Claims:

1. A chuck for supporting a wafer-shaped article comprising:

a body adapted to position a wafer-shaped article in a predetermined orientation during a processing operation, said body comprising an upper surface and a plurality of pins extending upwardly relative to said upper surface, said pins being configured for engaging an edge or surface of a wafer-shaped article; and

at least one shielding member positioned over at least one of said upper surface of said body and a portion of at least one of said pins located upwardly of said upper surface,

wherein said at least one shielding member comprises a shield plate positioned substantially over said upper surface of said body and maintained at a predetermined distance above said upper surface of said body so as to form a gap therebetween.

2. A chuck for supporting a wafer-shaped article comprising:

a body adapted to position a wafer-shaped article in a predetermined orientation during a processing operation, said body comprising an upper surface and a plurality of pins extending upwardly relative to said upper surface, said pins being configured for engaging an edge or surface of a wafer-shaped article; and

at least one shielding member positioned over at least one of said upper surface of said body and a portion of at least one of said pins located upwardly of said upper surface,

wherein said at least one shielding member comprises a shield plate having a plurality of through-holes, each of said pins extending through one of said plurality of through-holes, said shield plate further comprising recesses surrounding each of said through holes and configured to collect processing liquid and direct processing liquid radially outwardly away from said body.

3. The chuck according to claim 2, wherein said shield plate further comprises an annular flange surrounding each of said plurality of pins.

4. The chuck according to claim 2, wherein said shield plate further comprises a central opening and an upwardly extending annular flange surrounding the central opening.

5. The chuck according to claim 2, wherein said at least one shielding member further comprises one or more pin covers.

6. The chuck according to claim 5, wherein each said pin cover overlies a pin body and defines an opening through which a pin rod passes, said pin cover extending radially outwardly and downwardly relative to a longitudinal axis of said pin base body and being positioned relative to said recesses so as to direct processing liquid from an upper surface of said pin cover to an underlying recess.

7. A chuck for supporting a wafer-shaped article comprising:

a body adapted to position a wafer-shaped article in a predetermined orientation during a processing operation, said body comprising an upper surface and a plurality of pins extending upwardly relative to said upper surface, said pins being configured for engaging an edge or surface of a wafer-shaped article; and

at least one shielding member positioned over at least one of said upper surface of said body and a portion of at least one of said pins located upwardly of said upper surface,

further comprising a metallic reinforcing member positioned beneath an upper part of said body.

8. A chuck for supporting a wafer-shaped article comprising:

a body adapted to position a wafer-shaped article in a predetermined orientation during a processing operation, said body comprising an upper surface and a plurality of pins extending upwardly relative to said upper surface, said pins being configured for engaging an edge or surface of a wafer-shaped article; and

at least one shielding member positioned over at least one of said upper surface of said body and a portion of at least one of said pins located upwardly of said upper surface,

wherein said at least one shielding member comprises one or more pin covers.

9. The chuck according to claim 8, wherein each said pin cover overlies a pin body and defines an opening through which a pin rod passes, said pin cover extending radially outwardly and downwardly relative to a longitudinal axis of said pin base body.

10. A chuck for supporting a wafer-shaped article comprising:

a body adapted to position a wafer-shaped article in a predetermined orientation during a processing operation, said body comprising an upper surface and a plurality of pins extending upwardly relative to said upper surface, said pins being configured for engaging an edge or surface of a wafer-shaped article; and

at least one shielding member positioned over at least one of said upper surface of said body and a portion of at least one of said pins located upwardly of said upper surface,

wherein said at least one shielding member comprises a shield plate, said shield plate comprising recesses surrounding each of said through holes and configured to collect processing liquid and direct processing liquid radially outwardly away from said body.

Claims

[Claim 0001] A chuck for supporting a wafer-shaped article comprising:
a body adapted to position a wafer-shaped article in a predetermined orientation during a processing operation, said body comprising an upper surface and a plurality of pins extending upwardly relative to said upper surface, said pins being configured for engaging an edge or surface of a wafer-shaped article; and
at least one shielding member positioned over at least one of said upper surface of said body and a portion of at least one of said pins located upwardly of said upper surface.

[Claim 0002] The chuck according to claim 1, wherein the body is a rotatable support adapted for use in single wafer wet processing of semiconductor wafers.

[Claim 0003] The chuck according to claim 1, wherein said at least one shielding member comprises a shield plate positioned substantially over said upper surface of said body and maintained at a predetermined distance above said upper surface of said body so as to form a gap therebetween.

[Claim 0004] The chuck according to claim 1, wherein said at least one shielding member comprises a shield plate having a plurality of through-holes, each of said pins extending through one of said plurality of through-holes, said shield plate further comprising recesses surrounding each of said through holes and configured to collect processing liquid and direct processing liquid radially outwardly away from said body.

[Claim 0005] The chuck according to claim 4, wherein said shield plate further comprises an annular flange surrounding each of said plurality of pins.

[Claim 0006] The chuck according to claim 4, wherein said shield plate further comprises a central opening and an upwardly extending annular flange surrounding the central opening.

[Claim 0007] The chuck according to claim 1, further comprising a metallic re-inforcing member positioned beneath an upper part of said body.

[Claim 0008] The chuck according to claim 1, wherein said at least one shielding member comprises one or more pin covers.

[Claim 0009] The chuck according to claim 8, wherein each said pin cover overlies a pin body and defines an opening through which a pin rod passes, said pin cover extending radially outwardly and downwardly relative to a longitudinal axis of said pin base body.

[Claim 0010] The chuck according to claim 4, wherein said at least one shielding

member further comprises one or more pin covers.

[Claim 0011] The chuck according to claim 10, wherein each said pin cover overlies a pin body and defines an opening through which a pin rod passes, said pin cover extending radially outwardly and downwardly relative to a longitudinal axis of said pin base body and being positioned relative to said recesses so as to direct processing liquid from an upper surface of said pin cover to an underlying recess.

[Claim 0012] A process for use in wet processing a wafer-shaped article, comprising:
positioning a wafer-shaped article on a chuck in a predetermined orientation, said chuck comprising a body and a plurality of pins extending upwardly from the body, the pins being configured for engaging an edge or surface of a wafer-shaped article;
dispensing processing liquid onto the wafer-shaped article such that the wafer-shaped article reaches a temperature substantially higher than 80°C; and
maintaining at least one of said body and said pins at a temperature of 80°C or less.

[Claim 0013] The process according to claim 12, wherein the wafer-shaped article reaches a temperature of 120°C or greater.

[Claim 0014] The process according to claim 12, wherein the wafer-shaped article reaches a temperature in the range of 120°C to 180°C.

[Claim 0015] The process according to claim 12, wherein the chuck comprises at least one shielding member positioned over at least one of the body and the pins and configured to maintain at least one of the body and the pins at a temperature not greater than 80°C when a temperature prevailing on an upper surface of the shielding member is 120°C or higher.