

Title (en)

METHOD FOR THE PRODUCTION OF III-V- NITRIDE-CONDUCTOR-BASED SEMICONDUCTOR LAYERS

Title (de)

VERFAHREN ZUR HERSTELLUNG VON HALBLEITERSCHICHTEN AUF III-V-NITRIDHALBLEITER-BASIS

Title (fr)

PROCEDE DE PRODUCTION DE COUCHES A SEMI-CONDUCTEURS A BASE DE SEMI-CONDUCTEURS AU NITRURE III-V

Publication

EP 1425784 A1 20040609 (DE)

Application

EP 02760146 A 20020902

Priority

- DE 0203221 W 20020902
- DE 10142656 A 20010831

Abstract (en)

[origin: WO03025988A1] The invention relates to the production of low-defect III-V-nitride-conductor-material-based semiconductor layers. According to the inventive method, a substrate made of a non- III-V-nitride-conductor-material is initially provided and a mask layer (2) is applied thereto in order to form masked areas (2a, 2b) and non-masked areas (2c) on said substrate. The III-V-nitride-semiconductor layer(3) is then formed from the non-masked areas (2c) of the substrate (1). In order to prevent tension-induced cracks from occurring during the cooling phase of the forming temperature to room temperature, the mask layer (2) is formed on the substrate (1) in such a way that some of the masked areas (2b) are sufficiently wide as to prevent the III-V-nitride -semiconductor layer (3) from being formed over said masked areas (2b), whereupon the III-V-nitride-semiconductor layer is exclusively formed over the remaining thin masked areas (2a).

IPC 1-7

H01L 21/20; **H01L 33/00**; **H01L 21/033**; **C23C 16/04**; **C23C 16/30**; **C30B 29/40**

IPC 8 full level

H01L 21/205 (2006.01); **C23C 16/04** (2006.01); **C23C 16/30** (2006.01); **C30B 25/02** (2006.01); **H01L 21/033** (2006.01); **H01L 21/20** (2006.01); **H01L 33/00** (2010.01)

CPC (source: EP US)

C23C 16/042 (2013.01 - EP US); **C23C 16/303** (2013.01 - EP US); **C30B 25/02** (2013.01 - EP US); **C30B 29/403** (2013.01 - EP US); **C30B 29/406** (2013.01 - EP US); **H01L 21/0237** (2013.01 - EP US); **H01L 21/02472** (2013.01 - EP US); **H01L 21/0254** (2013.01 - EP US); **H01L 21/02639** (2013.01 - EP US); **H01L 21/02642** (2013.01 - EP US); **H01L 21/02647** (2013.01 - EP US); **H01L 21/0334** (2013.01 - EP US); **H01L 33/007** (2013.01 - EP US); **Y10S 438/933** (2013.01 - EP US)

Citation (search report)

See references of WO 03025988A1

Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LI LU MC NL PT SE SK TR

DOCDB simple family (publication)

WO 03025988 A1 20030327; DE 10142656 A1 20030327; EP 1425784 A1 20040609; JP 2005503037 A 20050127; US 2004266157 A1 20041230; US 6927155 B2 20050809

DOCDB simple family (application)

DE 0203221 W 20020902; DE 10142656 A 20010831; EP 02760146 A 20020902; JP 2003529512 A 20020902; US 48837904 A 20040823