Abstract

The aim of this work was to obtain ceria-based catalysts with improved oxidation properties by adding tin dioxide (5, 10 and 20 wt %) and using the co-precipitation method of preparation. The samples were characterized by BET, ESEM, and DRIFT spectroscopy. The activity of SnO_2-CeO_2 catalytic systems in CO oxidation was studied between room temperature to 673 K. It was found that the increase of SnO_2 content obviously increases the low temperature CO conversion. However, at 673 K all the samples reach almost the same conversion of around 98-99%. The surface acidity was studied by NH_3 adsorption in order to better understand the mechanism of CO transformation to CO_2.

Key words: CO oxidation, morphology, NH_3 pulse chemisorptions, SnO_2-CeO_2 co-precipitated catalyst