

Abstract Submitted
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GaN-Based Heterojunction Structures for Simultaneous Detection of Ultraviolet/Infrared Radiation¹ R. JAYASINGHE, G. ARIYAWANSA, N. DIETZ, A.G.U. PERERA, Georgia State University, S. MATSIK, NDP Optronics LLC, I. FERGUSON, Georgia Institute of Technology, S. LAFRAMBOISE, A. BEZINGER, M. BUCHANAN, H.C. LIU, National Research Council, Canada — Ultraviolet and infrared (UV/IR) dual-band photodetectors have potential applications in various areas, such as fire/flame detection, solar astronomy, military sensing, situational awareness applications, and combustion process monitoring. Since GaN-based UV/IR detectors do not respond to solar or artificial visible lighting, the false detection rate is strongly reduced. Use of a single detector for detecting UV/IR can also eliminate the difficulties of operating several individual detectors with separate electronics and cooling mechanisms. Here, we report a dual-band detector which simultaneously detects UV (250 – 360 nm) and IR (5 – 14 μm) regions, showing near zero spectral crosstalk. This allows the detection of both UV and IR incident radiation, separately identifying the relative strength of each photocurrent component. Further improvements for the detector are also discussed.

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