

PHOTODETECTOR, PHOTOELECTRIC SENSOR, METHODS OF FORMING THE SAME AND DETERMINING CONCENTRATION

ABSTRACT

Various embodiments may relate to a photodetector including a doped gallium nitride (GaN) layer over one or more aluminum gallium nitride (AlGaN) layers. The photodetector may additionally include a first mesa structure on a first portion of the doped gallium nitride (GaN) layer, and a second mesa structure spaced from the first mesa structure and on a second portion of the doped gallium nitride (GaN) layer. The first mesa structure may include a first undoped gallium nitride (GaN) layer on the doped gallium nitride (GaN) layer, and a first aluminum gallium nitride (AlGaN) layer on the first undoped gallium nitride (GaN) layer. The second mesa structure may include a second undoped gallium nitride (GaN) layer on the doped gallium nitride (GaN) layer, and a second aluminum gallium nitride (AlGaN) layer on the second undoped gallium nitride (GaN) layer. The photodetector may also include a first electrode and a second electrode.

FIG. 1