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(54) **METHOD AND SYSTEM FOR FABRICATING  
REGROWN FIDUCIALS FOR  
SEMICONDUCTOR DEVICES**

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(57) **ABSTRACT**

A method of forming regrown fiducials includes providing a III-V compound substrate having a device region and an alignment mark region. The III-V compound substrate is characterized by a processing surface. The method also includes forming a hardmask layer having a first set of openings in the device region exposing a first surface portion of the processing surface of the III-V compound substrate and a second set of openings in the alignment mark region exposing a second surface portion of the processing surface and etching the first surface portion and the second surface portion of the III-V compound substrate using the hardmask layer as a mask to form a plurality of trenches. The method also includes epitaxially regrowing a semiconductor layer in the trenches to form the regrown fiducials extending to a predetermined height over the processing surface in the alignment mark region.

