

Development of Ag/CuO-CeO<sub>2</sub> catalyst for  
soot oxidation

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CeO<sub>2</sub> has been used for soot oxidation due to its high oxygen storage-released capacity. The activity of CeO<sub>2</sub> could be greatly improved not only by precious metals, but also by rare earth metals and transition metals. CuO-CeO<sub>2</sub> catalyst has been reported to show enhanced activity for several oxidation reactions. However, CuO-CeO<sub>2</sub> catalyst in soot oxidation needs to be studied further. Thus, we introduced CuO-CeO<sub>2</sub> based catalysts and investigated the way to improve their activity for soot oxidation.

Ag is effective for O<sub>2</sub> dissociation and CeO<sub>2</sub> bulk oxygen utilization, improving the active oxygen generation of the Ag/CeO<sub>2</sub>. We prepared and examined a series of Ag/CuO-CeO<sub>2</sub> catalysts with different Cu amounts. Through catalytic activity tests and characterizations of the catalysts for soot oxidation, the effect of Ag and Cu was verified. Ag supported on CuO-CeO<sub>2</sub> showed the enhanced activity soot oxidation, and the relation with the properties of the catalyst will be discussed.