## **Supporting Information**

## High Responsivity, Low Dark Current Ultraviolet Photodetectors based on Two-dimensional Electron Gas Interdigitated Transducers

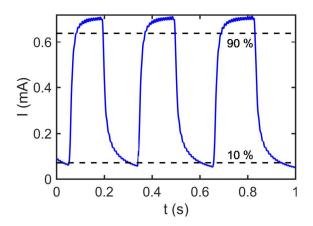
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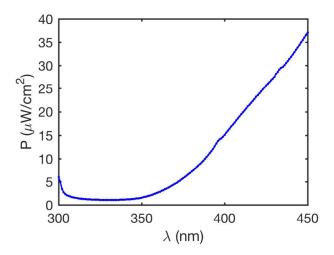
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**Figure S1**. Response time of a 2DEG-IDT photodetector passivated with ~20 nm of ALD-Al<sub>2</sub>O<sub>3</sub> dielectric to ~0.2 mW/cm<sup>2</sup> 365 nm illumination chopped at ~5 Hz. The rise and fall times are ~30 ms and ~100 ms, respectively, comparable to measurements of devices without alumina.



**Figure S2**. Incident power vs. wavelength calibration curve for Setup II. Incident power was measured using a Hamamatsu S1223 photodetector.