

ABSTRACT OF THE DISCLOSURE

**METHOD FOR DETERMINING A SUITABLE IMPLANTING ENERGY IN A
DONOR SUBSTRATE AND PROCESS FOR FABRICATING A STRUCTURE OF
SEMICONDUCTOR-ON-INSULATOR TYPE**

The invention concerns a method for determining a suitable implanting energy of at least two atomic species in a donor substrate (30) to create a weakened zone (31) defining a monocrystalline semiconductor layer (32) to be transferred onto a receiver substrate (10), comprising the following steps:

- (i) forming a dielectric layer on at least one of the donor substrate (30) and the receiver substrate (10);
- (ii) co-implanting said species in the donor substrate (30);
- (iii) bonding the donor substrate (30) on the receiver substrate (10);
- (iv) detaching the donor substrate (30) along the weakened zone (31) to transfer the monocrystalline semiconductor layer (32) and recover the remainder (34) of the donor substrate;
- (v) inspecting the peripheral crown of the remainder (34) of the donor substrate, or of the receiver substrate (10) on which the monocrystalline semiconductor layer (32) was transferred at step (iv);
- (vi) if said crown exhibits zones transferred onto the receiver substrate, determining the fact that the implanting energy at step (ii) is too high;
- (vii) if said crown does not exhibit zones transferred onto the receiver substrate, determining the fact that the implanting energy at step (ii) is suitable.

Fig. 5