GLASS ARTICLES AND METHODS FOR CONTROLLED BONDING OF GLASS SHEETS WITH CARRIERS

ABSTRACT

Surface modification layers (30) and associated heat treatments, that may be provided on a sheet (20), a carrier (10), or both, to control both room-temperature van der Waals (and/or hydrogen) bonding and high temperature covalent bonding between the thin sheet and carrier. The room-temperature bonding is controlled so as to be sufficient to hold the thin sheet and carrier together during vacuum processing, wet processing, and/or ultrasonic cleaning processing, for example. And at the same time, the high temperature covalent bonding is controlled so as to prevent a permanent bond between the thin sheet and carrier during high temperature processing, as well as maintain a sufficient bond to prevent delamination during high temperature processing.
(Fig. 1)