

Table of Contents

Preface	iv
Finite Element Analysis of Particle Reinforced Composite Using Different Cell Models J.P. Fan, C.Y. Tang, C.L. Chow and C.P. Tsui	1
Active Finite Element Method for Simulating the Contraction Behavior of a Muscle-Tendon Complex C.P. Tsui, C.Y. Tang, C.L. Chow, S.C. Hui and Y.L. Hong	9
Microstructure of the Fiber/Matrix of Chafer Cuticle B. Chen, X. Feng, J.H. Fan and X.L. Wu	15
Residual Stress and Stress-Strain Relationship of Electrodeposited Nickel Coatings Y.C. Zhou, Y.P. Jiang and Y. Pan	21
Failure of Thermal Barrier Ceramic Coating Induced by Buckling Due to Temperature Gradient and Creep W.G. Mao and Y.C. Zhou	31
Cyclic Stress-Strain Behavior and Thermomechanical Effect in Metal Matrix Composites H.G. Kim	41
Optimization of Residual Thermal Stress in SiC/C Plasma Facing Material for Future Tokamak Facilities of China C.C. Ge, W.B. Cao and A.H. Wu	51
Influence of Surface Properties on Microscratch Durability of Aluminum Nitride Semiconductor Processing Component L. Chouanine, M. Takano, F. Ashihara, O. Kamiya and M. Nishida	59
Thermal Shock and Thermal Fatigue of Ferroelectric Thin Film due to Pulsed Laser Heating X.J. Zheng, S.F. Deng, Y.C. Zhou and N. Noda	69
Fatigue Damage of Materials with Small Crack Calculated by the Ratio-Method under Cyclic Loading Y.G. Yu	79
Dynamic Strength of Steel Welds under High Strain Rate Loading B. Wang and G.X. Lu	87
Synthesis and Mechanical Properties of Nanostructured Mg-Al-Nd Alloys C. Yan, L. Ye, L.L. Yan, L. Lu, M.O. Lai and Y.W. Mai	93
Study on Fracture Behaviors of High-Density Polyethylene Pipe Material Based on Local Approach F.J. Qi, L.X. Huo and H.Y. Jing	101
Effects of Gun Tube Profile and Sabot on Stresses and Velocity of Long Rod Penetrator J.B. Kim	109
Numerical Study on Cracking Process of Masonry Structure S.H. Wang, Y.B. Zhang, C.A. Tang and L.C. Li	117
Micromechanical Model for Simulating Hydraulic Fractures of Rock T.H. Yang, L.G. Tham, S.Y. Wang, W.C. Zhu, L.C. Li and C.A. Tang	127
Residual Stress and Surface Molding Conditions in Thin Wall Injection Molding H.K. Lee, G.E. Yang and H.G. Kim	137
Symplectic Solution for a Plane Couple Stress Problem W.X. Zhong, G. Fang and W. Yao	143
Multi-Scale and Finite Element Analysis of the Mixed Boundary Value Problem in a Perforated Domain under Coupled Thermoelasticity Y. Feng and J. Cui	153
Simulation of Multiple Hydraulic Fracturing in Non-Uniform Pore Pressure Field L.C. Li, C.A. Tang, L.G. Tham, T.H. Yang and S.H. Wang	163
Mechanics Framework for Micron-Scale Planar Structures A.C.M. Chong, F. Yang, D.C.C. Lam and P. Tong	173
A Piezoelectric Screw Dislocation Interacting with a Dielectric Crack in a Hexagonal Piezoelectric Material J.X. Liu and X.L. Liu	183

