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Comparison of the effects of annealing on Ni/Au and Ni/Ir/Au Schottky photodiodes

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Abstract content
   (Max 300 words)

In this study a comparison of the electrical and optical properties of Ni/Au and Ni/Ir/Au Schottky photodiodes based on Al_{0.35}Ga_{0.65}N were investigated. The photodiodes were characterised as deposited and after annealing at 500 deg;C under an Ar ambient. The electrical and optical properties of these samples improved with annealing temperatures. The Schottky barrier heights for the Ni/Au Schottky diodes were measured as 0.913 and 1.264 eV for as deposited and 500 deg;C annealed diodes respectively.
The barrier heights of the Ni/Ir/Au Schottky photodiodes were found to be 2.18 eV for as deposited and 1.90 eV after 500 deg;C annealing. The transmission of UV radiation through the Ni/Au layer was higher than through the Ni/Ir/Au which contributed to the responsivity of the Ni/Au photodiode being higher. In general the Ni/Au photodiode produced better electrical and optical characteristics in comparison to the Ni/Ir/Au photodiode when subjected to similar annealing conditions.

Apply to be
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Yes

Level for award
 (Hons, MSc,
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MSc

Main supervisor (name and email)
and his / her institution

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Would you like to
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Yes

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