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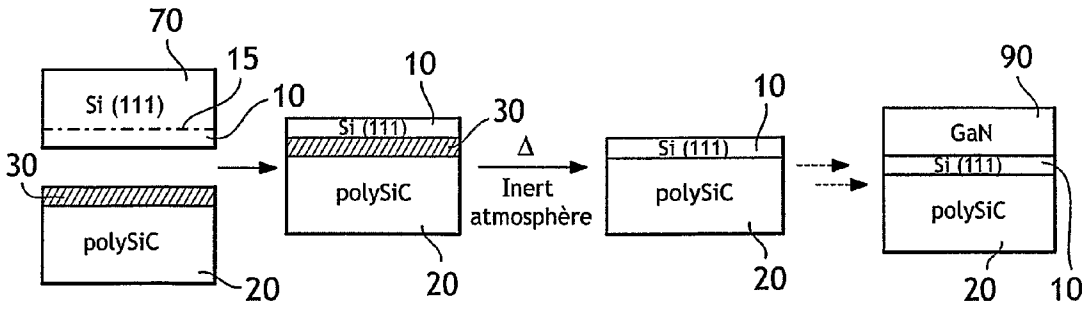
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(54) **Title:** METHOD OF FABRICATION OF HIGHLY HEAT DISSIPATIVE SUBSTRATES



(57) **Abstract:** The invention relates to a method for fabricating a composite structure having heat dissipation properties greater than a bulk single crystal silicon structure having the same dimensions, the structure comprising a support substrate, a top layer and an oxide layer between the support substrate and the top layer, the method comprising the steps of: a) providing a top layer made of a crystalline material, b) bonding the top layer with a support substrate made of a polycrystalline material having high heat dissipation properties, such that an oxide layer is formed at the bonding interface, in order to obtain said structure, characterized in that it further comprises a heat treatment of the structure in an inert or reducing atmosphere at a predetermined temperature and a predetermined duration to increase the heat dissipation properties by dissolving at least a part of the oxide layer.

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