

Title (en)
SILANE-BASED OXIDE ANTI-REFLECTIVE COATING FOR PATTERNING OF METAL FEATURES IN SEMICONDUCTOR MANUFACTURING

Title (de)
SILAN-BASIERTE ANTIREFLEXIONSOXIDSCHICHT ZUR METALLSTRUKTURIERUNG IN HALBLEITERHERSTELLUNGSPROZESS

Title (fr)
REVETEMENT ANTIREFLECHISSANT D'OXYDE A BASE DE SILANE POUR LA FORMATION DE MOTIFS METALLIQUES DANS LA FABRICATION DE SEMI-CONDUCTEURS

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Application
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Abstract (en)
[origin: WO0031782A1] A silane-based oxide (40) having a thickness of about 300 nm or less is formed for use in an anti-reflective coating for patterning metal interconnects having small dimensions (e.g., 0.18 micron or less) and large aspect ratios. The oxide (40) is formed in such a way that it does not react with a popular deep ultraviolet photoresist (38). The reaction, known as "footing" (18), can result in a loss of the intended feature dimensions. In one embodiment of the method, the silane-based oxide (40) is deposited using a non-nitrogen carrier gas for the silane. In an alternate embodiment, a nitrogen carrier gas is used and the oxide (40) is subsequently exposed to an N₂O plasma (2). The resulting oxide (40) can be made using a low-cost, high-throughput, and low-defect process as compared to other oxide formation methods.

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