CLAIMS

1. A process for fabricating a semiconductor-on-insulator substrate for radiofrequency applications, comprising the following steps:

- providing a p-doped semiconductor donor substrate,
- forming a sacrificial layer on the donor substrate,
- implanting atomic species through said sacrificial layer, so as to form, in the donor substrate, a weakened area defining a semiconductor thin layer to be transferred,
- removing the sacrificial layer from the donor substrate after said implantation,
- providing a semiconductor carrier substrate having an electrical resistivity greater than or equal to 500 Ω.cm,
- forming an electrically insulating layer on the carrier substrate,
- bonding the donor substrate to the carrier substrate, the semiconductor thin layer and the electrically insulating layer being at the bonding interface,
- detaching the donor substrate along the weakened area so as to transfer the semiconductor thin layer from the donor substrate to the carrier substrate.

2. The process according to Claim 1, wherein forming the sacrificial layer comprises oxidizing the material of the donor substrate.

3. The process according to either of Claims 1 and 2, wherein removing the sacrificial layer comprises wet-etching said layer.

4. The process according to one of Claims 1 to 3, wherein removing the sacrificial layer furthermore comprises removing a surface portion of the thin layer to be transferred from the donor substrate.

5. The process according to one of Claims 1 to 4, wherein the donor substrate is boron-doped.

6. The process according to one of Claims 1 to 5, wherein forming the electrically insulating layer comprises depositing an oxide on the carrier substrate.

7. The process according to one of Claims 1 to 5, wherein forming the electrically insulating layer comprises oxidizing the carrier substrate.

8. The process according to one of Claims 1 to 7, wherein the electrically insulating layer has a thickness between 10 and 150 nm.

9. The process according to one of Claims 1 to 8, wherein the transferred semiconductor layer has a thickness between 4 and 100 nm.