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(54) **LIGHT-EMITTING DIODE COMPRISING A SEMICONDUCTOR BASED ON ALN P-DOPED WITH MAGNESIUM ATOMS AND A LAYER OF DOPED DIAMOND**

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(57) **ABSTRACT**

A light-emitting diode may include: a first n-doped semiconductor portion; a second p-doped semiconductor portion; an active zone disposed between the first and second portions and including at least one emitting semiconductor portion; a layer that is electrically conductive and optically transparent to at least one wavelength of the UV range configured to be emitted from the emitting portion, the layer being such that the second portion is disposed between the layer and the active zone. The semiconductors of the first portion and of the emitting portion may include compounds including nitrogen atoms as well as atoms of aluminum and/or of gallium. The semiconductor of the second portion may include $Al_{X2}Ga_{(1-X2-Y2)}In_{Y2}N$ that is p-doped with magnesium atoms, wherein X2>0, Y2>0, and X2+Y2<1, and in which the atomic concentration of magnesium is greater than 10^{17} at/cm^3. The electrically conductive layer may include doped diamond.