

Title (en)

METHOD FOR SYNTHESISING TWO-DIMENSIONAL MATERIALS

Title (de)

VERFAHREN ZUM SYNTHEZIEREN ZWEIDIMENSIONALER MATERIALIEN

Title (fr)

MÉTHODE DE SYNTHÈSE DE MATERIAUX BIDIMENSIONNELS

Publication

EP 3697940 A1 20200826 (FR)

Application

EP 18786362 A 20181022

Priority

- FR 1701097 A 20171020
- EP 2018078832 W 20181022

Abstract (en)

[origin: WO2019077158A1] The invention relates to a method for producing at least one monolayer (L) of a two-dimensional material (Mat2D), said two-dimensional material consisting of an element B and an element N, which are boron and nitrogen respectively, and said method comprising: - a step (100) of supplying element B and a step (200) of supplying element N so as to form, in a substrate (LB, Sub, Lmet), a zone (Z[B+N]) which comprises atoms of element B and atoms of element N, and - an annealing step (300) for forming the at least one monolayer (L) of two-dimensional material (mat2D) by means of diffusing the aforementioned atoms in said substrate, wherein at least one supply step out of the step (100) for supplying element B and the step (200) for supplying element N occurs by means of ion implantation.

IPC 8 full level

C23C 14/48 (2006.01); **C23C 14/00** (2006.01); **C23C 14/02** (2006.01); **C23C 14/06** (2006.01); **C23C 14/58** (2006.01); **H01J 37/317** (2006.01); **H01L 21/02** (2006.01); **H01L 21/3115** (2006.01); **H01L 29/24** (2006.01); **H01L 29/66** (2006.01)

CPC (source: EP)

C23C 14/0623 (2013.01); **C23C 14/48** (2013.01); **C23C 14/5806** (2013.01); **H01L 21/0242** (2013.01); **H01L 21/0254** (2013.01); **H01L 21/02631** (2013.01); **H01L 21/7624** (2013.01); **B82Y 30/00** (2013.01); **C23C 14/0005** (2013.01); **C23C 14/024** (2013.01); **C23C 14/025** (2013.01); **C23C 14/5813** (2013.01); **H01L 29/20** (2013.01); **H01L 29/66977** (2013.01)

Citation (examination)

- CN 105779961 A 20160720 - XU MINGSHENG
- O'NEAL J E ET AL: "Crystallography of epitaxially grown molybdenum on sapphire", THIN SOLID FILMS, ELSEVIER, AMSTERDAM, NL, vol. 23, no. 3, 1 October 1974 (1974-10-01), pages 363 - 380, XP025698213, ISSN: 0040-6090, [retrieved on 19741001], DOI: 10.1016/0040-6090(74)90020-0
- See also references of WO 2019077156A1

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

DOCDB simple family (publication)

WO 2019077158 A1 20190425; EP 3697940 A1 20200826; EP 3697941 A1 20200826; FR 3072687 A1 20190426; FR 3072687 B1 20240510; WO 2019077156 A1 20190425

DOCDB simple family (application)

EP 2018078840 W 20181022; EP 18786362 A 20181022; EP 18786363 A 20181022; EP 2018078832 W 20181022; FR 1701097 A 20171020