IMPROVEMENT OF SiOC PROPERTIES AND ITS UNIFORMITY IN BULK FOR DAMASCENE APPLICATIONS

ABSTRACT

A method of forming a low-k dielectric material layer comprising the following steps. A first dielectric material sub-layer is formed over a substrate. The first dielectric material sub-layer is treated with an energy treatment to form a hardened layer on the upper surface of the first dielectric material sub-layer. A second dielectric material sub-layer is formed over the hardened layer, wherein the first dielectric sub-layer, the hardened layer and the second dielectric sub-layer comprise the low-k dielectric material layer. And a dual damascene structure and a dielectric material structure formed thereby.

**(FIG. 1)**