

Cu/CeO<sub>2</sub> as an Additive to a Conventional Pt-BaO/CeO<sub>2</sub> catalyst for Low-temperature Lean NO<sub>x</sub> Trap

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NO<sub>x</sub> removal efficiency was investigated with a combination of Cu/CeO<sub>2</sub> (CC) and a model Pt-BaO/CeO<sub>2</sub> (PBC) catalysts in lean NO<sub>x</sub> trap operation. NO<sub>x</sub> removal is greatly improved at 150°C and 200°C by physically mixing the two catalysts. The enhancement of low-temperature activity of the PBC+CC mixture is attributed to the beneficial effects of CC on fundamental reactions (NO oxidation, NO<sub>x</sub> storage, and water-gas shift) in LNT catalysis. The significant role of CC is to produce efficient amount of H<sub>2</sub> in rich condition, resulting in the facilitated reduction of stored NO<sub>x</sub>.