

Abstract:**A method and an apparatus for growing a silicon single crystal from a melt**

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The invention disclosure relates to a method and an apparatus for growing a silicon single crystal from a melt. The method comprises providing the melt in a crucible;

imposing a horizontal magnetic field on the melt having a magnetic induction B at a field center C ;

10 directing a gas between the silicon single crystal and a heat shield to a melt free surface, and

controlling the gas to flow over a region of the melt free surface which extends in a direction substantially

15 perpendicular to the magnetic induction B .

The apparatus comprises a crucible for holding the melt;

a heat shield surrounding the silicon single crystal, the heat shield having a lower end which is connected to a bottom cover facing a melt free surface and having a non-axisymmetric shape

20 with respect to a crucible axis M , such that a gas which is directed between the silicon single crystal and the heat shield to the melt free surface is forced by the bottom cover to flow over a region of the melt free surface which extends in a direction substantially perpendicular to the magnetic induction

25 B .