A CONDUCTIVE COMPOUND CAP LAYER

Abstract

An interconnect structure and method thereof comprising: a interconnect and a compound cap layer. The interconnect has a compound cap layer thereover. The interconnect is preferably comprised of copper. The compound cap layer is preferably comprised of a copper-metal (Cu-Me) compound or a metal; and is more preferably comprised of a Cu-Sn compound or Ni metal. A dielectric cap layer is formed over the compound cap layer. The compound cap layer can provide a barrier capping effect to the Cu to minimize the out-diffusion of Cu and therefore improve the electro-migration performance of Cu. The compound cap layer has excellent adhesion to dielectric cap layers, especially SiN and SiC dielectric cap layers.

Figure 1C-1