

CLAIMS

1. An apparatus for processing a wafer, the apparatus comprising:

5 a rotatable chuck for receiving and rotating a wafer;
a heating device arranged to heat a wafer received by the rotatable chuck;

a plate that is transparent to radiation emitted by the heating device; and

10 a plate holder that holds an outer periphery of the plate, so as to mount the plate in the plate holder;

wherein the plate holder is mountable in the apparatus to position the plate between the heating device and a wafer when the wafer is received by the rotatable chuck,

15 wherein the outer periphery of the plate is bevelled or chamfered or stepped,

wherein the plate holder comprises upper and lower parts for clamping the outer periphery of the plate therebetween;

20 wherein one of the upper part and the lower part has a first clamping surface that has a shape that is complementary to the bevelled or chamfered or stepped outer periphery of the plate; and

wherein the first clamping surface contacts the bevelled or chamfered or stepped outer periphery of the plate.

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2. The apparatus according to claim 1, wherein the plate holder has a plurality of through holes or openings for mounting the plate holder in the apparatus.

30 3. The apparatus according to claim 2, wherein the plate holder is fastened to another part of the apparatus by fasteners that pass through the plurality of through holes or openings in the plate holder.

4. The apparatus according to claim 2 or 3, wherein the plate and plate holder are parts of a housing that surrounds the heating device.

5. The apparatus according to claim 4, wherein the plate holder is fastened to another part of the housing by fasteners that pass through the plurality of through holes or openings in the plate holder.

6. The apparatus according to claim 4 or claim 5, wherein the housing comprises a lower shell positioned below the heating device, and wherein the plate holder is fastened to an upper surface of the lower shell to surround the heating device.

7. The apparatus according to one of claims 2 to 6, wherein the apparatus comprises holding pins for holding the wafer, and wherein the holding pins pass through the plurality of through holes or openings in the plate holder.

8. The apparatus according to any one of the previous claims, wherein the plate holder clamps the outer periphery of the plate.

9. The apparatus according to any one of the previous claims, wherein some or all of an outer edge of the plate is at an angle other than 90 degrees relative to a front surface of the plate.

10. The apparatus according to any one of the previous claims, wherein an angle of a bevelled or chamfered portion of the outer periphery is between 30 and 80 degrees relative to a top surface of the plate.

11. The apparatus according to any one of the previous claims, wherein a groove is located in the first clamping surface, and a sealing element is located in the groove and forms a seal against the bevelled or chamfered or stepped outer periphery of the plate.

12. The apparatus according to any one of the previous claims, wherein another one of the upper part and lower part has a second clamping surface that contacts a surface of the plate, and the plate is clamped between the first clamping surface and the second clamping surface.

13. The apparatus according to any one of the previous claims, wherein:
the lower part of the plate holder is made of metal;
and/or
the upper part of the plate holder is made of plastic.

14. The apparatus according to any one of the previous claims, wherein the upper part and lower part of the plate holder are fastened together using fasteners to clamp the bevelled or chamfered or stepped outer periphery of the plate therebetween.

15. The apparatus according to any one of the previous claims, wherein a surface of the lower part on which radiation emitted by the heating device is incident is reflective.

16. The apparatus according to any previous claim, wherein a surface of the plate is coated with an antireflective coating.

17. A plate configured to be used in the apparatus of any of claims 1 to 16, wherein the plate is transparent to one or more wavelengths of light, and wherein the plate has a bevelled or chamfered or stepped outer periphery.

18. The plate according to claim 17, wherein an angle of a bevelled or chamfered portion of the outer periphery is between 30 and 80 degrees relative to a top surface of the plate.

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19. The plate according to claim 17 or 18, wherein the plate is transparent to light having a maximum intensity in a wavelength range from 380nm to 650nm.

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20. The plate according to any one of claims 17 to 19, wherein the plate is transparent to blue light.

21. The plate according to any one of claims 17 to 20, wherein the plate has a diameter of less than 300 mm.

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22. The plate according to any one of claims 17 to 21, wherein the plate comprises sapphire.

23. The plate according to any one of claims 17 to 22, wherein a surface of the plate is coated with an antireflective coating.

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24. A plate holder for use in an apparatus for processing a wafer, wherein:

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the plate holder is configured to hold an outer periphery of a plate, so as to mount the plate in the plate holder;

the plate holder is configured to be mounted in the apparatus;

the plate holder comprises an upper part and a lower part for clamping the outer periphery of the plate therebetween; and

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one of the upper part and lower part has a first clamping surface that is configured to contact a bevelled or chamfered or stepped outer periphery of the plate.

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25. The plate holder according to claim 24, wherein the plate holder comprises a plurality of through holes or openings for mounting the plate holder in the apparatus.

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26. The plate holder according to claim 24 or claim 25, wherein the first clamping surface has an angle of between 30 and 80 degrees.

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27. The plate holder according to any one of claims 24 to 26, wherein a groove for receiving a first sealing element is located in the first clamping surface.

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28. The plate holder according to any one of claims 24 to 27, wherein another one of the lower part and the upper part has a second clamping surface for contacting a surface of the plate.

29. The plate holder according to any one of claims 24 to 28, wherein:

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the lower part of the plate holder is made of metal;
and/or

the upper part of the plate holder is made of plastic.

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30. The plate holder according to any one of claims 24 to 29, wherein the upper part and the lower part of the plate holder are fastened together using fasteners.

31. The plate holder according to any one of claims 24 to 30, wherein a surface of the lower part is reflective.

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