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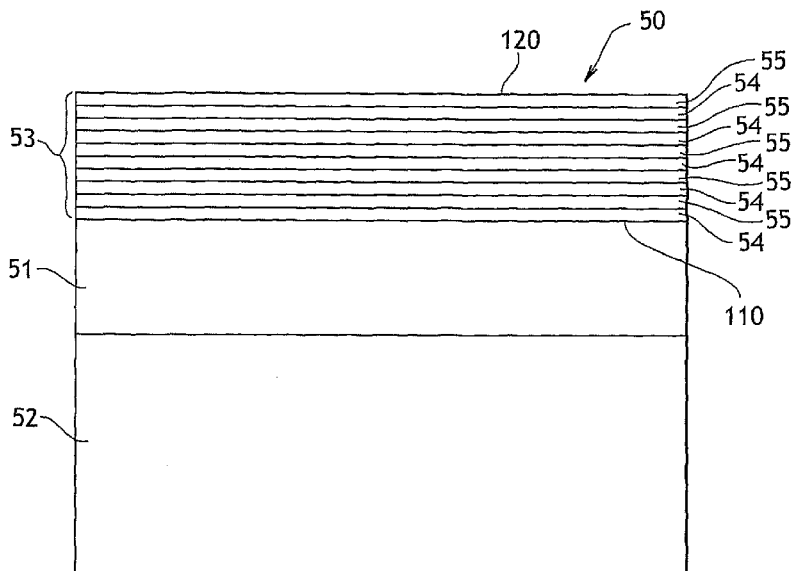
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(54) Title: HEMT PIEZOELECTRIC STRUCTURES WITH ZERO ALLOY DISORDER



(57) Abstract: Electronic circuits dedicated to high frequency and high power applications based on Gallium nitride (GaN) suffer from reliability problems. The main reason is a non-homogenous distribution of the electronic density in these structures that originates from alloy disorders at the atomic and micrometric scale. This invention provides means of manufacturing semiconducting structures based on nitrides of III elements (Al, Ga, In) / N perfectly ordered along a preferred crystalline axis. To obtain this arrangement, the ternary alloy barrier layer is replaced by a barrier layer composed of alternations of binary alloy barrier layers (54, 55). The lack of fluctuation in the composition of these structures improves electron transport properties and makes the distribution more uniform.

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