METHOD FOR FORMING L-SHAPED SPACERS WITH PRECISE WIDTH CONTROL

Abstract

A method of fabrication of L-shaped spacers in a semiconductor device. A gate structure is provided over a substrate. We form a first dielectric layer over the gate dielectric layer and the substrate. Next, a second dielectric layer is formed over the first dielectric layer. Then, we form a third dielectric layer over the second dielectric layer. The third dielectric layer is anisotropically etched to form a disposable spacer on the second dielectric layer. The second dielectric layer and the first dielectric layer are anisotropically etched using the disposable spacer as a mask to form a top and a bottom L-shaped spacer. The disposable spacer is removed. In preferred embodiments, the first, second and third dielectric layers are formed by atomic layer deposition (ALD) or ALCVD processes.

FIGURE 5



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