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Document Title : *Analysis of credit for measurements of thermal capacity and effort on pairs*
تحليل الاعتماد الحراري لقياسات السعة والجهد على ثنائيات شوتكي من زرنيخيد الجاليوم

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Abstract : An analysis of capacitance-voltage- temperature (C-V-T) data has been performed on epitaxially grown GaAs Schottky diodes. Doping density, doping profile and built-in potential have been determined from experimental results. Built-in potential between 250K and 300K is found to be temperature independent and has a value between 0.75V and 0.8 V. This is in good agreement with reported values for GaAs Schottky diodes and is also consistent with the forward drop determined experimentally for these diodes. The built-in potential decreases with temperature above 300K and becomes as low as 0.25 V at 375 K. This behaviour cannot, be explained on the basis of the simple theory of Schottky diodes. A model for Schottky barrier has been suggested which incorporates the combined action of surface states and deep traps. All the experimental observations can be satisfactorily explained qualitatively on the basis of this model

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