Preface

Direct Observation of the Growth and Movement of Electromigration Voids Under Passivation p. 1

Statistics of Stress Migration and Electromigration Failures of Passivated Interconnect Lines p. 15

Effects of Oxygen Addition During Al Deposition on Stress-Migration Induced Failure in Al Lines p. 33

X-Ray Determination of Strains, Stress, and Relaxation in Interconnect Metallizations p. 46

Thermal Stress and Plastic Deformation of Al Fine Line Structures: Effects of Oxide Confinement and Line Geometry p. 62

Predictive Modeling for Stress-Induced Void Formation in Al Lines p. 100

Degradation of Passivated Aluminum Metallization by Mechanical and Electrical Stress p. 111

In-Situ, High Temperature X-Ray Stress Determination in Patterned, Passivated Al Interconnects p. 126

Analysis of Stress-Induced Void Nucleation and Growth in Passivated Interconnect Lines p. 137

Characterization of Stress Migration in Sub-Micron Metal Interconnects p. 153

Electromigration Reliability of AlCu Interconnects with W Studs p. 165

Reliability of Single-Crystal Aluminum Lines and Its Limitation p. 179

Stages of Damage Formation by Electromigration in Line/Stud Structures p. 195

In-Situ Observation of Electromigration in Au Using Atomic Force Microscopy p. 211

Role of Evolved Stress in Electromigration Degradation p. 220

Stress Evolution During Stress Migration and Electromigration in Passivated Interconnect Lines p. 231

Modeling of Microstructures and Their Effect on Interconnect Reliability p. 254

Integrated Process Design Effects on the Mechanical Behavior of Layered Interconnects p. 270

Prediction of Electromigration Lifetimes By Unit-Failure Model (UFM) in Al Stripes p. 280

Electromigration - Simulation and Experiment p. 290

Author Index p. 301

Table of Contents provided by Blackwell's Book Services and R.R. Bowker. Used with permission.