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In this paper, we have analyzed the effect of the rhodium surface modification on the surface state of SnO₂ films. SnO₂ films, subjected for the surface modification, were deposited by spray pyrolysis, while Rh was deposited by using a microelectron beam evaporation. The thickness of the Rh coating varied in the range 0 to 0.1 monolayer. An explanation of the observed effects was proposed. Basing on the results of X-ray photoelectron spectroscopy, it was assumed that at a small thickness of the rhodium covering, Rh was in a the well-dispersed state, close to atomically dispersed state. The growth in the size of the nanoparticles began mainly when the thickness of the Rh covering exceeded 0.01 monolayer. The size of clusters did not exceed 0.5 to 1.0 nm.