ABSTRACT

Increased sidewall coverage by a sputtered material is achieved by generating an ionizing plasma in a relatively low pressure sputtering gas. By reducing the pressure of the sputtering gas, it is believed that the ionization rate of the deposition material passing through the plasma is correspondingly reduced which in turn is believed to increase the sidewall coverage by the underlayer. Although the ionization rate is decreased, sufficient bottom coverage of the by the material is maintained. In an alternative embodiment, increased sidewall coverage by the material may be achieved even in a high density plasma chamber by generating the high density plasma only during an initial portion of the material deposition. Once good bottom coverage has been achieved, the RF power to the coil generating the high density plasma may be turned off entirely and the remainder of the deposition conducted without the high density plasma. Consequently, it has been found that good sidewall coverage is achieved in the latter part of the deposition.

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