CLAIMS

1. A method of fabricating a device on a carrier substrate, the method comprising:

providing a first substrate;

forming a plurality of buffer layers with different compositions by epitaxial growth on the first substrate;

forming one or more device layers on the plurality of buffer layers;

bonding a second substrate to the device layers on a side thereof opposite to the first substrate;

removing the first substrate; and

adjusting strain in the one or more device layers by removing at least a portion of the buffer layers to reduce a thickness of the buffer layers.

2. The method of claim 1, wherein a polarity of the device layers is inverted as a result of the bonding to the second substrate and the removing of the first substrate.

3. The method claim 1, wherein forming the buffer layers comprises SiNx masking.

4. The method of claim 1, wherein all buffer layers are removed.

5. The method of claim 4, further comprising removing a portion of the device layers to reduce a thickness of the device layers.

6. The method of claim 1, further comprising providing an etch-stop layer and using the etch-stop layer to achieve a desired polarity of the device layers with high yield.

7. The method of claim 1, further comprising bonding a third substrate to the one or more device layers on a side thereof opposite to the second substrate, and removing the second substrate.

8. The method of claim 7, wherein the polarity of the device layers is inverted as a result of the bonding to the third substrate and the removing of the second substrate.

9. The method of claim 7, further comprising providing another etch-stop layer and using the other etch-stop layer to achieve a desired polarity of the device layers with high yield.

10. A device comprising:

a carrier substrate; and

one or more device layers on the carrier substrate;

wherein the one or more device layers were grown on a plurality of epitaxially grown buffer layers with different compositions on a substrate different from the carrier substrate; and

wherein a strain in the one or more device layers was adjusted by removing at least a portion of the buffer layers to reduce a thickness of the buffer layers.

11. The device of claim 10, wherein a polarity of the device layers on the carrier substrate is inverted compared to a polarity of the device layers on the substrate.

12. The device of claim 10, wherein a polarity of the device layers on the carrier substrate is the same as a polarity of the device layers on the substrate.

13. The device of claim 10, further comprising at least one of the buffer layers used during the growth of the device layers on a side thereof opposite to the carrier substrate.

14. The device of claim 13, comprising a plurality of buffer layers with different compositions used during the growth of the device layers on a side of thereof opposite to the carrier substrate.

15. The device of claim 13, wherein the plurality of buffer layers comprise a SiNx mask.

16. The device of claim 13, wherein the device layers or at least one buffer layer are exposed to an ambient.

17. The device of claim 13, wherein the device layers were grown by epitaxial growth.