

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

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Application

**EP 16775803 A 20160907**

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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

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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

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