SOI SUBSTRATE AND METHOD FOR MANUFACTURING THE SAME

ABSTRACT OF THE DISCLOSURE

To provide an SOI substrate having a high mechanical strength, and a method for manufacturing the SOI substrate, a single crystal semiconductor substrate is irradiated with accelerated ions so that an embrittled region is formed in a region at a predetermined depth from a surface of the single crystal semiconductor substrate; the single crystal semiconductor substrate is bonded to a base substrate with an insulating layer interposed therebetween; the single crystal semiconductor substrate is heated to be separated along the embrittled region, so that a semiconductor layer is provided over the base substrate with the insulating layer interposed therebetween; and a surface of the semiconductor layer is irradiated with a laser beam so that at least a superficial part of the semiconductor layer is melted, whereby at least one of nitrogen, oxygen, and carbon is solid-dissolved in the semiconductor layer.

Figure 1E