DESCRIPTION

~~BONDED SOI WAFER MANUFACTURING METHOD~~

TECHNICAL FIELD

[0001]

The present invention relates to a method for manufacturing a bonded SOI wafer by an ion implantation delamination method, and more particularly to a method for manufacturing a bonded SOI wafer by bonding a silicon single crystal wafer into which ions such as hydrogen ions are implanted to a base wafer, i.e., a support substrate, and a portion of the silicon single crystal wafer is then delaminated.

BACKGROUND ART

[0002]

An ion implantation delamination method (also referred to as the Smart Cut method (registered trademark)), involving bonding a bond wafer into which ions are implanted and delaminating a portion of the bond wafer, is one of methods that has recently begun to receive attention for manufacturing a bonded SOI wafer. The ion implantation delamination method is an art (See Patent Document 1) to form a bonded wafer having a thin film (an SOI layer) over a base wafer in the following manner: An oxide film is formed on at least one of two wafers, and gas ions, such as hydrogen ions and rare gas ions, are implanted from a front surface of one of the wafers (the bond wafer) to form a micro bubble layer (an sealed layer) in the interior of the wafer. The surface from which the ions are implanted is then brought into close contact with the other wafer (a base wafer)

DESCRIPTION

# METHOD FOR MANUFACTURING BONDED SOI WAFER

## TECHNICAL FIELD

[0001]

The present invention relates to a method for manufacturing a bonded SOI wafer by an ion implantation delamination method, and more particularly to a method for manufacturing a bonded SOI wafer by bonding a silicon single crystal wafer into which ions such as hydrogen ions are implanted to a base wafer, i.e., a support substrate, and a portion of the silicon single crystal wafer is then delaminated.

## BACKGROUND ART

[0002]

An ion implantation delamination method (also referred to as the Smart Cut method (registered trademark)), involving bonding a bond wafer into which ions are implanted and delaminating a portion of the bond wafer, is one of methods that has recently begun to receive attention for manufacturing a bonded SOI wafer. The ion implantation delamination method is an art (See Patent Document 1) to form a bonded wafer having a thin film (an SOI layer) over a base wafer in the following manner: An oxide film is formed on at least one of two wafers, and gas ions, such as hydrogen ions and rare gas ions, are implanted from a front surface of one of the wafers (the bond wafer) to form a micro bubble layer (an sealed layer) in the interior of the wafer. The surface from which the ions are implanted is then brought into close contact with the other wafer (a base wafer)