INTERFACE IMPROVEMENT BY ELECTRON BEAM PROCESS

ABSTRACT

A process for bonding layers within a semiconductor device includes the steps of: (a) applying a first dielectric layer above a substrate, (b) applying a second dielectric layer on the first dielectric layer, and (c) exposing the dielectric layers to electron beam irradiation under conditions sufficient to cure the second dielectric layer and cure at least a portion of the first dielectric layer adjacent to the second dielectric layer. The interface adhesion is thus increased between the first dielectric layer and the second dielectric layer. Similarly, electron beam irradiation can be used to increase the interface adhesion between a dielectric layer and a metal layer formed on the dielectric layer, or to increase the interface adhesion between a metal layer and a dielectric layer formed on the metal layer.

FIG. 1A