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(54) Title: METHOD FOR MANUFACTURING A LAYER OF GALLIUM NITRIDE OR GALLIUM AND ALUMINUM NITRIDE

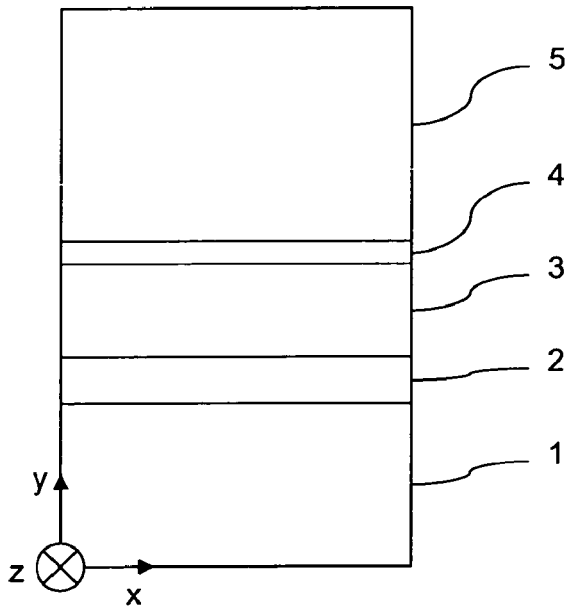


FIG. 2

(57) Abstract: The present invention relates to a method for manufacturing a crack-free monocrystalline layer (5) of nitride with a composition of $Al_xGa_{1-x}N$, where $0 \leq x \leq 0.3$, on a substrate (1) likely to generate tensile stress in the layer, said method comprising the following steps: a) the formation, on the substrate (1), of a nucleation layer (2) b) the formation, on the nucleation layer (2), of a monocrystalline intermediate layer (3) c) the formation, on the intermediate layer (3), of a monocrystalline seed layer (4) d) the formation, on the seed layer (4), of the monocrystalline layer (5) of $Al_xGa_{1-x}N$ nitride, This method is characterized in that: - the material of the intermediate layer (3) is aluminum and gallium nitride; - the material of the seed layer (4) is an AlBN compound in which the boron content is between 0 and 10%; - the ratio between the thickness of the seed layer (4) and the thickness of the intermediate layer (3) is between 0.05 and 1; - the temperature of forming the seed layer (4) is 50 to 150°C higher than the temperature of forming said crack-free monocrystalline layer (5) of $Al_xGa_{1-x}N$ nitride.

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