Contribution ID: **403** Type: **Poster Presentation**

Schottky contact on GaN

Thursday, 14 July 2011 17:00 (2 hours)

<p>Metal Au, Ni and Ni/Au contacts on n-GaN were studied for metal contacts for the fabrication of Shottky barrier ultraviolet photodetectors. AES, RBS and current-voltage measurements were used to study the samples. Figure 2 shows the current voltage mechanism of Au, Ni and Ni/Au transparent contacts onto GaN. The Schottky barrier heights of Au contacts were averaged at 0.84 ± 0.02 eV and the ideality factors of 1.7 ± 0.3. Series resistance for these contacts was about 481 ± 4 Ω. Ni contacts onto GaN are dominated by tunneling currents and the leakage current is higher than that of Au. The Schottky barrier heights of Ni contacts were averaged at 0.82 ± 0.04 eV and the ideality factors of 1.9 ± 0.2. Series resistance for these contacts was about 38 ± 1 Ω, far less than that of Au contacts. Ni/Au contacts are annealed at 500 ℃ for transparency. The leakage current of Ni/Au is two orders of magnitude lower than that of Ni and Au, and the Schottky barrier height was averaged at 2.04 ± 0.01 eV for ideality factors of about 1.6 ± 0.4.

Level (Hons, MSc,
   PhD, other)?

other

Consider for a student
   award (Yes / No)?

No0

Would you like to
 submit a short paper
 for the Conference
 Proceedings (Yes / No)?

Yes

Primary author: Dr DIALE, Mmantsae (University of Pretoria)

Presenter: Dr DIALE, Mmantsae (University of Pretoria)

Session Classification: Poster2

Track Classification: Track F - Applied and Industrial Physics