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In the present work the effect of surface modification by rhodium on the conductivity response of the SnO_2 films to reducing gases such as CO and H_2 and oxidizing gas ozone was analyzed. SnO_2 films, subjected to surface modification, were deposited by spray pyrolysis, while Rh was deposited using a micro electron beam evaporation. The thickness of the Rh coating varied in the range of 0–0.1 ML. It was found that there is an optimal thickness of Rh, which gives an improvement in the sensor response and a decrease in the recovery time. An explanation of the observed effects was proposed. It was assumed that the atomically dispersed state of rhodium is most active in gas–sensing effects. The transformation from the atomic state to the cluster state reduces the efficiency of the surface functionalization of SnO_2 with rhodium.