

Selective oxidation of glucose versus CO oxidation over supported gold catalysts

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Abstract

Two series of gold catalysts supported on TiO₂, SiO₂, and CeO₂ have been prepared by colloidal gold deposition with 2 wt% of nominal gold loading. The diameter of gold particle stabilized by polyvinylalcohol (PVA) or by tannic acid- citrate was 5-7 nm and 7-13 nm, respectively, after calcinations in air. Catalytic activities were investigated and compared in both CO oxidation and glucose oxidation reactions. According to the literature the small size of the gold particles appears to be the most important parameter in CO oxidation and glucose oxidation, as well. Our CO oxidation results fit to the literature data whereas in glucose oxidation inverse results were obtained. Besides the high dispersion the nature of the support seems to play a significant role in the liquid phase reaction.