A METHOD OF DIRECT BONDING TWO SUBSTRATES USED IN ELECTRONICS, OPTICS, OR OPTOELECTRONICS

A B S T R A C T

The invention relates to a method of direct bonding the front faces (11, 21) of two substrates (1, 2) for use in electronics, optics, or optoelectronics, at least one of the substrates comprising a layer of semiconductor material (1, 13, 2, 20, 23) that extends over its front face (11, 21) or in the proximity thereof. The method is remarkable in that it comprises the following steps consisting in:

· subjecting at least the front face (11, 21) of the substrate comprising a semiconductor or at least one of the front faces (11, 21) of the two substrates if both substrates comprise a semiconductor, to preparation heat treatment prior to bonding, at a temperature lying in the range 900°C to 1200°C, in a gaseous atmosphere comprising hydrogen and/or argon, and for a duration of at least 30 s; and

· bonding directly together said respective front faces (11, 21) of the two substrates (1, 2) for bonding together.

Fig. 1A