

Title (en)

METHOD FOR PRODUCING A DEVICE COMPRISING A LAYER OF III-N MATERIAL WITH SURFACE DEFECTS

Title (de)

VERFAHREN ZUR HERSTELLUNG EINER VORRICHTUNG MIT EINER SCHICHT AUS III-N-MATERIAL MIT OBERFLÄCHENDEFEKTEN

Title (fr)

PROCEDE DE FABRICATION D'UN DISPOSITIF COMPRENANT UNE COUCHE DE MATERIAU III-N AVEC DES DEFAUTS DE SURFACE

Publication

**EP 3555924 A1 20191023 (FR)**

Application

**EP 17822597 A 20171211**

Priority

- FR 1662492 A 20161215
- EP 2017082283 W 20171211

Abstract (en)

[origin: WO2018108840A1] The invention relates to a method for producing a device comprising at least one layer made of III-N semiconductor material having crystal-growth surface defects and a substrate, the method comprising: - depositing a barrier layer made of a second III-N material on the surface of a layer of a first III-N semiconductor material, said second III-N material having a larger gap between the valence band and the conduction band than the gap between the valence band and the conduction band of the first III-N material; - depositing at least two layers of different dielectric materials on the surface of said semiconductor material layer made of III-N material and filling said crystal-growth surface defects; - a "CMP" etching operation defining an assembly of materials; and - producing at least one contact at the surface of said assembly of materials. The device can be a transistor. The method can advantageously comprise a plurality of depositions of dielectric materials which can be SiN and SiO<sub>2</sub>.

IPC 8 full level

**H01L 21/306** (2006.01); **H01L 21/762** (2006.01); **H01L 29/06** (2006.01); **H01L 29/34** (2006.01)

CPC (source: EP)

**H01L 21/76224** (2013.01); **H01L 21/76229** (2013.01); **H01L 29/34** (2013.01); **H01L 29/66462** (2013.01); **H01L 29/7786** (2013.01); **H01L 21/31053** (2013.01); **H01L 29/2003** (2013.01)

Citation (search report)

See references of WO 2018108840A1

Designated contracting state (EPC)

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