

Title (en)

METHOD FOR MANUFACTURING AN ELECTRONIC JUNCTION DEVICE AND ASSOCIATED DEVICE

Title (de)

VERFAHREN ZUR HERSTELLUNG EINER ELEKTRONISCHEN VERBINDUNGSVORRICHTUNG UND ZUGEHÖRIGE VORRICHTUNG

Title (fr)

PROCÉDÉ DE FABRICATION D'UN DISPOSITIF À JONCTION ÉLECTRONIQUE ET DISPOSITIF ASSOCIÉ

Publication

EP 3347921 A1 20180718 (FR)

Application

EP 16775803 A 20160907

Priority

- FR 1558267 A 20150907
- FR 2016052228 W 20160907

Abstract (en)

[origin: WO2017042486A1] The invention concerns a method for manufacturing an electronic junction device, the electronic junction device (3) comprising a thin-layer surface passivation structure (10, 20) on a surface (1, 2) of a crystalline silicon substrate (4), the surface passivation structure (10, 20) having a determined thickness and comprising at least one thin layer (11, 12, 21, 22) of an amorphous or microcrystalline hydrogenated silicon. According to the invention, the manufacturing method comprises the following steps: a) ion irradiation of the surface passivation structure (10, 20) with an ion beam (30), avoiding the generation of defects in the crystalline substrate during said irradiation; and b) following said ion irradiation step a), thermal annealing of the substrate (4) and of the surface passivation structure (10, 20) at a temperature included in a range extending from 175°C to 530°C, thermal annealing step b) being carried out in the ambient air, under vacuum or in a gaseous atmosphere, and the duration of thermal annealing step b) being of between a few minutes and a few hours. An electronic junction device obtained according to said method is also described.

IPC 8 full level

H01L 31/0216 (2014.01); **H01L 31/0747** (2012.01); **H01L 31/18** (2006.01)

CPC (source: EP)

H01L 31/02167 (2013.01); **H01L 31/0747** (2013.01); **H01L 31/1804** (2013.01); **H01L 31/1864** (2013.01); **H01L 31/1868** (2013.01); **Y02E 10/547** (2013.01); **Y02P 70/50** (2015.11)

Citation (examination)

J.W.A. SCH?TTAUF ET AL: "Improving the performance of amorphous and crystalline silicon heterojunction solar cells by monitoring surface passivation", JOURNAL OF NON-CRYSTALLINE SOLIDS., vol. 358, no. 17, 1 September 2012 (2012-09-01), NL, pages 2245 - 2248, XP055286492, ISSN: 0022-3093, DOI: 10.1016/j.jnoncrysol.2011.12.063

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)

FR 3040822 A1 20170310; **FR 3040822 B1 20180223**; EP 3347921 A1 20180718; WO 2017042486 A1 20170316

DOCDB simple family (application)

FR 1558267 A 20150907; EP 16775803 A 20160907; FR 2016052228 W 20160907