

## **Microstructural and surface characterization of thin gold films on n-Ge (1 1 1)**

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### **Abstract**

Thin gold films were fabricated by vacuum resistive deposition on the n-Ge (1 1 1) wafers. The films were annealed between 300 and 600 °C. These resulting thin films were then characterised using scanning electron microscopy (field emission and back-scattering modes), Rutherford back scattering spectroscopy and time of flight secondary ion mass spectroscopy (TOF-SIMS). For temperatures below the eutectic temperature the distribution of both the gold and the germanium on the surface are uniform. Above the eutectic temperature, the formation of gold rich islands on the surface of the Germanium were observed. These changes in the microstructure were found to correspond to changes in the electrical characteristics of the diodes.