Abstract Submitted
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Photocurrent spectroscopy of GaAs/GaP hetero-structured nanowires[1] P. KUMAR, H.E. JACKSON, L.M. SMITH, University of Cincinnati, OH, USA, J. YARRISON RICE, Miami University, Oxford, OH, USA, J.H. KANG, Q. GAO, H.H. TAN, C. JAGADISH, The Australian National University, Canberra, ACT 0200, Australia — We study the photocurrent from photoexcited charge carriers in GaAs/GaP axial and radial hetero-structured nanowires (NWs). These NWs are grown using Metal-Organic Chemical Vapor Deposition (MOCVD) in [111]B direction with Au nano-particles as catalysts. As grown axial GaAs/GaP NWs are sonicated in methanol and dispersed on Si-SiO insulated substrate. Photolithography followed by Ti/Al (20nm/300nm) metal evaporation and lift-off is used to fabricate contacts in Metal-semiconductor-metal across single NW. Spatial imaging of photocurrent at different wavelengths distinguishes the GaP and GaAs regions in these NWs. Peak photocurrent is observed around GaP region for light wavelengths $\sim$ 458nm whereas peak photocurrent is shift towards GaAs region for light wavelength $\sim$ 800nm. Photocurrent measurements in GaAs/GaP strained core-shell NWs are in progress.

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