Title (en)

METHOD FOR THE PRODUCTION OF A MONOCRYSTALLINE LAYER ON A SUBSTRATE WITH A NON-ADAPTED LATTICE AND COMPONENT CONTAINING ONE OR SEVERAL SUCH LAYERS

Title (de)

VERFAHREN ZUR HERSTELLUNG EINER EINKRISTALLINEN SCHICHT AUF EINEM NICHT GITTERANGEPASSTEM SUBSTRAT, SOWIE EINE ODER MEHRERE SOLCHER SCHICHTEN ENTHALTENDES BAUELEMENT

Title (fr)

PROCEDE DE PRODUCTION D'UNE COUCHE MONOCRISTALLINE SUR UN SUBSTRAT SANS ADAPTATION DE RESEAU, ET COMPOSANT COMPORTANT AU MOINS UNE TELLE COUCHE

Publication

EP 1051740 A1 20001115 (DE)

Application

EP 99907288 A 19990127

Priority

- DE 9900203 W 19990127
- DE 19802977 A 19980127

Abstract (en)

[origin: DE19802977A1] Production of a single crystal layer on a non-lattice-matched single crystal substrate involves forming a buried defect-rich layer in the substrate. An Independent claim is also included for a component, particularly a blue diode based on a single crystal GaN layer on a sapphire substrate or a transistor, especially a modulated doped field effect transistor (ModFET), with one or more layers produced by the above process. Preferred Features: The buried layer is formed extremely close to the substrate surface, without affecting the surface structure, especially by hydrogen implantation before or after deposition of the surface layer. The substrate material is Si, Ge, GaAs, SiC, sapphire or InP.

IPC 1-7

H01L 21/20; H01L 21/205

IPC 8 full level

C30B 23/02 (2006.01); **H01L 21/20** (2006.01); **H01L 21/265** (2006.01)

CPC (source: EP US)

C30B 23/02 (2013.01 - EP US); **C30B 29/52** (2013.01 - EP US); **H01L 21/0237** (2013.01 - EP US); **H01L 21/02381** (2013.01 - EP US); **H01L 21/02532** (2013.01 - EP US); **H01L 21/02631** (2013.01 - EP US); **H01L 21/02658** (2013.01 - EP US); **H01L 21/02694** (2013.01 - EP US); **H01L 21/26506** (2013.01 - EP US); **H01L 21/2654** (2013.01 - US)

Citation (search report)

See references of WO 9938201A1

Cited by

CN100465356C

Designated contracting state (EPC)

BE DE FR GB NL

DOCDB simple family (publication)

DE 19802977 A1 19990729; EP 1051740 A1 20001115; US 6464780 B1 20021015; WO 9938201 A1 19990729

DOCDB simple family (application)

DE 19802977 A 19980127; DE 9900203 W 19990127; EP 99907288 A 19990127; US 60080200 A 20000829