

Influence of the modification and surface area of the TiO₂ support on the CO oxidation activity of mesoporous Au/TiO₂ catalysts

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Abstract

The influence of the TiO₂ modification and of the surface area on the activity and stability / deactivation behavior of structurally well-defined mesoporous Au/TiO₂ catalysts with comparable Au loading in the CO oxidation reaction was investigated by kinetic measurements under differential reaction conditions and by *in-situ* DRIFTS. The TiO₂ modification and surface area were controlled by the pH and the type of the structure directing surfactants applied in the synthesis, Au loading of the mesoporous oxides was performed by the same deposition-precipitation procedure for all catalysts. The resulting trends in the CO oxidation behavior, including the TOF based activities and the stability (deactivation behavior), are discussed.

Keywords: *Mesoporous catalysts, Activity, Deactivation, Au/TiO₂, CO oxidation*

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