Claims

1. Process for fabricating a donor substrate, comprising the following steps:

A: providing a handle substrate,

B: providing a target substrate,

C: attaching the target substrate to the handle substrate, comprising bonding by way of an adhesive layer, the adhesive layer being a layer of a photo-polymerizable material, in particular a layer of a photo-polymerizable liquid with a thickness of 3 µm to 8 µm,

D: rectifying, in particular by grinding, the target substrate attached to the handle substrate, so as to form the donor substrate,

said process being **characterized in that** a waiting period of a predetermined duration is observed between step C and step D.

2. Process according to Claim 1, wherein the target substrate is a piezoelectric substrate, in particular a piezoelectric substrate comprising a material selected from among quartz, lithium tantalate, lithium niobate, aluminium nitride, zinc oxide, gallium orthophosphate, barium titanate, langasite, langanite, gallium nitride, lead zirconate titanate or langatate.

3. Process according to Claim 1 or Claim 2, wherein the handle substrate comprises a material selected from among silicon, sapphire, aluminium nitride, silicon carbide or gallium arsenide.

4. Process according to one of Claims 1 to 3, wherein the predetermined duration is at least 24 h, preferentially at least 48 h, and preferably at least 105 h.

5. Process according to one of Claims 1 to 4, wherein the predetermined duration is less than 300 h, preferentially less than 200 h, and preferably less than 150 h.

6. Process according to one of Claims 1 to 5, wherein the predetermined duration is determined as a function of the material of the adhesive layer.

7. Process according to one of Claims 1 to 6, wherein the predetermined duration is selected, on the basis of a statistical study, in particular a study resulting from tests comprising at least 500 donor substrates, developing a rate of cracking observed on multi-layer substrates obtained from the donor substrates according to the duration of the observed waiting period, such that said duration corresponds to the duration required to obtain a rate of cracking of 20% or less, in particular of 10% or less, or even more particularly of 5% or less.

8. Process according to one of Claims 1 to 7, wherein the waiting period is observed under ambient conditions.

9. Process according to one of Claims 1 to 8, wherein step C comprises the polymerization of the adhesive layer when irradiated by a luminous flow.

10. Process for transferring a layer from a donor substrate to a carrier substrate, comprising the following steps:

A: providing a donor substrate obtained by implementation of the process according to one of Claims 1 to 9;

B: forming a weakened zone in the target substrate so as to delimit the layer of the target substrate to be transferred;

C: providing a carrier substrate, notably comprising a material corresponding to a material of the handle substrate;

D: attaching the donor substrate to the carrier substrate;

E: fracturing and separating the donor substrate along the weakened zone.