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(54) **HIGH MOBILITY DEVICES AND METHODS OF FORMING SAME**

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CPC H01L 21/823431; H01L 21/845; H01L 21/823821
See application file for complete search history.

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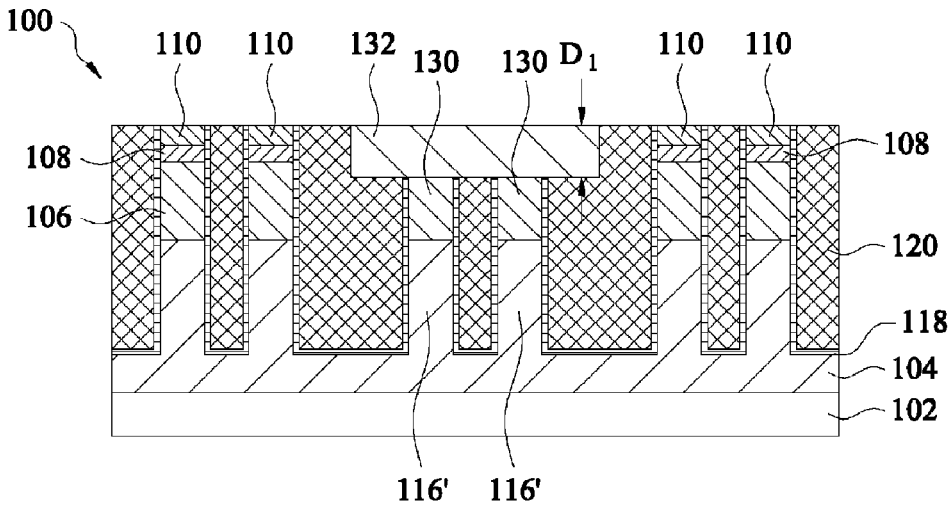
(57) **ABSTRACT**

An embodiment method includes forming a first fin and a second fin over a semiconductor substrate. The first fin includes a first semiconductor strip of a first type, and the second fin includes a second semiconductor strip of the first type. The method further includes replacing the second semiconductor strip with a third semiconductor strip of a second type different than the first type. Replacing the second semiconductor strip includes masking the first fin using a barrier layer while replacing the second semiconductor strip and performing a chemical mechanical polish (CMP) on the third semiconductor strip using a slurry that planarizes the third semiconductor strip at a faster rate than the barrier layer. In some embodiments, the method may further include depositing a sacrificial layer over a wafer containing the first and second fins and performing a non-selective CMP to substantially level a top surface of the wafer.

20 Claims, 10 Drawing Sheets