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(54) Title (EN): GROUP III-V SEMICONDUCTOR DEVICES HAVING ASYMMETRIC SOURCE AND DRAIN STRUCTURES

(54) Title (FR): DISPOSITIFS À SEMI-CONDUCTEUR DU GROUPE III-V AYANT DES STRUCTURES DE SOURCE ET DE DRAIN ASYMÉTRIQUES

(57) Abstract:

(EN): Group III-V semiconductor devices having asymmetric source and drain structures and their methods of fabrication are described. In an example, an integrated circuit structure includes a gallium arsenide layer on a substrate. A channel structure is on the gallium arsenide layer. The channel structure includes indium, gallium and arsenic. A source structure is at a first end of the channel structure and a drain structure is at a second end of the channel structure. The drain structure has a wider band gap than the source structure. A gate structure is over the channel structure.

(FR): L'invention porte sur des dispositifs à semi-conducteur du groupe III-V ayant des structures de source et de drain asymétriques, et sur leurs procédés de fabrication. Dans un exemple, une structure de circuit intégré comprend une couche d'arséniure de gallium sur un substrat. Une structure de canal se trouve sur la couche d'arséniure de gallium. La structure de canal comprend de l'indium, du gallium et de l'arsenic. Une structure de source se trouve à une première extrémité de la structure de canal et une structure de drain se trouve à une seconde extrémité de la structure de canal. La structure de drain a une bande interdite plus large que celle de la structure de source. Une structure de grille se trouve au-dessus de la structure de canal.

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