



第200回触媒化学研究センター談話会

講演者: Dr. Mickaël Capron

(Laboratoire de Catalyse de Lille, France)

演 題: Methanol conversion over alumina supported
oxomolybdate : *an Operando* spectroscopic study.

日 時: 2006年2月6日(月) 15:30 - 16:45

会 場: 北海道大学創成科学研究棟 04-213・214

要 旨:

The oxidation of methanol has been studied on Mo/Al₂O₃ catalyst in absence and presence of oxygen. Raman spectroscopies, EPR and XAS were used to follow the evolution of the active phase under reaction conditions. An increase of reduced species on the active phase is observed by Raman spectroscopy in parallel with a deactivation of the redox properties of the catalyst. EPR and XAS experiments show the transformation of Mo^{VI} to Mo^V and its accumulation in absence of oxygen. Selectivity toward oxidation products is drastically affected by the accumulation of Mo^V species on the active phase. Oxygen addition to the reaction mixture leads to a decrease of the amount of Mo^V and a partial restoration of the oxidative properties of the catalyst. The presence of Mo^V during the course of the reaction shows that a polymolybdate phase is required to perform methanol oxidation.

Keywords: Methanol oxidation, Operando spectroscopy, XAS, XPS, LRS, EPR.

《連絡先》 北大触媒化学研究センター 機能材料設計分野
上田 渉 (011-706-9164)