

ABSTRACT

PROCESS FOR OBTAINING A THIN LAYER OF INCREASED QUALITY BY CO-IMPLANTATION AND THERMAL ANNEALING

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The invention relates to a process for producing a structure comprising a thin layer of semiconductor material on a substrate, comprising the following stages:

- 5 • carrying out implantation of species under a face of a donor substrate from which the thin layer must be made, so as to create an embrittlement zone in the thickness of the donor substrate,
- placing the face of the donor substrate in close
10 contact with a support substrate, after it has undergone implantation,
- detaching the donor substrate at the embrittlement zone, to transfer a part of the donor substrate onto the support substrate and form the thin layer on the
15 latter,

characterised in that:

- the implantation stage carries out a co-implantation of at least two different atomic species so as to minimise the low-frequencies roughnesses at the level
20 of the structure obtained after detachment;
- and the process further comprises a finishing step comprising at least one rapid thermal annealing operation so as to minimise the high-frequencies roughnesses at the level of the structure obtained
25 after detachment.

Figure 1