

and reliable and that does not require the individual or collective handling of the assemblies in order to perform the fracture operation.

BRIEF DESCRIPTION OF THE INVENTION

In order to achieve this aim, an aspect of the present application proposes a system for fracturing a plurality of wafer assemblies, one of the wafers of each assembly comprising an embrittlement plane and each assembly comprising a peripheral side groove, the device comprising:

- a cradle for keeping the assemblies of the plurality of assemblies spaced apart from and parallel to each other, along a storage axis;

- a separation device for applying separation forces in the peripheral groove of an assembly disposed in a fracture zone of the separation device, the separation forces being intended to separate the wafers of the assembly from each other so as to initiate the fracturing thereof on the embrittlement plane;

- a drive device configured to move along the axis for storing the cradle opposite the separation device so as to successively place an assembly of the cradle in the fracture zone of the separation device.

Such a fracturing system allows a plurality of assemblies to be collectively fractured, without simultaneously inducing this fracture on all the assemblies and without individually handling each assembly. The assemblies are fractured whilst they are disposed in the cradle. These principles allow the fracturing system to be significantly simplified and made more reliable.

According to other advantageous and non-limiting features of the present application, considered alone or according to any technically feasible combination:

- the distance separating two assemblies in the cradle is constant;
- the fracture zone is configured to accommodate a single assembly and the separation device processes one assembly at a time;
- the drive device allows the cradle to be moved opposite the separation device at a constant speed;
- the drive device allows the cradle to be moved opposite the separation device step-by-step;
- the drive device is a cradle support of a furnace;
- the cradle rests on the cradle support;
- the separation device is fixed;
- the separation device is produced by a compressor allowing a high-pressure fluid jet to be generated;
- the separation system comprises a nozzle for shaping the fluid jet;
- the separation system comprises a tool disposed at the end of a movable arm;
- the cradle is provided with a separation part;

- the separation part has a plurality of blades engaged in the peripheral side grooves of the assemblies, when these are housed in the cradle;
- the separation device is a presser device for applying a force on an assembly guided towards the separation part;
- the separation device comprises an endless screw having a helical thread, with a blade being disposed in the thread to the right of the fracture zone.

According to another aspect, the present application seeks to provide a method for fracturing a plurality of assemblies of wafers disposed in a cradle, wherein the assemblies are kept spaced apart from and parallel to each other, one of the wafers of each assembly comprising an embrittlement plane and each assembly comprising a peripheral side groove, the method comprising the following steps:

- moving the cradle along the storage axis so that it is opposite a separation device so as to successively place an assembly of the cradle in a fracture zone of the separation device;
- applying, by means of the separation device, separation forces in the peripheral groove of the assembly disposed in the fracture zone, the separation forces being intended to separate the wafers of the assembly from each other so as to initiate the fracturing thereof on the embrittlement plane.

BRIEF DESCRIPTION OF THE FIGURES

Further features and advantages of the invention will become apparent from the following detailed description of the invention, with reference to the appended figures, in which:

CLAIMS

1. System for fracturing a plurality of wafer assemblies, one of the wafers of each assembly comprising an embrittlement plane and each assembly comprising a peripheral side groove, the device comprising:
 - a cradle for keeping the assemblies of the plurality of assemblies spaced apart from and parallel to each other along a storage axis;
 - a separation device for applying separation forces in the peripheral groove of an assembly disposed in a fracture zone of the separation device, the separation forces being intended to separate the wafers of the assembly from each other so as to initiate the fracturing thereof on the embrittlement plane;
 - a drive device configured to move along the axis for storing the cradle opposite the separation device so as to successively place an assembly of the cradle in the fracture zone of the separation device.
2. Fracturing system according to the preceding claim, wherein the distance separating two assemblies in the cradle is constant.
3. Fracturing system according to one of the preceding claims, wherein the fracture zone is configured to accommodate a single assembly and the separation device processes one assembly at a time.
4. Fracturing system according to one of the preceding claims, wherein the drive device allows the cradle to be moved opposite the separation device at a constant speed.

5. Fracturing system according to one of Claims 1 to 3, wherein the drive device allows the cradle to be moved opposite the separation device step-by-step.
6. Fracturing system according to one of the preceding claims, wherein the drive device is a cradle support of a furnace.
7. Fracturing system according to the preceding claim, wherein the cradle rests on the cradle support.
8. Fracturing system according to one of the preceding claims, wherein the separation device is fixed.
9. Fracturing system according to one of the preceding claims, wherein the separation device is produced by a compressor allowing a high-pressure fluid jet to be generated.
10. Fracturing system according to the preceding claim, wherein the separation device comprises a nozzle for shaping the fluid jet.
11. Fracturing system according to one of Claims 1 to 8, wherein the separation system comprises a tool disposed at the end of a movable arm.
12. Fracturing system according to one of Claims 1 to 8, wherein the cradle is provided with a separation part.
13. Fracturing system according to the preceding claim, wherein the separation part has a plurality of blades engaged in the peripheral side grooves of the assemblies, when these are housed in the cradle.

14. Fracturing system according to one of the two preceding claims, wherein the separation device is a presser device for applying a force on an assembly guided towards the separation part.
15. Fracturing system according to one of Claims 1 to 8, wherein the separation device comprises an endless screw having a helical thread, with a blade being disposed in the thread to the right of the fracture zone.
16. Method for fracturing a plurality of assemblies of wafers disposed in a cradle, wherein the assemblies are kept spaced apart from and parallel to each other, one of the wafers of each assembly comprising an embrittlement plane and each assembly comprising a peripheral side groove, the method comprising the following steps:
- moving the cradle along the storage axis so that it is opposite a separation device so as to successively place an assembly of the cradle in a fracture zone of the separation device;
 - applying, by means of the separation device, separation forces in the peripheral side groove of the assembly disposed in the fracture zone, the separation forces being intended to separate the wafers of the assembly from each other so as to initiate the fracturing thereof on the embrittlement plane.