# Table of Contents

**Preface**  
iii

**Chapter 1**  
**Damascene Copper Interconnects**  

(Invited) Integration Challenges for Copper Damascene Electroplating  
*U. G. Stöckgen, S. Wehner, J. Heinrich, A. Kiesel and R. Liske*  
3  

Chemical Repair of Plasma Damaged Porous Ultra Low-k SiOCH Film using a Vapor Phase Process  
*T. Oszinda, M. Schaller and S. E. Schulz*  
19  

Addition of PEG-Thiol to Cu Electroless Plating Bath for Realizing Perfect Conformal Deposition in Through-Si Via Holes of 3-D Integration  
*F. Inoue, T. Yokoyama, S. Tanaka, K. Yamamoto and S. Shingubara*  
31  

Influence of Carbon Nanotubes on the Electrodeposition of Copper Interconnects  
*T. Chowdhury and J. F. Rohan*  
37  

Effects of Slurry Distribution using Diaphragm and Centrifugal Pumps on the Defectivity in a Cu CMP Process  
*R. Donis, M. Fisher and L. Bauck*  
47  

Effect of Functional Groups of Complexing Agents on the Performance of Cu CMP Slurry  
*Y. Kim, J. Bae and J. Kim*  
55  

Effect of 5-phenyl-1H-tetrazole on Copper Dissolution for e-CMP  
*P. Cojocaru, L. Magagnin and P. L. Cavallotti*  
65  

**Chapter 2**  
**3D Interconnects**  

Miniatursation of a Wireless Sensor Node by Means of 3D Interconnects  
73
(Invited) 3D Interconnect Technologies for Advanced MEMS/NEMS Applications
N. Lietaer, M. Taklo, K. Schjølberg-Henriksen and P. Ramm

(Invited) Through-Silicon Via Technology for 3D Applications
H. G. Philipsen, O. Lühn, Y. Civale, Y. Wang, D. Sabuncuoglu Tezcan and W. Ruythooren

Copper Electrodeposition Parameters Optimization for Through-Silicon Vias Filling
E. Delbos, L. Ömnès and A. Etcheberry

Copper Plating for 3D Interconnects

High Speed Copper Electrodeposition for Through Silicon Via (TSV)
K. Kondo, Y. Suzuki, T. Saito and N. Okamoto

(Invited) Reliability of Through Silicon Via Technologies
A. Klumpp and P. Ramm

Chapter 3
Poster Session: Processing, Materials, and Integration of Damascene and 3D Interconnects

Evaluation of Stability and Reactivity of Solutions by In Situ Transmittance in Electroless Deposition
K. Park, H. Koo, T. Lim and J. Kim

The Functional Group Effect of Complexing Agent on Cu CMP in the Neutral Environment
J. Bae, Y. Kim and J. Kim

Author Index