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Reliability Aspects of Metallization

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Multi-layer interconnection with small dimensions is the one of the key technologies for further advancements in forthcoming submicron VLSIs. There are, however, many problems associated with reliability of interconnections, such as electromigration of Al interconnections, degradation of contacts to shallow junctions, process-induced damage.

The purpose of this rump session is to focus on reliability problems in metallization, and to make those problems clear. Examples of the major issues are:

1 Do you have a clear physical image of the Si-metal contact?
2 What problems do you have with the reliability of Al interconnections?
3 How will the problems of contact reliability and yield of shallow junction be solved?
4 What materials will be used for barrier metal in Si-Al contact?
5 What are the advantages of titanium-silicide over other silicide?