The properties of oxide layer in the semiconductor

Jung-Chuan Fan, Tsung-Che Lee, Li-Ying Lee, Shih-Fong Lee
E-mail: sflee@mail.dyu.edu.tw

ABSTRACT

In this work, the effect of oxide layer thickness on the I-V characteristics of metal-oxide-semiconductor field effect transistor (MOSFET) is thoroughly investigated. From the current-voltage measurement, it is found that the threshold voltage (Vt) of MOSFET is proportional to the square root of the gate-source voltages (VGS) regardless of the thickness of oxide layer. It is also noted that threshold voltage of MOSFET increases linearly with the thickness of oxide layer. It indicates that the bulk effect of oxide dominates in this MOSFET structure.

Keywords: threshold voltage, oxide layer, MOSFET

REFERENCES