

6. Materials and Processes for Silicon Technology

6.1 Si Oxides and LOCOS Process

6.1.1 Si Dioxide

6.1.2 LOCOS Process

6.1.3 Summary to: 6.1 Si Oxide and LOCOS Process

6.2 Chemical Vapor Deposition

6.2.1 Silicon Epitaxy

6.2.2 Oxide CVD

6.2.3 CVD for Poly-Silicon, Silicon Nitride and Miscellaneous Materials

6.2.4 Summary to: 6.2 Chemical Vapor Deposition

6.3. Physical Processes for Layer Deposition

6.3.1 Sputter Deposition and Contact Hole Filling

6.3.2 Ion Implantation

6.3.3 Miscellaneous Techniques and Comparison

6.3.4 Summary to: 6.3 Physical Processes for Layer Deposition

6.4 Etching Techniques

6.4.1 General Remarks

6.5.2 Chemical Etching

6.4.3 Plasma Etching

6.4.4 Summary to: 6.4 Etching Techniques

6.5 Lithography

6.5.1 Basic Lithography Techniques

6.5.2 Resist and Steppers

6.5.3 Summary to: 6.5 Lithography

6.6 Summary:

6.6.1 Materials and Processes for Silicon Technology