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(54) Title: A VERTICAL HEMT, AN ELECTRICAL CIRCUIT, AND A METHOD FOR PRODUCING A VERTICAL HEMT

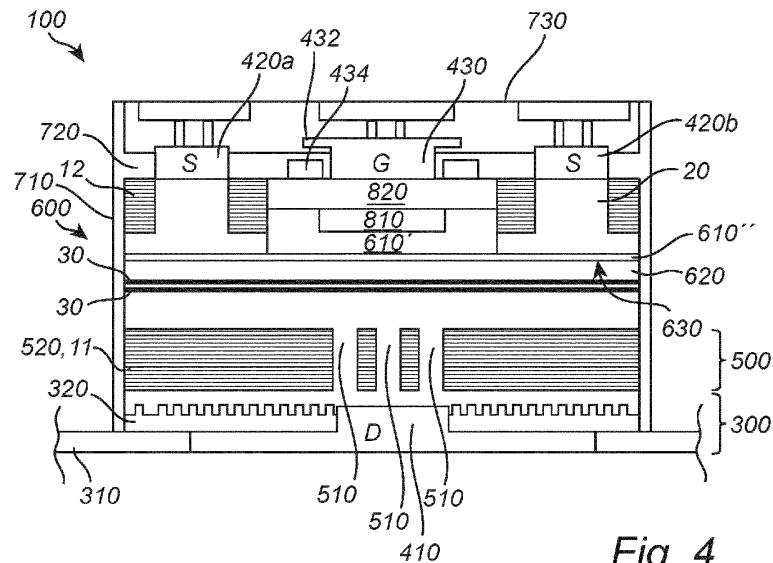


Fig. 4

(57) Abstract: A vertical high-electron-mobility transistor, HEMT (100), comprising: a substrate (310); a drain contact (410), the drain contact being a metal contact via through said substrate; a pillar layer (500) arranged above the drain contact (410) and comprising at least one vertical pillar (510) and a supporting material (520) laterally enclosing the at least one vertical pillar (510); a heterostructure mesa (600) arranged on the pillar layer (500), the heterostructure mesa (600) comprising an AlGaN-layer (610) and a GaN-layer (620), together forming a heterojunction (630); at least one source contact (420a, 420b) electrically connected to the heterostructure mesa (600); a gate contact (430) arranged on said heterostructure mesa (600), and above the at least one vertical pillar (510); wherein the at least one vertical pillar (510) is forming an electron transport channel between the drain contact (410) and the heterojunction (630).

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