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Schottky contact on GaN

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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 ± 0.02 eV and the ideality factors of 1.7 ± 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 ± 0.04 eV and the ideality factors of 1.9 ± 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°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 ± 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)?**

No

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

Yes

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