

does not permit insertion of a measuring device. In order however to be able to align the substrates with one another with the aid of their alignment marks, the substrates have to be displaced laterally relative to one another. The alignment marks are then measured in the laterally displaced state by a plurality of lenses and the positions of the substrate holders, which have to be occupied in order to bring the alignment marks exactly into alignment, are calculated. Such alignment systems are dealt with comprehensively in publications US6214692B1, WO2014202106A1, WO2015082020A1 and WO2011042093A1. Substrate holders, which can be positioned very precisely, are a prerequisite for such alignment systems. Furthermore, the position of the substrate holders must also be able to be measured precisely at each point in time.

The greatest problem in the prior art consists in the fact that the substrates have to be brought into position by means of the substrate holders and this positioning can only take place as precisely as the substrate holders can be controlled or their precise position measured. Since the lateral path that the substrate holders cover amounts to several millimetres up to centimetres, an in particular reproducible positioning in the micrometre or nanometre range is very difficult to achieve. Very precise position measuring systems are required, in particular interferometers, which can be correspondingly expensive, maintenance-intensive and error-prone.

~~It is the object~~Embodiments of the present invention, therefore, ~~to~~ provide a method and a device which at least partially eliminate, in particular completely eliminate, the drawbacks mentioned in the prior art. In particular, ~~it is an object~~embodiments of the invention ~~to~~ provide an improved method and device for aligning two substrates with one another, in particular precisely.

~~The present object is solved with the features of the independent claims.~~
~~Advantageous developments of the invention are indicated in the sub-claims.~~
All combinations of at least two features indicated in the description, in the claims and/or the drawings also fall within the scope of the invention. With the indicated value ranges, values also lying within the stated limits should also be deemed to be disclosed as limiting values and can be claimed in any combination.

Accordingly ~~to a first aspect of the present invention, the invention relates to~~ there is provided a device for the alignment of substrates, ~~comprising~~including:

- a first substrate holder for receiving a first substrate, wherein the first substrate ~~comprises~~includes at least two alignment marks,
- a second substrate holder for receiving a second substrate, wherein the second substrate ~~comprises~~includes at least two further alignment marks,
- at least one alignment optic for detecting the alignment marks,

wherein

- the device further ~~comprises~~includes:
- at least one positioning optic for detecting positioning marks,

wherein the alignment marks of the first substrate and the further alignment marks of the second substrate can be aligned with one another depending on the positioning marks.

During the alignment of the substrates or of the alignment marks of the substrates, the positioning marks can be used for a precise alignment. The position of the alignment marks can be determined relative to the positioning marks and an actuation of the substrate holders can advantageously be carried out by means of the positioning marks serving as a reference. An alignment by means of the alignment marks is thus advantageously not required, so that the alignment can also be carried out with precision when the alignment marks are not accessible for the alignment optics, in particular when the substrates and therefore the alignment marks are arranged very close to one another. In particular, the position during the alignment of the substrates, especially of alignment marks which are arranged on the substrates, can be determined when the substrates are arranged one upon the other and the substrate surfaces facing one another are only a few millimetres, in particular only a few nanometres, away from one another. Furthermore, a standard alignment system can advantageously be extended easily and favourably by the aspects ~~according to~~of the invention. Furthermore, the lateral path through which the substrates are moved in the alignment process can advantageously be kept as small as possible.

~~Furthermore, the invention relates to~~According to a second aspect of the present invention, there is provided a method for the alignment of two substrates, in particular using the device for the alignment of substrates, with at least the following steps, in particular with the following sequence:

- i) fixing of two substrates on a substrate holder in each case,
- ii) detection of alignment marks on the substrates,
- iii) detection of positioning marks,
- iv) alignment of the alignment marks of the substrates with one another in dependence on the positioning marks.