

Title (en)

METHOD FOR MANUFACTURING AN N-TYPE MONOCRYSTALLINE SILICON INGOT

Title (de)

VERFAHREN ZUR HERSTELLUNG EINES MONOKRISTALLINEN N-TYP-SILICIUM-BARREN

Title (fr)

PROCEDE DE FABRICATION D'UN LINGOT DE SILICIUM MONOCRISTALLIN DE TYPE N

Publication

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Application

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Abstract (en)

[origin: WO2016075092A1] The present invention relates to a method for manufacturing an n-type monocrystalline silicon ingot, with monitored concentration of oxygen-based thermal donors, comprising at least the following steps: (i) providing a bath of molten silicon comprising one or more n-type doping agents, said bath being supplemented at least with germanium (Ge) and/or tin (Sn) with levels that are adapted such as to inhibit the formation of all or part of the thermal donors in the expected silicon ingot; and (ii) drawing the silicon ingot from the bath of step (i) by a Czochralski drawing method, the initial drawing speed  $V_1$  being reduced to a speed  $V_2 = V_1/b$ , wherein  $b$  is between 10 and 1.2, when the solidified silicon fraction  $f_s$  reaches a predetermined critical value. The invention also relates to a monocrystalline silicon ingot obtained according to said method and to the use thereof for manufacturing a photovoltaic cell by a low-temperature method.

IPC 8 full level

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