

Effect of HCl and SO₂ on mercury oxidation over CuCl₂-loaded SCR catalyst in SCR process

홍현조, 함성원*, 김문현¹, 이승민², 이정빈²
경일대학교; ¹대구대학교; ²전력연구원
(swham@kiu.ac.kr*)

This study was addressed to develop a catalyst for simultaneous removal of mercury and NO in SCR process. The activity of CuCl₂-loaded V₂O₅-WO₃/TiO₂ catalyst for mercury oxidation was significantly increased with the increase of CuCl₂ loadings. In particular, compared to commercial V₂O₅-WO₃/TiO₂ SCR catalyst, the enhancement of activity of CuCl₂-loaded catalyst for Hg⁰ was more apparent under SCR condition than oxidation condition. However, the activity for Hg⁰ oxidation was depressed by the addition SO₂ and dependent on the relative concentrations of HCl and SO₂. To understand the effect of HCl and SO₂ on mercury oxidation, the catalysts obtained after various reaction conditions including HCl and SO₂ were characterized by a variety of analyses using ICP, XRF, XPS and XRD.