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(54) **SEMICONDUCTOR DEVICE WITH DIFFUSION SUPPRESSION AND LDD IMPLANTS AND AN EMBEDDED NON-LDD SEMICONDUCTOR DEVICE**

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(57) **ABSTRACT**

The present disclosure provides a method for forming a semiconductor device containing MOS transistors both with and without source/drain extension regions in a semiconductor substrate having a semiconductor material on either side of a gate structure including a gate electrode on a gate dielectric formed in a semiconductor material. In devices with source/drain extensions, a diffusion suppression species of one or more of indium, carbon and a halogen are used. The diffusion suppression implant can be selectively provided only to the semiconductor devices with drain extensions while devices without drain extensions remain diffusion suppression implant free.