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Nota di contenuto	Macro-, Meso-, Micro- and Nano-Mechanics of Materials; Preface; Table of Contents; Finite Element Analysis of Particle Reinforced Composite Using Different Cell Models; Active Finite Element Method for Simulating the Contraction Behavior of a Muscle-Tendon Complex; Microstructure of the Fiber/Matrix of Chafer Cuticle; Residual Stress and Stress-Strain Relationship of Electrodeposited Nickel Coatings; Failure of Thermal Barrier Ceramic Coating Induced by Buckling Due to Temperature Gradient and Creep; Cyclic Stress-Strain Behavior and Thermomechanical Effect in Metal Matrix Composites Optimization of Residual Thermal Stress in SiC/C Plasma Facing Material for Future Tokamak Facilities of ChinaInfluence of Surface Properties on Microscratch Durability of Aluminum Nitride Semiconductor Processing Component; Thermal Shock and Thermal Fatigue of Ferroelectric Thin Film due to Pulsed Laser Heating; Fatigue Damage of Materials with Small Crack Calculated by the Ratio-Method

under Cyclic Loading ; Dynamic Strength of Steel Welds under High Strain Rate Loading; Synthesis and Mechanical Properties of Nanostructured Mg-Al-Nd Alloys
Study on Fracture Behaviors of High-Density Polyethylene Pipe Material Based on Local ApproachEffects of Gun Tube Profile and Sabot on Stresses and Velocity of Long Rod Penetrator; Numerical Study on Cracking Process of Masonry Structure; Micromechanical Model for Simulating Hydraulic Fractures of Rock ; Residual Stress and Surface Molding Conditions in Thin Wall Injection Molding; Symplectic Solution for a Plane Couple Stress Problem; Multi-Scale and Finite Element Analysis of the Mixed Boundary Value Problem in a Perforated Domain under Coupled Thermoelasticity
Simulation of Multiple Hydraulic Fracturing in Non-Uniform Pore Pressure FieldMechanics Framework for Micron-Scale Planar Structures ; A Piezoelectric Screw Dislocation Interacting with a Dielectric Crack in a Hexagonal Piezoelectric Material ; Surface Electrode Problems in Piezoelectric Materials; Keywords Index; Authors Index

Sommario/riassunto

This compilation of selected papers has, as its principal objective, the discussion of state-of-the-art technologies and recent developments in the macro-, meso-, micro- and nano-mechanics of materials and structures. The focus is on the most recent advances in strength, fracture and mechanics of micro- and nano-structured materials. It also serves to narrow the gaps between conventional macro-/meso-systems and the emerging micro-/nano- materials technologies. The papers are arranged into two categories: ""Composite Materials; Thin Films and Coatings"" and ""Fracture, Fatigue and Strengths of