CLAIMS

1. A method for preparing a thin monodomain layer of ferroelectric material, the method comprising the following steps:
   - implanting light species in a first face of a ferroelectric donor substrate to form an embrittlement plane and define a first layer between the embrittlement plane and the first face of the donor substrate;
   - assembling the first face of the donor substrate to a support substrate by means of a dielectric assembly layer;
   - fracturing the donor substrate at the embrittlement plane in order to transfer the first layer onto the support substrate and expose a free face of the first layer; and
   - finishing the first layer, the finishing comprising a heat treatment of the free face of the first layer, followed by thinning of the first layer to form the thin monodomain layer;
   wherein the dielectric assembly layer comprises an oxide preventing a diffusion of hydrogen towards the first layer, or the dielectric assembly layer comprises a barrier preventing the diffusion of hydrogen towards the first layer.

2. The method according to the preceding claim, wherein the thinning comprises chemical-mechanical polishing applied to the free face of the first layer.

3. The method according to one of the preceding claims, wherein the heat treatment is carried out at a temperature between 300°C and the Curie temperature of the ferroelectric material making up the first layer, and for a period of between 30 minutes and 10 hours.

4. The method according to one of the preceding claims, wherein the heat treatment is carried out under an oxidizing or neutral gaseous atmosphere.

5. The method according to one of the preceding claims, wherein the donor substrate comprises a ferroelectric material chosen from $LiTaO_3$ or $LiNbO_3$.

6. The method according to one of the preceding claims, wherein the ferroelectric material has a crystal direction of between 30° and 60° RY.

7. The method according to one of the preceding claims, wherein the material of the support substrate is silicon.

8. The method according to one of the preceding claims, wherein the donor substrate is a block of solid material.

9. The method according to one of the preceding claims, wherein the donor substrate comprises a thick layer of ferroelectric material placed on a manipulator substrate.

10. The method according to claim 9, wherein the manipulator substrate has a thermal expansion coefficient identical or close to the thermal expansion coefficient of the support substrate.

11. The method according to one of the preceding claims, wherein the material of the first layer and the material of the support substrate have different thermal expansion coefficients.

12. The method according to one of the preceding claims, wherein the dielectric assembly layer comprises an oxide having nitrogen in a nitrogen/oxygen ratio greater than or equal to 0.01.

13. The method according to one of the preceding claims, wherein the dielectric assembly layer comprises a silicon oxide having nitrogen in a nitrogen/oxygen ratio of between 0.01 and 0.25.

14. The method according to one of the preceding claims, wherein the dielectric assembly layer is formed by a stack comprising a first oxide layer disposed on the side of the support substrate and a layer of silicon nitride disposed on the side of the first layer.