

SEMICONDUCTOR STRUCTURE AND MANUFACTURING METHOD THEREOF

ABSTRACT

The present application provides a semiconductor structure and a manufacturing method thereof, and relates to the technical field of semiconductors, to resolve the technical problem of poor stability of a semiconductor structure. The manufacturing method comprises: forming a first insulating layer on a substrate, where a plurality of active pillars are arranged at intervals along a first direction and a second direction in the first insulating layer, and the plurality of active pillars extend along a third direction; partially removing the first insulating layer, to form a plurality of first trenches extending along the third direction, where each of the first trenches exposes the substrate, and is located between two adjacent columns of active pillars; forming an isolation layer in each of the first trenches; removing at least a part of the first insulating layer between adjacent isolation layers, to form a first filling space, where the first filling space exposes a peripheral surface of a middle region of the active pillar; and forming a gate structure on the exposed peripheral surface of the active pillar, where the gate structures are integrated along the second direction. The material of the isolation layer is adjusted, to reduce the collapsing possibilities of the isolation layer, thereby improving the stability of the semiconductor structure.

[Fig. 3]