ABSTRACT
In this work, we investigate the electrical properties of oxide layer in the metal-oxide semiconductor field effect transistor (MOSFET). The thickness of oxide layer is proportional to square root of oxidation time. The feature of oxide layer thickness on the growth time is consistent with the Deal-Grove model effect. From the current-voltage measurement, it is found that the threshold voltages (Vt) for MOSFETs with different oxide layer thicknesses are proportional to the square root of the gate-source voltages (Vgs). It is also noted that threshold voltage of MOSFET increases with the thickness of oxide layer. It indicates that the bulk effect of oxide dominates in this MOSFET structure.

Keywords: oxide layer, threshold voltage, MOSFET

REFERENCES