Table of Contents

Preface and Committee

Chapter 1: Plenary and Invited Talks

Application of the Continuous Rotating Detonation to Gas Turbine P. Wolański	3
Structural Response under Blast Loads - Simplified Numerical Analysis H. Hao and J. Li	13
A Study on Very High Cycle Fatigue Properties of Low Flammability Magnesium Alloy in Rotating Bending and Axial Loading T. Sakai, S. Kikuchi, Y. Nakamura and N. Ninomiya	27
Some Possibilities of Hypercumulative Regime of Jet Formations V. Minin, O. Minin and I. Minin	42
Deformation and Failure of Pre-Notched Thin Metal Plates Subjected to Confined Blast Loading	
H. Liu, P.W. Chen, B.Q. Guo, S.L. Zhang, H.B. Liu and E.F. An	49
Chapter 2: Mechanical Properties of Materials	
Dynamic Deformation Response of G33 Steel under High Temperature Y.J. Zhang, H.N. Cai, X.W. Cheng and S.Z. Zhao	61
The Correlation between Microstructure and Dynamic Mechanical Property of Heat Treated B20C Titanium Alloy Based on Different Forging Processes L.R. Huo, Q.B. Fan, R.H. Gao and F.C. Wang	71
Study on Preparation and Mechanical Properties of W-Cu Alloy with Low W-W Contiguity Z.Y. Hu, J.X. Liu, S.K. Li, Q.H. Zou and X. Wang	77
Effects of Silica Nanoparticle Addition on Dynamic Properties of Poly(lactic acid) M. Nishida, Y. Takeuchi, R. Natsume, N. Fukuda and H. Ito	83
Dynamic Behavior in Ti-5553 Alloy with β Phase under Compression Loading X. Xu, L. Wang, D.H. Zhao and W.W. Du	88
Sintering Mechanism of Ti-6Al-4V Prepared by SPS J.F. Lu, Z.H. Zhang, Z.F. Liu and F.C. Wang	97
Microstructure and Physical Properties of Nanocrystalline Aluminum Consolidated by Spark Plasma Sintering Z.F. Liu, Z.H. Zhang, Y.J. Sun and F.C. Wang	102
Microstructure and Mechanical Properties of TiB-Ti/Ti-6Al-4V Composites Fabricated by Spark Plasma Sintering	
L.F. Wang, Z.H. Zhang, T.J. Su and F.C. Wang Effect of Sintering Temperature on Microstructure and Mechanical Properties of Nanocrystalline Aluminum 5083 Alloy	107
Y.M. Teng, Z.H. Zhang and Z.Z. Yuan	113
Research on Compression Properties of Ni-Ti Shape Memory Alloys X. Zhang, S.Y. Yang and S.N. Yang	119
Effect of Isothermal Heat Treatment on Dynamic Properties of a High Strength Steel W.W. Du, Q. Wang, L. Wang and D. Wang	124
Plastic Flow Stress and Constitutive Model for H96 Brass Alloy P. Zhou, W.G. Guo and H.H. Wu	130
The Effect of Heat Treatment on the Microstructures and Dynamic Mechanical Properties of Near-β Ti-5553 Alloy C.Z. Liu, L. Wang and X. Xu	137
Study on the Evolution of Adiabatic Shear Band of a High Strength Steel W.W. Du, Q. Wang, D.H. Zhao and L. Wang	143

