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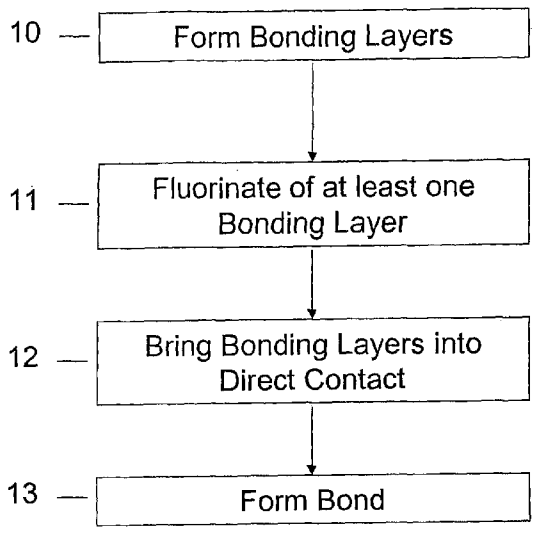
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(54) Title: METHOD OF ROOM TEMPERATURE COVALENT BONDING




(57) Abstract: A method of bonding includes using a bonding layer having a fluorinated oxide. Fluorine may be introduced into the bonding layer by exposure to a fluorine-containing solution, vapor or gas or by implantation. The bonding layer may also be formed using a method where fluorine is introduced into the layer during its formation. The surface of the bonding layer is terminated with a desired species, preferably an $NH_2$ species. This may be accomplished by exposing the bonding layer to an $NH_4OH$ solution. High bonding strength is obtained at room temperature. The method may also include bonding two bonding layers together and creating a fluorine distribution having a peak in the vicinity of the interface between the bonding layers. One of the bonding layers may include two oxide layers formed on each other. The fluorine concentration may also have a second peak at the interface between the two oxide layers.

WO 2004/105084 A2

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