EFFECT OF RADİATION STRESS ON C-V AND G-V CHARACTERİSTİCS OF
Au/SnO₂/n-Si MIS STRUCTURE

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The radiation effect of Capacitance-Voltage (C-V) and Conductance-Voltage (G-V) characteristics of Au/SnO₂/n-Si have been investigated at room temperature. After irradiated to 1, 3 and 10 kGy C-V and G-V curves were measured by using a HP 4192A LF impedance analyser. Applied small signal bias was 50 mVₚ-ₚ and 10kHz. The C-V curves were translated along the applied gate bias-axis in the negative direction with increasing doses of the radiation. The G/w-V curve in depletion region shows a peak and this peak shifted towards to accumulation region with increasing doses of the radiation. This behaviour attributed to an order of magnitude higher density of interface states in the MIS diode. The series resistance is calculated from the admittance measurements when MIS diode is biased in accumulation (+3V) [1] for the test devices irradiated to 1, 3 and 10 kGy were 67, 60 and 39Ω, respectively. In addition, diffusion potential V_D and barrier height Φ_B were decreased with increasing doses of radiation. Such behaviours have been observed by several author [2-4].

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