

### Cyclic operation characteristics of MMO catalyst in the removal of lean NO<sub>x</sub> and N<sub>2</sub>O

양기선, 한아름, 팽소산, 현재영, 장길상\*  
상명대학교 신환경연구소  
(kschang@smu.ac.kr\*)

Climate change has become the most serious problem which we are environmentally confronting these days. NO<sub>x</sub> and N<sub>2</sub>O are components causing global warming effect more than CO<sub>2</sub> and are greatly emitted from fuel combustion systems. Though there are known some technologies like NH<sub>3</sub> SCR, it is still not easy to remove NO<sub>x</sub> and N<sub>2</sub>O efficiently when O<sub>2</sub> is present. In this presentation, we are introducing an MMO catalyst AFC111 which has shown remarkable performance in the removal of NO<sub>x</sub> and N<sub>2</sub>O when used as a trap for NO<sub>x</sub> and N<sub>2</sub>O in the presence of O<sub>2</sub>. NO and N<sub>2</sub>O are adsorbed first displaying higher selectivity compared with O<sub>2</sub>, and then they are desorbed by CO. The catalyst was operated cyclically with transient mode. As a result of this cyclic operation, it may be concluded that the catalyst has been proved as an excellent LNT material and the reduction efficiency was getting higher and higher by cutting cycle time.