



## THE EFFECTS OF MOS LAYERS ON SENSING PROPERTIES OF MOS PHOTODIODE

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**Abstract-** *In this research work, many samples of metal –oxide –silicon photo-sensors were laboratory prepared by thermal evaporation techniques. Some silicon samples were left in the air for a predefined time for SiO<sub>2</sub> to grow naturally, while others were thermally coated with measured thickness of SiO. A number of the samples were coated with nickel while others with aluminum and one sample was coated with indium. Various tests and measurements were conducted; these include transmittance tests with a range of wavelength and for different thicknesses. The ideality factors of the samples and the potential barrier height were calculated from I-V and C-V characteristics. The photo-generated current of the samples were also measured at photoconductive mode under reverse voltage. Quantum efficiency measurement indicated that native oxide samples provided higher quantum efficiency than those thermally deposited samples. Detectivity measurement showed that thermally deposited oxide samples had low detectivity as compared to native oxide samples*

**Index terms:** Schottky Barrier diode, Photosensor, MOS Photosensor, Silicon Photo-sensor: