

Title (en)

METHOD FOR MANUFACTURING A SILICON-CARBIDE-BASED SEMICONDUCTOR STRUCTURE AND INTERMEDIATE COMPOSITE STRUCTURE

Title (de)

VERFAHREN ZUR HERSTELLUNG EINER HALBLEITERSTRUKTUR AUF SILICIUMCARBIDBASIS UND VERBUNDZWISCHENSTRUKTUR

Title (fr)

PROCEDE DE FABRICATION D'UNE STRUCTURE SEMI-CONDUCTRICE A BASE DE CARBURE DE SILICIUM ET STRUCTURE COMPOSITE INTERMEDIAIRE

Publication

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Application

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Abstract (en)

[origin: WO2022189733A1] The invention relates to a method for manufacturing a semiconductor structure, comprising: a) a step of providing a temporary substrate made of a material having a coefficient of thermal expansion close to that of silicon carbide; b) a step of forming an intermediate graphite layer on a front face of the temporary substrate; c) a step of depositing, on the intermediate layer, a polycrystalline silicon carbide support layer having a thickness of between 10 microns and 200 microns, d) a step of transferring a useful monocrystalline silicon carbide layer onto the support layer, directly or via an additional layer, in order to form a composite structure, said transfer using molecular adhesion bonding, e) a step of forming an active layer on the useful layer, f) a step of disassembly at an interface of or inside the intermediate layer, in order to form the semi-conductive structure including the active layer, the useful layer and the support layer, and to form the temporary substrate. The invention likewise relates to a composite structure obtained at an intermediate step of the method.

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