

Title (en)

METHOD FOR PRODUCING A III-N MATERIAL LAYER

Title (de)

VERFAHREN ZUR HERSTELLUNG EINER III-N-MATERIALSCHICHT

Title (fr)

PROCÉDÉ DE RÉALISATION D'UNE COUCHE À BASE DE MATÉRIAUX III-N

Publication

**EP 4268266 A1 20231101 (FR)**

Application

**EP 21840633 A 20211222**

Priority

- FR 2013977 A 20201222
- EP 2021087380 W 20211222

Abstract (en)

[origin: WO2022136588A1] The invention relates to a method for producing at least one nitride layer (550) made of a first III-N material, the method comprising the following consecutive steps: - providing a stack comprising a support substrate (100) and a plurality of pads (1000A1-1000B4), each pad comprising at least: one crystalline base section (300) made of silicon; and a crystalline germination section (500) made from a second III-N material and supported by the base section, - selectively modifying the base section so as to form a modified base section (310) which is not as rigid as the base section prior to modification, - epitaxially growing a crystallite (510A1-510B4) from the top (1010) of at least some of the pads and continuing the epitaxial growth of crystallites until coalescence of the crystallites, so as to form the nitride layer (550) on all the pads (1000A1-1000B4).

IPC 8 full level

**H01L 21/02** (2006.01); **H01L 27/15** (2006.01); **H01L 33/00** (2010.01); **H01L 33/02** (2010.01); **H01L 33/12** (2010.01)

CPC (source: EP US)

**H01L 21/02381** (2013.01 - EP US); **H01L 21/0243** (2013.01 - EP US); **H01L 21/02458** (2013.01 - EP US); **H01L 21/0254** (2013.01 - EP US); **H01L 21/02592** (2013.01 - US); **H01L 21/02639** (2013.01 - EP US); **H01L 21/0265** (2013.01 - EP US); **H01L 33/007** (2013.01 - EP); **H01L 27/156** (2013.01 - EP); **H01L 33/007** (2013.01 - US); **H01L 33/025** (2013.01 - EP); **H01L 33/12** (2013.01 - EP)

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)

KH MA MD TN

DOCDB simple family (publication)

**FR 3118304 A1 20220624**; **FR 3118304 B1 20230623**; EP 4268266 A1 20231101; US 2024038532 A1 20240201; WO 2022136588 A1 20220630

DOCDB simple family (application)

**FR 2013977 A 20201222**; EP 2021087380 W 20211222; EP 21840633 A 20211222; US 202118258380 A 20211222