CLAIMS

1. A lithography system for projecting an image or an image pattern on-to a target, the system comprising: ~~such as a wafer, wherein energy that is accumulated in the target by the projection of the image or image pattern is removed from said target in such a manner that expansion by local and/or overall heating of said target is limited to a relevant pre-defined value, and wherein such heat removal is realised by the use of a phase transition in a heat absorbing material that is brought into thermal contact with said target.~~

a target carrier comprising:

a cavity containing a phase change material and an internal heat-conducting frame, and

a top layer and a bottom layer interconnected by the internal heat-conducting frame, wherein:

the top layer includes a surface having heat-conducting burls that support the target and thermally connect the target with the phase change material,

the bottom layer forms a flat reference plane for the top layer, and

~~1.~~ the phase change material and the burls are configured to remove heat from the target in such a manner that expansion caused by local and/or overall heating of said target is limited to a relevant pre-defined value.

~~2. System according to claim 1, wherein said material is applied in combination with a further material having a relatively superior coefficient of heat transport.~~

~~3. System according to claim 1, wherein said material is incorporated in an emulsion comprising a material having a superior coefficient of heat transfer.~~

~~4. System according to the preceding claim, wherein said emulsion comprises at least one of silicon and metal particles.~~

~~5. System according to claim 1, wherein said material is adhered to a bottom face of the target.~~

~~6. System according to claim 1 wherein the contacting surface of the phase transition material is substantially larger than a surface to be processed of said target.~~

~~7. System according to claim 1, wherein said material is set into said thermal contact by means of a surface enlarging body.~~

~~8. System according to the preceding claim wherein said body is an internally porous body.~~

~~9. System according to the preceding claim wherein said body is enclosed.~~

~~10. System according to claim 1, wherein said material has a phase transition at a temperature corresponding to that of the operational temperature of said lithography system.~~

~~11. System according to the preceding claim, wherein said operational temperature corresponds to room temperature.~~

~~12. System according to claim 7, wherein said body is provided with burls for supporting a target to be processed.~~

~~13. System according to the preceding claim, wherein the burls are integrated with at least part of said body.~~

~~14. System according to the preceding claim in which for processing purposes of a target to be supported by said burls, a phase retaining fluid or paste is provided between said burls.~~

~~15. System according to claim 1, wherein a massive plurality of burls is applied for supporting said target.~~

~~16. System according to the preceding claim, wherein said burls are provided as hair like elements.~~

~~17. System according to the preceding claim, wherein the elements are flexible.~~

~~18. System according to the two but preceding claim, wherein the elements are of sacrificing nature.~~

~~19. System according to the one but preceding claim, wherein the elements are of elastic nature.~~

~~20.~~2. The s~~S~~ystem according to claim 1~~16~~, wherein the percentage of the surface ~~area as taken in top view,~~ that is made up of the burls is within the range of ~~at least~~ around 1% to ~~at least~~ around 5%~~, preferably at least around 1%~~.

~~21. System according to claim 1, wherein heat conducting material is applied as a means for creating electrostatic clamping force, in particular in the form of burls as used for supporting said target.~~

~~22. System according to claim 1, characterized in that a target to be processed is attracted to a heat absorbing material carrying body, by means of an electrostatic clamp included at the frame face opposite to a burls carrying face associated with said body.~~

~~23. Frame of wafer material, comprising two interconnected wafer like elements, at least one of which is provided with bores comprising a heat absorbing material, the other element closing off said bores.~~

~~24. Frame according to the previous claim, provided with a characterizing feature as defined in any of the preceding system claims.~~

~~25. Frame according to any of the preceding frame claims, wherein the upper, i.e. burls containing face of the frame is provided with a thermally conducting, electrically insulating layer, in particular such as X micron Aluminum Nitride and as Beryllium Oxide.~~

~~26. Method of stabilizing a target temperature in a lithography system, by removing heat from the target using a phase transition in a further material that is brought into thermal contact with said target.~~

3. The system according to claim 1, wherein a contacting surface of the phase change material is substantially larger than a target surface that is to be processed.

4. The system according to claim 1, wherein the burls comprise silicon.

5. The system according to claim 1, wherein the phase change material has a phase transition from a solid state to a liquid state at a temperature corresponding to that of the operational temperature of the lithography system.

6. The system according to claim 5, wherein the operational temperature is within a range of 20 to 25 degrees Celsius.

7. The system according to claim 1, wherein the burls are integrated with at least part of said top layer.

8. The system according to claim 7, wherein a phase retaining fluid or paste is provided between said burls for optimizing a clamping force between the target and the target carrier.

9. The system according to claim 1, wherein the internal heat-conducting frame comprises rectangular structures, the rectangular structures being filled with the phase changed material within the range of 60% to 90% of the surface area of each rectangular structure.

10. The system according to claim 1, wherein the burls are provided with a thermally conducting layer.

11. A wafer carrier comprising:

a cavity containing a phase change material and an internal heat-conducting frame, and

a first and a second wafer-like element interconnected by the internal heat-conducting frame, wherein:

the first wafer-like element includes a surface that is provided with heat conducting burls that support a target and thermally connect the target with the phase change material,

the second wafer-like element forms a flat reference plane for the first wafer-like element, and

the phase change material and the burls are configured to remove heat from the target in such a manner that expansion caused by local and/or overall heating of said target is limited to a relevant pre-defined value.

12. The wafer carrier of claim 11, wherein the burls comprise silicon.

13. The wafer carrier of claim 11, wherein the percentage of the surface that is made up of the burls is within the range of around 1% to around 5%.

14. The wafer carrier of claim 11, wherein the surface is configured to receive a fluid or paste between the surface and the target.

15. The wafer carrier of claim 11, wherein the burls are provided with a thermally conducting layer.

16. The wafer carrier of claim 11, wherein the phase change material has a phase transition from a solid state to a liquid state at a temperature corresponding to that of the operational temperature of the lithography system.

17. The wafer carrier of claim 16, wherein the operational temperature is within a range of 20 to 25 degrees Celsius.