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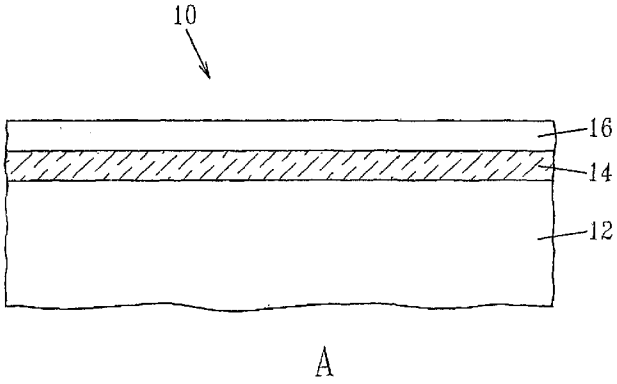
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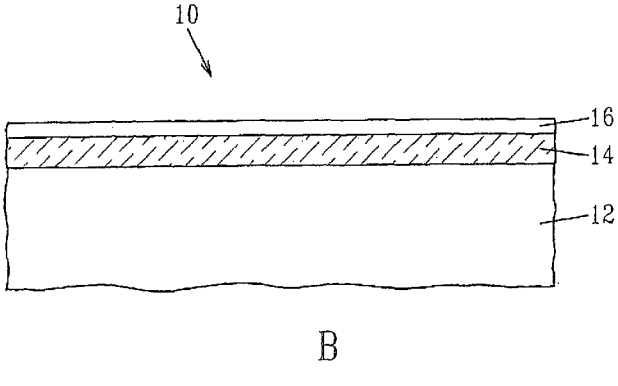
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(54) Title: SiGe LATTICE ENGINEERING USING A COMBINATION OF OXIDATION THINNING AND EPITAXIAL REGROWTH



A



B

(57) Abstract: The present invention provides a method of fabricating a SiGe-on-insulator substrate in which lattice engineering is employed to decouple the interdependence between SiGe thickness, Ge fraction and strain relaxation. The method includes providing a SiGe-on-insulator substrate material comprising a SiGe alloy layer having a selected in-plane lattice parameter, a selected thickness parameter and a selected Ge content parameter, wherein the selected in-plane lattice parameter has a constant value and one or both of the other parameters, i.e., thickness or Ge content, have adjustable values; and adjusting one or both of the other parameters to final selected values, while maintaining the selected in-plane lattice parameter. The adjusting is achieved utilizing either a thinning process or a thermal dilution process depending on which parameters are fixed and which are adjustable.

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