

ABSTRACT

In a method of forming an SOI substrate, an etch stopper layer, a semiconductor layer, a buried insulation layer and a first bonding
5 insulation layer may be sequentially formed on an upper surface of a donor wafer to form a donor wafer structure. A second bonding insulation layer may be formed on an upper surface of a carrier wafer to form a carrier wafer structure. The donor wafer structure may be bonded on the carrier wafer structure to form a bonding structure in
10 which the first and second bonding insulation layers face each other. After the donor wafer is grinded, the remaining donor wafer is stripped. The etch stopper layer may be removed using a plasma cleaning gas including NF_3 to expose the semiconductor layer. A surface of the exposed semiconductor layer may be treated to have a uniform
15 thickness.

FIG. 1

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