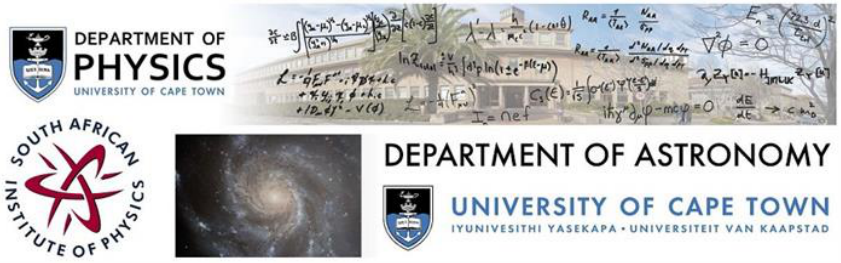

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High energy electron irradiation influence on the Schottky barrier hieght and the Richardson constant on Pd/ZnO Schottky barrier diodes

Tuesday, 5 July 2016 16:10 (1h 50m)

Abstract content
   (Max 300 words)
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The influence of high energy electron (HEE) irradiation from Sr-90 radio-nuclide on Pd/ZnO samples has been investigated over the temperature range of 80-350 K. Current-voltage (IV), capacitance-voltage (CV) and deep level transient spectroscopy (DLTS) were used characterize the devices before and after irradiation. For both devices, the IV characteristics were well described by thermionic emission (TE) in the high temperatures but deviated from TE theory at low temperatures. The current flowing through the interface at a bias of 2.0 V from pure TE to Thermionic field emission (TFE) within the depletion region with the free carrier concentration of the devices decreases after HEE irradiation. The modified Richardson constants were determine from the Gaussian distribution of the barrier height across the contacts. New defects appeared after HEE irradiation.

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