A STUDY OF INTERCONNECT RELIABLITY IN ULSI FABLICATION

Chul Gi Ko
Semiconductor Research and Development Laboratories
Hyundai Electronic Industries Co. Ltd., Kyungki-do, 467-860

With the advent of deep submicron technology, achieving metallization that meets step coverage and reliability requirements reproducibly is one of the most challenging tasks to be solved. Silicide and refractory metal CVD have been widely studied as a new material for the metallization. Also multi level metallization and diffusion barrier metal techniques were utilized for the integrity and reliability improvement. However conventional sputtering method can not satisfy submicron contact plugging. Multi-step sputtering, high temperature reflow and new concept sputtering(using collimator) are nowadays extensively investigated and utilized, while metal CVD such as Al, Cu and TiN are the most promising candidates for the future devices. To realize a reliable and cost effective interconnect for ULSI fabrication using metal CVD, it is thought that deposition rate, electrical resistance and multi component precursors for metal CVD are important factors to be carefully considered.

Chul Gi Ko ; TEL (0336) 30-2151, FAX (0336) 30-2113