BRINZARI, V., KOROTCENKOV, G.Kinetic approach to receptor function in chemiresistive gas sensor modeling of tin dioxide. Steady state consideration.In:Sensors and Actuators B. 2018, Vol. 259, pp. 443–454.ISSN 0925-4005.

Kinetic approach in phenomenological modeling of SnO_2 chemiresistive gas sensor is proposed. It is based on a new perception of chemisorbed oxygen forms and consistent account of main reaction rates into a balance equation of particles on (110) surface. So-called receptor function was considered for dry and humid atmosphere and in the presence of CO. Transducer function was calculated within an electron filtering model. Numerical simulation of the surface coverage by oxygen and major gas sensing characteristics of SnO_2 within 150–600 °C temperature range showed sufficient agreement with experimental behavior of nanocrystalline SnO_2-based sensors. Model allows interpretation of some of the important features in these characteristics.