

# Table of Contents

## Preface

<b>Essential Aspects of Chemical Mechanical Planarization for Oxide Semiconductor</b> H.H. Cheng, H.Y. Tsai and Y.L. Huang	1
<b>A Novel Chemical-Mechanical Planarization Technology Using Pre-Thin-Surface Grinding in ULSI Manufacturing Process</b> J. Watanabe, R. Etoh and M. Hirano	25
<b>Some Essentials of Simulating Nano-Surfacing Processes Using the Molecular Dynamics Method</b> W.C.D. Cheong, L.C. Zhang and H. Tanaka	31
<b>Assessment of the Exit Defects in Carbon Fibre-Reinforced Plastic Plates Caused by Drilling</b> H.J. Zhang, W.Y. Chen, D.C. Chen and L.C. Zhang	43
<b>Grinding of Ceramics: Strength, Surface Features and Grinding Conditions</b> T.S. Liu, B.A. Latella and L.C. Zhang	53
<b>Grinding Burn Mechanism of Directionally Solidified Superalloy</b> M. Chen, F.H. Sun and B.Y. Xue	61
<b>Wear Mechanism of Diamond Cutting Tool in Machining of Steel</b> H. Tanaka, S. Shimada, N. Ikawa and M. Yoshinaga	69
<b>A Friction Model for Free-Machining Steels and Its Applicability to Machinability Analysis</b> K. Maekawa, A. Kubo and T.H.C. Childs	79
<b>Improvement of Friction and Wear Properties of CVD-SiC Films with New Surface Finishing Method 'ELID-Grinding'</b> T. Kato, H. Ohmori, C. Zhang, T. Yamazaki, Y. Akune and K. Hokkirigawa	91
<b>A New Device of Abrasive Jet Machining and Application to Abrasive Jet Printer</b> T. Kuriyagawa, T. Sakuyama, K. Syoji and H. Onodera	103
<b>On-Machine Monitoring of the Wheel-Working Surface Condition with the Relative Frequency Distribution of its Profile</b> S. Shimizu and H. Sakamoto	111
<b>On-Machine Monitoring of the Wheel Working Surface Condition with the Fractal Dimension Analysis of Its Profile</b> H. Sakamoto and S. Shimizu	121
<b>Fabrication of Metal-Bonded Grinding/Polishing Tools by Greentape Laser Sintering Method</b> K. Maekawa, Y. Yokoyama and I. Ohshima	133
<b>Abrasive Capacity of Thin Film Diamond Structures</b> J. Andersson, P. Hollman and S. Jacobson	141
<b>Micro Hole Machining of Borosilicate Glass through Electrochemical Discharge Machining (ECDM)</b> C.T. Yang, S.S. Ho and B.H. Yan	149
<b>Micro-Spherical Lens Mold Fabrication by Cup-Type Metal-Bond Grinding Wheels Applying ELID (Electrolytic In-Process Dressing)</b> T. Matsuzawa, H. Ohmori, C. Zhang, W. Li, Y. Yamagata, S. Moriyasu and A. Makinouchi	167
<b>Threading of Inclusion Modified Steels with Coated Carbide Tools</b> E.O. Ezugwu and C.I. Okeke	177
<b>CVD Diamond Coating Technologies and Application in Cutting Abrasive Materials</b> M. Chen, F.H. Sun and Z.M. Zhang	193