Even in the case of the spray coating, gas inclusions occur again and again, for example because of the roughness of the surfaces. This roughness is a direct result of the individual, agglomerating droplets on the surface of the substrate.

Embodiments of this invention indicate a method with which the bonding result is improved and which can be used universally.

According to an aspect, there is provided a method for bonding a lower substrate with an upper substrate by means of a connecting layer arranged between the lower substrate and the upper substrate, the connecting layer formed of a connecting material, wherein the method comprises: holding the lower substrate to a first receiving device; holding the upper substrate to a second receiving device; depositing the connecting material in liquid form to the lower substrate or the upper substrate by a centrifugal coating method or a spray coating method to form a coating of the connecting material thereon, said coating being distributed relatively uniformly on the lower substrate or the upper substrate; distributing the connecting material between the lower substrate and the upper substrate by bringing the lower and upper substrates closer to each other, wherein the distributing takes place automatically by capillary action of the connecting material; and releasing the lower substrate from the first receiving device and/or the upper substrate from the second receiving device after distributing the connecting material between the lower and upper substrates, thereby forming the shape of the connecting layer with a thickness t, wherein an amount of the connecting material distributed between the lower and upper substrates is sufficient to form the connecting layer without excess connecting material overflowing a peripheral edge of at least one of the lower and upper substrates.

All combinations of at least two of the features indicated in the specification, the claims and/or the figures also fall within the scope of the invention. In the indicated ranges of values, values as boundary values that lie within the above-mentioned limits are also to be considered as disclosed and can be claimed in any combination.

The basic idea of embodiments of this invention is to apply a connecting material as a liquid, in particular a polymer, even more preferably a permanent adhesive, between two substrates, in such a way that the liquid is distributed at least partially, preferably predominantly, automatically, in particular exclusively by linear movement of one or two substrates toward one another, between the substrates, in particular by concentric or radially symmetric propagation. An embodiment of the invention consists in particular in applying the connecting material in an amount that is free of excess. The embodiment that is disclosed is in particular self-regulating relative to

- A setting of the layer thickness and/or

CLAIMS:

1. A method for bonding a lower substrate with an upper substrate by means of a connecting layer arranged between the lower substrate and the upper substrate, the connecting layer formed of a connecting material, wherein the method comprises:

holding the lower substrate to a first receiving device;

holding the upper substrate to a second receiving device;

depositing the connecting material in liquid form to the lower substrate or the upper substrate by a centrifugal coating method or a spray coating method to form a coating of the connecting material thereon, said coating being distributed relatively uniformly on the lower substrate or the upper substrate;

distributing the connecting material between the lower substrate and the upper substrate by bringing the lower and upper substrates closer to each other, wherein the distributing takes place automatically by capillary action of the connecting material; and

releasing the lower substrate from the first receiving device and/or the upper substrate from the second receiving device after distributing the connecting material between the lower and upper substrates, thereby forming the shape of the connecting layer with a thickness t,

wherein an amount of the connecting material distributed between the lower and upper substrates is sufficient to form the connecting layer without excess connecting material overflowing a peripheral edge of at least one of the lower and upper substrates.

2. The method according to claim 1, wherein the amount of connecting material is preset by the thickness t of the connecting layer and a diameter of at least one of the lower and upper substrates.

3. The method according to claim 1, wherein the method further comprises applying at least one droplet of the connecting material in liquid form to the lower substrate or the upper substrate before distributing the connecting material between the lower and upper substrates.

4. The method according to claim 1, wherein the distributing of the connecting material between the lower and upper substrates and/or the bringing of the lower and upper substrates closer to each other is/are done at least partially by a capillary force of the liquid connecting material and/or by a gravitational force G acting on one of the lower and upper substrates.

5. The method according to claim 3, wherein the method further comprises:

applying a coating to a connecting surface of at least one of the lower and upper substrates and/or treating the connecting surface of at least one of the lower and upper substrates with a plasma before applying the at least one droplet of the connecting material to the lower substrate or the upper substrate.

6. The method according to claim 1, wherein the method further comprises:

hardening the connecting material provided on the lower and upper substrates during and/or after the distributing of the connecting material between the lower and upper substrates and the bringing of the lower and upper substrates closer to each other.