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## (54) UNIFORM TRENCHES IN SEMICONDUCTOR DEVICES AND MANUFACTURING METHOD **THEREOF**

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#### (57)**ABSTRACT**

The present disclosure describes a semiconductor device having radiation-sensing regions separated by trench isolation structures. The semiconductor structure includes a first trench fill structure on a substrate and a second trench fill structure on the substrate. The first trench fill structure has a first width and a convex bottom surface. The second trench fill structure has a concave bottom surface and a second width greater than the first width.

