ABSTRACT

PROCESS FOR FABRICATING A SILICON-ON-INSULATOR STRUCTURE

The invention relates to a process for fabricating a silicon-on-insulator structure comprising the following steps:

(a) providing a donor substrate (31) and a support substrate (1), only one of said substrates being covered with an oxide layer (2);

(b) forming, in the donor substrate (31), a weak zone (32);

(c) plasma activating said oxide layer (2);

(d) bonding the donor substrate (31) to the support substrate (1) in a partial vacuum;

(e) implementing a bond-strengthening anneal at a temperature of 350°C or less causing the donor substrate (31) to cleave along the weak zone (32); and

(f) carrying out a heat treatment at a temperature above 900°C - the transition from the temperature of step (e) to that of step (f) being achieved at a ramp rate above 10°C/s.

Figure 4C