

### Characteristics of Pt-BaO/Hydrotalcite Catalysts for NO<sub>x</sub> Storage-Reduction Reaction

정소연, 유영석, 김도희\*  
서울대학교  
(dohkim@snu.ac.kr\*)

To remove NO<sub>x</sub> more effectively, NO<sub>x</sub> Storage Reduction (NSR) technology is being used as one of the potential methods. In this study, we used hydrotalcite-derived Mg/Al mixed oxides as support materials for NSR catalysts instead of  $\gamma$ -Al<sub>2</sub>O<sub>3</sub> which is commonly used in NSR catalysts. Hydrotalcite (HT) was prepared by applying co-precipitation method with the Mg/Al ratios of 1:9, 2:8, 3:7, 4:6, 5:5 and 6:4. Hydrotalcite was then calcined at 800 °C and used as NSR catalyst support. Pt and BaO were loaded by using incipient wetness impregnation method to produce Pt(2wt%)-BaO(20wt%)/(Al<sub>2</sub>O<sub>3</sub> or HT) catalysts. All prepared catalysts were calcined at 500 °C, 650 °C and 800 °C, and the NO<sub>x</sub> storage activity of the catalysts was examined. In summary, HT-supported catalysts showed superior NO<sub>x</sub> storage performance compared with Al<sub>2</sub>O<sub>3</sub>-supported catalyst even after high temperature treatment, especially Mg/Al ratio is 4:6. Such superior property can be explained by the role of Mg which aids in improving Pt dispersion and inhibiting sintering of Pt.