Chapter 3: Materials and Structures under Extreme Loading Conditions

The Ballistic Performance of Multi-Layer Kevlar Fabrics Impregnated with Shear Thickening Fluids	1.50
Y. Wang, S.K. Li and X.Y. Feng Three-Sheet Spot Welds of 5052 Aluminum Alloy: Weld Growth and Failure Behavior	153
F.Y. Yan, Z. Luo, Y.J. Chao, S.S. Ao, Y. Li and X.T. Cui	158
Research of the Anti-Penetration Mechanism for Titanium Alloys Armor Based on 3D Optical Scanning Technology	
Y.M. Xia, Q.B. Fan, R.H. Gao, G.J. Li, L.R. Huo and Y.P. Zhang	164
The Volume Strain Energy Density Factor Criterion for Sharp V-Notches under Mixed-Mode I and II	170
X.M. Liu, Y.M. Bian and Y.C. Liang Critical Dimensions of Tensile-Shear Specimen for Resistance Spot Welds	1/0
X.T. Cui, Y.J. Chao, Z. Luo, S.S. Ao and F.Y. Yan	177
Durability Experimental Method of RC Components Strengthened with FRP in Hot-Wet Environment H. Zhou, P.Y. Huang, G. Qin and D.M. Wei	183
The Experiment Study on Flash Spectrum Produced by Hypervelocity Impact	103
K. Zhang, Q.M. Zhang and R.R. Long	197
The Tensile Properties of PVB at Intermediate Strain Rate Using the <i>In Situ</i> Hopkinson Bar K. Li, R. Chen, H. Zhang and X. Wen	204
The Dynamic Behavior of High Speed Train Using Magnetorheological Technology on the Curve Track	
H.X. Deng, L.J. Zhou, S.Y. Zhao, W.H. Li, S.S. Sun, J. Zhang and L.D. Yu	210
Investigation of the Large Scale Borehole Soundless Cracking Experiment on the Concrete	
Members Q.J. Xu, N. Jiang, Y. Long, Y. Liao, T. Yang, R. Ji and D. Liu	219
Experimental Study on the Constitutive Relation of SPHSC under Uniaxial Compression	217
Loading H. Zhou, P.Y. Huang, X.Y. Guo and X.H. Zheng	227
II. Zhou, I. I. Huang, II. I. Ouo and II.II. Zhong	
Chapter 4: Computational Experiments and Simulation	
Experimental Study and Numerical Simulation of the Tensile Test for GH4169 Coated with YSZ Coating at High Temperature	
L.L. Wang, Q.B. Fan, H.M. Zhang and F.C. Wang	237
Validation of the Tabulated Johnson-Cook Model for a Dynamic Compression Simulation G.J. Li, Q.B. Fan, R.H. Gao, J.T. Liu and C. Miao	245
Analyzing Stress Wave Propagation in a Hollow Bar Loaded Three-Point Bend Fracture Test Using Numerical Methods	
R.A. Javed, S.F. Zhu, C.H. Guo and F.C. Jiang	252
Non-Intervisible Pose Estimation Based on Plannar Mirror J.B. Liu, G.C. Long and X. Li	261
Fabrication of Multi-Scale Grid Patterns as Deformation Carriers in Optical Methods Q.H. Wang, S.E. Ri, H. Tsuda, S. Kishimoto, Y. Tanaka and Y. Kagawa	271
Modified Quartet Structure Generation Set Reconstruction of Finite Element Model for Co-	
Continuous Ceramic Composites Q.X. Wang, H.M. Zhang, H.N. Cai and Q.B. Fan	278
Numerical Simulation of Damage Effective of Explosion in Buildings	. •
W.L. Xu, C. Wang, Y. Bi and S.P. Gao	291
Impulsive Control and Practical Generalized Synchronization of a Class of Uncertain Chaotic System with a Given Manifold J.X. Ding, C. Wang and Y. Bi	296
J.A. Ding, C. wang and T. Di	∠9U

Investigation of Mesh Dependency of Materials Fracture in the Finite Element Simulation of a Projectile Penetrating into a Target	• • •
J.T. Liu, Q.B. Fan, H.N. Cai and G.J. Li	302
Chapter 5: Advanced Diagnostic and Measurement Methods	
The Button Head Bullet Effects on the Incident Pulse of Split Hopkinson Press Bar J. Qu, G. Chen and G.P. Zou	311
Simultaneous Measurement of In-Plane and Out-of-Plane Deformations Using Dual-Beam	
Spatial-Carrier Digital Speckle Pattern Interferometry K. Liu, S.J. Wu, X.Y. Gao and L.X. Yang	316
ViBe with Adaptive Threshold Based on Energy Minimization L. Xie, X.H. Zhang, P.Y. Guo and G.C. Long	326
Experimental Measurement of Residual Stress on Thermal Spray Coatings with Moire Interferometry and Hole-Drilling Method J.G. Zhu and B.G. Zhang	335
3D Deformation and Strain Analysis in Uniaxial Compressive Coal Using Digital Volumetric Speckle Photography	333
X.Y. Lian, L.T. Mao and H.Y. Niu	341
Interior 3D-Strain Mapping in Opaque Materials Using Digital Volumetric Speckle Photography and X-Ray Micro Computer Tomography	
L.T. Mao, Q.W. Sun and F.P. Chiang	345
Numerical Model Building and Optimization of Concrete Based on the CT Images and Digital Volumetric Speckle Photography	
Y.L. Liu, Q.W. Sun, L.T. Mao, J. Gao and H.C. Su	349