

ABSTRACT**PHOTODETECTOR COMPRISING A PHOTONIC CRYSTAL STRUCTURE
OPTICALLY COUPLED TO AN ACTIVE LAYER HAVING AN IMPROVED
QUANTUM EFFICIENCY**

The invention relates to a photodetector comprising a support layer (10), a grating structure
5 (20), and an active layer (30). The grating structure (20), referred to as photonic crystal
structure, comprises a structured layer (22) formed of patterns (22.1) and of a continuous
sub-layer (22.2) of non-zero constant thickness e_{ccs} , the patterns (22.1) widening along a
direction towards the continuous sub-layer (22.2). Further, the photonic crystal structure (20)
has dimensions such that the structured layer (22) forms a photonic crystal which supports
10 at least one guided mode capable of being excited by the incident light radiation of interest,
the photonic crystal being optically coupled to the active layer (30) so that the guided mode
is optically confined in the structured layer (22) and the active layer (30).

[FIG 2A]