated on CeO_2 . There was no difference between M/CeO_2 and $M/Ce_{1-x}Cu_xO_{2-\delta}$ in XRD data because the Cu was doped into the lattice of ceria. However, we found that the catalytic activity increases on Cu-doped CeO_2 or metal particles impregnated onto CeO_2 by using GC. Moreover, their combinations that are metal particles impregnated onto Cu-doped CeO_2 further increased the CO oxidation activity. Especially, $Cu/Ce_{1-x}Cu_xO_{2-\delta}$ showed high activity, which was the similar activity to noble metals on $Ce_{1-x}Cu_xO_{2-\delta}$.