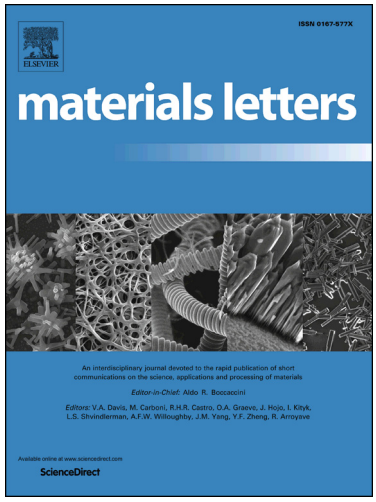


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# Near-infrared photodetector based on Schottky junctions of monolayer graphene/GeOI

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**ABSTRACT**

The peculiar properties of the large absorption coefficient at near-infrared frequencies as well as their high mobility in germanium enable promising applications in photodetection. Schottky junctions based near-infrared photodetectors were fabricated by integrating monolayer graphene film with germanium membranes stacking on silicon oxide substrates (i.e., GeOI). The device exhibits a strong photovoltaic behavior, giving rise to high responsivity and detectivity of ~62.1 $mAW^{-1}$ and ~$2.1\times10^{11}$ $cmHz^{1/2}W^{-1}$, respectively. Time-response results indicate that