

Hexagon platinum Schottky contact with ZnO thin film for hydrogen sensing

Abstract

This paper reports on the study of the effect on adding total peripheries and sharp edges to the Schottky contact as a hydrogen sensor. Schottky contact was successfully designed and fabricated as hexagon-shape. The contact was integrated together with zinc oxide thin film and tested towards 1% hydrogen gas. Simulations of the design were conducted using COMSOL Multiphysics to observe the electric field characteristic at the contact layer. The simulation results show higher electric field induced at sharp edges with 4.18×10^4 V/m. Current-voltage characteristic shows 0.27 V voltage shift at 40 μ A biased current.

Keywords

Electrode; Hexagon-shape; Hydrogen sensor; Schottky diode; Zinc Oxide