

CLAIMS

1. An apparatus (1, 1', 1'', 1''') for heating a substrate (6), having:
 - i) a heater (3),
 - ii) a substrate holder (5) with a substrate holder surface (5o), wherein the substrate (6) to be heated can be placed on the substrate holder surface (5o),
characterized in that the apparatus (1, 1', 1'', 1''') further has:
 - iii) means (7, 8, 9, 11) for exerting forces on the heater (3),
 - iv) a control unit for controlling the means (7, 8, 9, 11),
wherein the heater (3) can be deformed by the means (7, 8, 9).
2. The apparatus (1, 1', 1'', 1''') according to Claim 1, wherein due to the deformation of the heater (3) effected by the means (7, 8, 9, 11) an actual temperature distribution in the substrate (6) is adaptable to a target temperature distribution.
3. The apparatus (1, 1', 1'', 1''') according to at least one of the preceding claims, wherein due to the deformation of the heater (3) effected by the means (7, 8, 9, 11) a deformation of the heater (3) caused by external forces can be offset.
4. The apparatus (1, 1', 1'', 1''') according to at least one of the preceding claims, wherein the apparatus (1, 1', 1'', 1''') includes at least one deformation element (8) connected to the heater (3), wherein the at least one deformation element (8) is connected to at least one actuator, so that the heater (3) is deformable in targeted manner.
5. The apparatus (1, 1', 1'', 1''') according to at least one of the preceding claims, wherein the heater (3) is arranged on a side of the substrate holder surface (5o) opposite the substrate (6).
6. The apparatus (1, 1', 1'', 1''') according to at least one of the preceding claims, wherein the apparatus (1, 1', 1'', 1''') includes a stage (2), wherein the heater (3) is arranged inside the stage (2) with an open space (12) provided between an interior surface (2i) of

the stage (2) and the heater surface (3o) of the heater (3), whereby the heater (3) is deformable independently of the substrate holder surface (5o).

7. The apparatus (1, 1', 1'', 1''') according claim 6, wherein the substrate holder (5) is arranged on a stage surface (2o) of the stage (2).
8. The apparatus (1, 1', 1'', 1''') according to at least one of the preceding claims, wherein the heater (3) has a heating element (4) of flat construction or a plurality of heating elements (4) in a flat arrangement.
9. The apparatus (1, 1', 1'', 1''') according to at least one of the preceding claims, wherein the apparatus (1, 1', 1'', 1''') has at least one fixing element (7), wherein the at least one fixing element (7) is connected to the heater (3) and fixes at least one point of the heater (3).
10. The apparatus (1, 1', 1'', 1''') according to at least one of the preceding claims, wherein the apparatus (1, 1', 1'', 1''') has at least one support element (9) which is not connected to the heater (3), wherein the at least one support element (9) can only apply pressure to the heater (3) and/or can only limit the deformation of the heater (3).
11. The apparatus (1, 1', 1'', 1''') according to at least one of the preceding claims, wherein the apparatus (1, 1', 1'', 1''') has at least one limiting element (11) which is not connected to the heater (3), wherein the at least one limiting element (11) can limit the deformation of the heater (3) and/or can predefine the deformation through the shape of the limiting element (11).
12. The apparatus (1, 1', 1'', 1''') according to at least one of the preceding claims, wherein a fluid stream (10) can be flushed between the heater (3) and other components, between the heater (3) and the stage (2) and/or between the heater (3) and the substrate holder (5), in order to optimise the transfer of heat between the heater (3) and the other components.

13. The apparatus (1, 1', 1'', 1''') according to at least one of the preceding claims, wherein the apparatus (1, 1', 1'', 1''') further includes:

a plate,

wherein the plate is arranged between the heater (3) and the substrate holder (5).
14. A method for heating a substrate (6), for creating a predetermined target temperature distribution in a substrate (6) and/or to offset a deformation of the heater (3) caused by external forces, with an apparatus (1, 1', 1'', 1''') according to at least one of the preceding claims, wherein a heater (3) heats the substrate (6) and a substrate holder (5) holds the substrate (6) in place on a substrate holder surface (5o),

characterized in that means (7, 8, 9, 11) exert forces on the heater (3), and wherein the means (7, 8, 9, 11) are controlled by a control unit, and wherein the heater (3) is deformed by the means (7, 8, 9, 11).
15. The method according to Claim 14 having the following steps, with the following sequence:
 - i) Positioning and/or fixing the substrate (6) on a substrate holder surface (5o) of a substrate holder (5),
 - ii) Determining an actual temperature distribution in the substrate, on the substrate surface (6o),
 - iii) On the basis of an analysis of the actual temperature distribution compared with a target temperature distribution, deforming the heater (3) with the means (7, 8, 9, 11), wherein the means (7, 8, 9, 11) are controlled by the control unit so that the deformation of the heater (3) has the effect of adjusting the actual temperature distribution of the substrate (6) in targeted manner to the predefined target temperature distribution.

16. The method according to at least one of Claims 14 or 15 having the following steps, with the following sequence:
 - i) Positioning and/or fixing the substrate (6) on a substrate holder surface (5o) of a substrate holder (5),
 - ii) Determining a deformation of the heater (3) of the heater surface (3o), caused by external forces,
 - iii) On the basis of an analysis of the deformation of the heater (3) caused by the external forces, deforming the heater (3) with the means (7, 8, 9, 11), wherein the means (7, 8, 9, 11) are controlled by the control unit so that the deformation of the heater (3) has the effect of offsetting the deformation of the heater (3) caused by the external forces.
17. An apparatus for processing and/or bonding a substrate (6), comprising the apparatus (1, 1', 1'', 1''') according to any one claims 1 to 13.
18. A method for processing and/or bonding a substrate (6), with the apparatus (1, 1', 1'', 1''') according to any one of claims 1 to 13, wherein the substrate is heated with the method according to any one of Claims 14, 15 or 16.