

that the origin of this periodic pattern lay in the interaction between the fracture wave and acoustic vibrations encountered in the assembly to be fractured.

5 More precisely, the inventors of the present application found that the initiation and/or propagation of the fracture wave was liable to cause this assembly to vibrate. These Lamb-wave vibrations propagate without significant attenuation over
10 distances comparable to the size of the substrates, and at a speed greater than the speed of the self-sustained fracture wave. They are reflected, once or several times, on the ends of the assembly to be fractured, which helps to maintain this acoustic vibration in the
15 assembly during the propagation of the fracture wave. In relation to the present invention, the inventors have thus found that the modulation of the fracture wave by these acoustic vibrations was the cause of the periodic pattern of thickness variation observed on the
20 useful layer at the end of the method.

BRIEF DESCRIPTION

25 With a view to achieving the aforementioned object, the subject-matter of the disclosure proposes a method for transferring a useful layer onto a support including the following steps of:

- 30 - formation of a fragilization plane through implantation of light species into a first substrate in such a way as to form a useful layer between this plane and a surface of the first substrate;
- 35 - application of a support onto the surface of the first substrate to form an assembly to be fractured, having two exposed sides;
- thermal fragilization treatment of the assembly to be fractured;

- initiation and self-sustained propagation of a fracture wave in the first substrate along the fragilization plane.

5 According to the disclosure, at least one of the sides of the assembly to be fractured is in close contact, over a contact zone, with an absorbent element suitable for capturing and dissipating the acoustic vibrations emitted during the initiation and/or
10 propagation of the fracture wave.

In one aspect, the present disclosure relates to a method for transferring a useful layer (3) onto a support (4), including the following main steps:

- 15 - formation of a fragilization plane (2) through the implantation of light species into a first substrate (1) in such a way as to form a useful layer (3) between this plane and a surface of the first substrate (1);
- 20 - application of the support (4) onto the surface of the first substrate (1) to form an assembly to be fractured (5), having two exposed sides (S1, S2);
- thermal fragilization treatment of the assembly
25 to be fractured (5);
- initiation and self-sustained propagation of a fracture wave in the first substrate (1) along the fragilization plane (2);

 the method being characterized in that at least one
30 of the sides (S1, S2) of the assembly to be fractured (5) is in close contact, over a contact zone, with an absorbent element (6a, 6b) suitable for capturing and dissipating the acoustic vibrations emitted during the initiation and/or propagation of the fracture wave.

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 Since at least some of the emitted acoustic vibrations are absorbed by the absorbent element, the interaction of these acoustic vibrations with the

fracture wave is less, and the useful layer has a periodic pattern of thickness variation that is reduced in size.

5 According to other advantageous and non-limiting characteristics of the disclosure, taken alone or in combination:

10 - the acoustic vibrations have a main frequency, and the absorbent element is chosen to capture and dissipate the acoustic waves at this main frequency;

 - the contact zone extends over a part of the extent of the side of the assembly to be fractured;

15 - the contact zone is positioned on the side of the assembly to be fractured facing the fracture wave initiation zone;

 - the initiation of the fracture wave is obtained during the thermal fragilization treatment step;

20 - the initiation of the fracture wave is obtained through application of a mechanical force in the fragilization plane;

 - the absorbent element is placed in close contact with the side of the assembly to be