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(54) Title: METHOD FOR FABRICATING GaNAsSb SEMICONDUCTOR

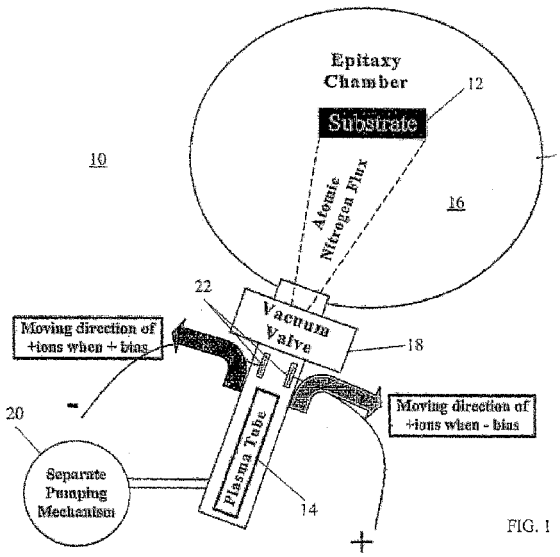


FIG. 1

(57) Abstract: A method for fabrication of a semiconductor of gallium nitride arsenide antimonide (GaNAsSb) on a substrate wherein the fabrication is performed at a fabrication temperature followed by annealing at an annealing temperature for an annealing time; wherein at least one of: the fabrication temperature, annealing temperature and annealing time, is controlled for controlling defect formation in the semiconductor so as to achieve predetermined performance characteristics of the semiconductor. The method can include growing epitaxial layers of gallium arsenide antimonide (GaAsSb) on a substrate and subjecting the epitaxial layers to exposure of nitrogen atoms from a nitrogen plasma source; the epitaxial layers being isolated from the nitrogen plasma source during plasma ignition.

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