

METHOD FOR PRODUCING A SEMICONDUCTOR-ON-INSULATOR MULTILAYER STRUCTURE

Abstract

The invention relates to a method for producing a semiconductor-on-insulator structure (1) comprising the steps of: - joining a support substrate (2) having an electrical resistivity greater than or equal to 500 $\Omega\cdot\text{cm}$ and containing interstitial nitrogen (6) and interstitial oxygen (7), the initial concentration of interstitial oxygen (6) in the support substrate (2) being between 15 and 25 old ppm, and a donor substrate of a semi-conducting layer (4), an electrically insulating layer (3) being at the interface between the support substrate (2) and the donor substrate; and - transferring said semiconductor layer (4) onto the support substrate, the method further comprising a nucleation step comprising a heat treatment in order to precipitate part of the oxygen (7) and nitrogen (6) so as to form nuclei (9) of precipitates (8), and a stabilisation step comprising a heat treatment in order to grow said nuclei to a size of between 10 and 50 nm.

[Fig. 2F]