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Temperature dependence of the capture cross section for the E3 defect in Ir/ZnO Schottky contacts

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Abstract content
   (Max 300 words)

We report on the temperature dependence of the capture cross-section observed in the E3 defect in Ir/ZnO Schottky contacts. Conventional DLTS measurements reveal an estimated activation enthalpy of 0.30eV. The peak height of the DLTS peaks show a significant dependence on the rate window used. From the temperature dependence of the capture cross-section,a capture barrier energy of 38meV has been calculated. The apparent capture cross-section for the E3 peak has been obtained as 1.0 ×10⁻¹⁴cm² while the true capture cross-section has been calculated as 7.3×10⁻¹² cm². Saturation of the E3 defect is observed with a filling pulse of width 200ms. The variation of the peak height with rate window for the E3 peak is due to the temperature dependence of the capture cross-section.

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Prof F. D. Auret, email: danie.auret@up.ac.za
Institution: University of Pretoria

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Primary author: Mr MTANGI, Wilbert (University of Pretoria)

Co-authors: Prof. AURET, F. D (University of Pretoria); Dr NEL, J. M (University of Pretoria); Dr DIALE, M (University of Pretoria); Mr JANSE VAN RENSBURG, P. J. J (University of Pretoria); Dr MEYER, W. E (University of Pretoria)

Presenter: Mr MTANGI, Wilbert (University of Pretoria)

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