Abstract

METHOD FOR FABRICATING COMPLEMETARY SILICON ON INSULATOR DEVICES USING WAFER BONDING

A method to form a silicon on insulator (SOI) device using wafer bonding. A first substrate is provided having an insulating layer over a first side. A second substrate is provided having first isolation regions (e.g., STI) that fill first trenches in the second substrate. Next, we bond the first and second substrate together by bonding the insulating layer to the first isolation regions and the second substrate. Then, a stop layer is formed over the second side of the second substrate. The stop layer and the second side of the second substrate are patterned to form second trenches in the second substrate. The second trenches have sidewalls at least partially defined by the isolation regions and the second trenches expose the second insulating layer. The second trenches define first active regions over the first isolation regions (STI) and define second active regions over the insulating layer. Next, the second trenches are filled with an insulator material to from second isolation regions. Next, the stop layer is removed. Lastly, devices are formed in and on the active regions.

FIGURE 6



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