

Title (en)

OPTOELECTRONIC DEVICE WITH AXIAL THREE-DIMENSIONAL LIGHT-EMITTING DIODES

Title (de)

OPTOELEKTRONISCHE VORRICHTUNG MIT AXIALEN DREIDIMENSIONALEN LEUCHTDIODEN

Title (fr)

DISPOSITIF OPTOÉLECTRONIQUE À DIODES ÉLECTROLUMINESCENTES TRIDIMENSIONNELLES DE TYPE AXIAL

Publication

EP 4264684 A1 20231025 (FR)

Application

EP 21839933 A 20211215

Priority

- FR 2013521 A 20201217
- EP 2021086030 W 20211215

Abstract (en)

[origin: WO2022129250A1] The present description relates to an optoelectronic device (10) comprising an array (15) of axial light-emitting diodes (LED) each comprising an active region (20) configured so as to emit electromagnetic radiation whose emission spectrum comprises a maximum at a first wavelength. The device further comprises, for each light-emitting diode, a sleeve (23) transparent to said radiation and made of a first material, surrounding the lateral walls of the light-emitting diode over at least part of the light-emitting diode, each sleeve having a thickness greater than 10 nm. The device further comprises, between the sleeves, a layer (24) transparent to the radiation and made of a second material, different from the first material, the second material being electrically insulating, the array forming a photonic crystal.

IPC 8 full level

H01L 33/18 (2010.01); **H01L 27/15** (2006.01); **H01L 33/00** (2010.01); **H01L 33/08** (2010.01); **H01L 33/44** (2010.01)

CPC (source: EP KR US)

H01L 27/156 (2013.01 - EP KR US); **H01L 33/0093** (2020.05 - KR US); **H01L 33/08** (2013.01 - KR); **H01L 33/10** (2013.01 - US); **H01L 33/18** (2013.01 - EP KR US); **H01L 33/44** (2013.01 - EP KR US); **H01L 33/0093** (2020.05 - EP); **H01L 33/08** (2013.01 - EP); **H01L 2933/0083** (2013.01 - EP KR US)

Citation (search report)

See references of WO 2022129250A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

Designated validation state (EPC)

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DOCDB simple family (application)

EP 2021086030 W 20211215; CN 202180084186 A 20211215; EP 21839933 A 20211215; FR 2013521 A 20201217; JP 2023537134 A 20211215; KR 20237021206 A 20211215; TW 110147394 A 20211217; US 202118267071 A 20211215