COPPER BARRIER & ADHESION LAYER DEPOSITION TECHNOLOGY

In the course of development of Tegal's Nanolayer Deposition Technology, a number of patents pertaining to engineered adhesion layers and diffusion barrier layers for copper metallization technology were awarded to Tegal.

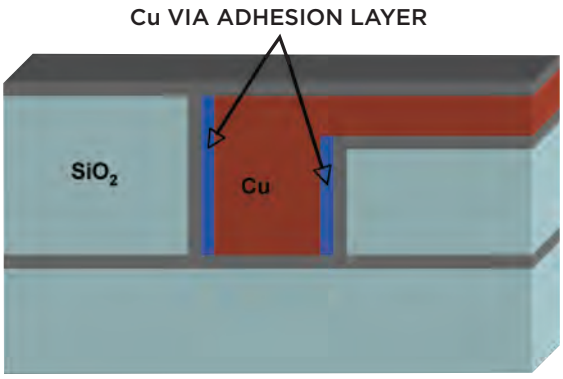
The patents in this portfolio include structures with graded adhesion layers for copper and other metallization schemes, nitridized diffusion barriers, and methods for damage-free deposition on sensitive low-k intermetal dielectrics, and on damage-sensitive polymer layers.

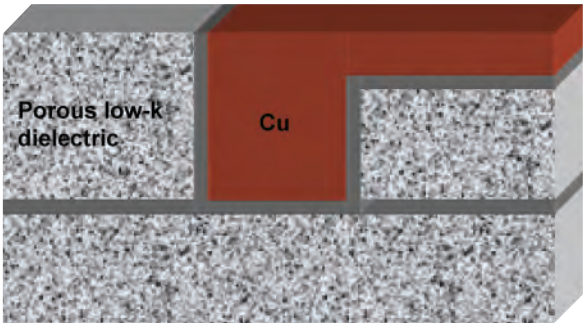
U.S. PATENTS FOR Cu BARRIER & ADHESION LAYER DEPOSITION TECHNOLOGY

6,495,449
6,670,266
6,777,331
6,919,101
7,087,522
7,163,721

COPPER DEPOSITION TECHNOLOGY PATENT HIGHLIGHTS

- Deposition of adhesion layers for Cu films
- Deposition of Ti and Ta-based films on porous high-k dielectrics
- Deposition of metal layers on porous high-k dielectrics
- Deposition of barrier and adhesion layers on polymers





- Ti and Ta adhesion layers
- Multi-layer diffusion barriers

- Pre-deposition, in situ anneal + barrier layer deposition process for porous low-k dielectrics
- Damage-free process for deposition on polymers

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