

It is possible to produce a homogeneous, curved fixing surface on a substrate holder by milling, grinding, polishing, etching and lapping processes, so that the substrate fixed thereon also has a homogeneous curvature. This fixing surface is however static and could not change the curvature. On the other hand, it would be possible to construct a substrate holder, which can indeed curve the fixing surface, as in publication WO 2014191033A1. With these substrate holders, however, it emerges that it is very difficult to adjust the curvature of the fixing surface and therefore the curvature of the substrate in a targeted manner as a function of location, in particular to keep it constant. Above all, the adjustment of a homogeneous curvature of the substrate is very difficult, cannot be implemented at all or at least cannot be so reproducibly.

The problem of the invention to be solved consists in removing the drawbacks of the prior art and in particular in specifying an improved substrate holder, an improved device and an improved method for bonding.

All combinations of at least two features given in the description, in the claims and/or the drawings also fall within the scope of the invention. In stated value ranges, values lying inside the stated limits are also deemed to be disclosed as limiting values and can be claimed in any combination.

It is in particular of technical importance to design a substrate holder in such a way that it curves a substrate adjustably in a targeted manner, in particular homogeneously.

A first aspect of the invention relates to a substrate holder for curving a substrate, comprising

- a fixing plate for fixing the substrate,
- curving means for curving the fixing plate,

wherein the fixing plate is constituted such that the curvature of the substrate can be adjusted in a targeted manner, wherein the fixing plate is mounted in a hinged manner.

The fixing plate has a front side, on which the substrate is fixed, and a rear side facing away from the front side. The fixing plate has a width, a length and a thickness. In another embodiment, the fixing plate is designed radially symmetrical and is then defined by a radius and a thickness. The width and the length extend in the direction of a fixing plate surface on the front side of the fixing plate, on which the substrate is fixed. The thickness extends perpendicular to the fixing plate surface.

The thickness of the fixing plate preferably varies, i.e. the thickness is not the same at every point, but rather the fixing plate is thicker at at least one point of the fixing plate than at another point. Special embodiments/preferred forms are described in the following text.

Provision is preferably made such that a homogeneous curvature of the fixing plate or of the substrate can be adjusted.

Provision is preferably made such that the fixing plate is mounted in a hinged manner.

Adjustable in a targeted manner means that the value of the curvature can be predefined. Homogeneous means that, with a predefined value of the curvature, this curvature is the same, i.e. constant, at every position of the fixing plate of the substrate, within a vanishingly small error tolerance.

The rear side of the fixing plate is preferably formed such that a homogeneous curvature of the fixing plate results or that a homogeneous, i.e. the same at every point, curvature of the fixing plate or the fixing plate front side and therefore of the substrate can be adjusted.

In a preferred embodiment, but also as an independent inventive aspect, the substrate holder is designed such that reaction forces and/or moments produced during the curving of the fixing plate can be compensated by at least one compensation means.

As an independent inventive aspect, the invention relates to a substrate holder for curving a substrate, comprising

- a fixing plate for fixing the substrate,
- curving means for curving the fixing plate,

wherein reaction forces produced during the curving of the fixing plate can be compensated by at least one compensation means.

The invention also relates to a device, in particular a bonding device, comprising at least one substrate holder according to the invention.

A second aspect of the invention also relates to a method for bonding two substrates, comprising the following steps, wherein:

- a first substrate is fixed on a first substrate holder according to the first aspect,
 - a second substrate is fixed on a second substrate holder according to the first aspect,
 - the substrates are aligned with respect to one another,
 - at least one of the substrates is curved,
 - the substrates are brought into contact,
- wherein the curvature of at least one of the substrates is adjusted in a targeted manner.

Preferably and as an independent inventive aspect, during the curving of the fixing plate, the moments and/or reaction forces produced in the remaining components are either compensated for, but preferably are not even transferred at all to the fixing plate or only to a small extent.

A further independent aspect of the invention thus relates to a method for bonding two substrates, comprising the following steps, wherein:

- a first substrate is fixed on a first substrate holder in particular according to the invention,
- a second substrate is fixed on a second substrate holder in particular according to the invention,
- the substrates are aligned with respect to one another,
- at least one of the substrates is curved,
- the substrates are brought into contact,

wherein, during the curving of the fixing plate, the moments and/or reaction forces produced in the remaining components are either compensated for, but preferably are not even transferred at all to the