Diffusion Barrier For Damascene Structures

ABSTRACT

A semiconductor structure having a via formed in a dielectric layer is provided. The exposed pores of the dielectric material along the sidewalls of the via are partially or completely sealed. Thereafter, one or more barrier layers may be formed and the via may be filled with a conductive material. The barrier layers formed over the sealing layer exhibits a more continuous barrier layer. The pores may be partially or completely sealed by performing, for example, a plasma process in an argon environment.

(FIG. 1a)