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(54) **BIAS TRIGGERED MODE-SWITCHABLE
PHOTODETECTOR FROM BROADBAND TO
NEAR INFRARED**

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ABSTRACT

A photodetector diode may have a first electrode and a silicon substrate having an n-type black silicon (b-Si) structure formed thereon. The silicon substrate may be at least partially disposed on the first electrode. A junction layer coating may be applied to the b-Si structure. The photodetector diode may have a second electrode positioned on top of the junction layer. The second electrode being transparent.

