

PROCESS FOR FABRICATING A SUBSTRATE FOR THE EPITAXIAL GROWTH OF A LAYER OF A III-N ALLOY BASED ON GALLIUM

Abstract

The invention relates to a process for fabricating a substrate for the epitaxial growth of a layer of III-N alloy based on gallium, comprising the following successive steps:

- providing a single-crystal semi-insulating silicon-carbide donor substrate (10),
- implanting ionic species into the donor substrate (10) so as to form a weakened region (12) that defines a thin layer (11) of single-crystal semi-insulating SiC to be transferred,
- bonding the donor substrate (10) to a first receiver substrate (20) via a bonding layer (21),
- detaching the donor substrate (10) along the weakened region (12) so as to transfer the thin layer (11) of single-crystal semi-insulating SiC to the first receiver substrate (20),
- forming an additional layer (13) of semi-insulating SiC on the transferred thin layer (11),
- bonding the additional layer (13) to a second receiver substrate (40) having a high electrical resistivity,
- removing at least one portion of the bonding layer (21) so as to detach the first receiver substrate (20) and uncover the transferred layer (11) of single-crystal semi-insulating SiC.

Figure 8