

KINETICS OF THE PROCESSES OF CATALYTIC CO OXIDATION

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S u m m a r y

We have investigated the kinetics of the processes of catalytic CO oxidation. The stationary points of the model are found, and the analysis of their stability in the time evolution of the equations of chemical kinetics is carried out. It is revealed that, at intermediate CO pressures, the system has two stable points, so it is in the bistable state. The condition of the existence of a bifurcation region for the model is analytically found. We have deduced the equation for the critical value of pressure p_{CO}^c , at which the first-order phase transition from a reactive state with medium O coverage to an inactive state, where the surface is predominantly covered by CO, is occurred. The results obtained are compared with those of the lattice-gas reaction model in the mean-field approximation.