



Contribution ID: 403

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## Schottky contact on GaN

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

Metal Au, Ni and Ni/Au contacts on n-GaN were studied for metal contacts for the fabrication of Schottky 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  $0.84 \pm 0.02$  eV and the ideality factors of  $1.7 \pm 0.3$ . Series resistance for these contacts was about  $481 \pm 4 \Omega$ . 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  $0.82 \pm 0.04$  eV and the ideality factors of  $1.9 \pm 0.2$ . Series resistance for these contacts was about  $38 \pm 1 \Omega$ , far less than that of Au contacts. Ni/Au contacts are annealed at  $500^\circ\text{C}$  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  $2.04 \pm 0.01$  eV for ideality factors of about  $1.6 \pm 0.4$ .

**Level (Hons, MSc, <br> &nbsp; PhD, other)?**

other

**Consider for a student <br> &nbsp; award (Yes / No)?**

No

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

Yes

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