

Positional Influence of the doped noble metals in the Perovskite Structured Catalysts for Energy and Environmental Applications

전유권<sup>†</sup>  
연세대학교 환경공학부  
(ykjeon@yonsei.ac.kr<sup>†</sup>)

Perovskite structured materials ( $ABO_3$ ) are widely considered as materials in a wide range of fields. Basically, perovskites are stable at heat/redox environments and have good coke/sulfur resistances, which suit in catalysis for energy and environmental applications. The activity of the perovskite catalysts can be tuned by incorporating active metals as cations into the B site in the frameworks under oxidizing conditions. Therefore, it is important to control the amount of dopants and to design a proper perovskite structure from the variations of A and B sites, in order to fit these dopants well into the lattice. As catalysis taking place on the surface, metals have been generally loaded on to the surface of a carefully designed support. By tailoring the doped perovskites, it is possible that the active metals are partly emerged as nanoparticles on the oxide surface by subsequent reductions. This novel catalyst feature provides great distribution and unique morphology of the active sites, which affects catalytic performance. In addition, the strong metal-support interaction helps to prevent metal sintering under certain reaction conditions for the various catalytic applications.