# NITROGEN-PLASMA SURFACE TREATMENT IN A DIRECT BONDING METHOD

Two wafers, each having on a surface thereof a thin silicon or silicon oxide film, are bonded by subjecting the thin film of at least one wafer to a surface treatment forming a thin silicon oxynitride surface film with a thickness of less than 5 nm. The thin film is formed by means of a nitrogen-based plasma, generated by an inductively coupled plasma source. In addition, the potential difference between the plasma and a substrate holder supporting said wafer, during the surface treatment, is less than 50 V, advantageously less than 15 V and preferably zero. This makes it possible to obtain a defect-free bonding interface irrespective of the temperature of any heat treatment carried out after the contacting step.

Fig. 1