

METHODS OF SPUTTERING A PROTECTIVE COATING ON A SEMICONDUCTOR SUBSTRATE

ABSTRACT OF THE DISCLOSURE

Methods of depositing a protective coating of a silicon-containing or metallic material onto a semiconductor substrate include sputtering such material from an electrode onto a semiconductor substrate in a plasma processing chamber. The protective material can be deposited onto a multi-layer mask overlying a low-k material and/or onto the low-k material. The methods can be used in dual damascene processes to protect the mask and enhance etch selectivity, to protect the low-k material from carbon depletion during resist strip processes, and/or protect the low-k material from absorption of moisture.

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Figure 1