

Table of Contents

Preface, Committees

Chapter 1: Shock Processing and Shock Production of Materials

Experimental Study on the Shock Consolidation of Ti+Si Powders N.F. Cui, P.W. Chen and C.X. Xu	3
Wire Mesh/Ceramic Particle Reinforced Aluminium Based Composite Using Explosive Cladding L.G. Robin, K. Raghukandan and S. Saravanan	9
Metallurgical and Mechanical Properties of Wire-Mesh Reinforced Dissimilar Explosive Cladding S. Saravanan and K. Raghukandan	14
Comparison between Simple Seam Welding and Adjacent Parallel Seam Welding by Magnetic Pulse Sheet-Welding Method T. Aizawa and K. Matsuzawa	19
Impact Joining of Similar and Dissimilar Metal Plates at their Edges M. Yamashita, Y. Tokushige and M. Nikawa	25
Detonation Synthesis of $\text{TiO}_2/\text{Na}_2\text{Ti}_6\text{O}_{13}$ Powders T.J. Zhao, H. Yan, X.J. Li and Y. Wang	31
Effect of Post Weld Heat Treatment on Al 5052-SS 316 Explosive Cladding with Copper Interlayer E. Elango, S. Saravanan and K. Raghukandan	35
Production of Wire Mesh Reinforced Aluminium Composites through Explosive Compaction K. Raghukandan and S. Saravanan	41
Production of AlN Nanopowders by Electrical Wire Explosion in Liquid Nitrogen X. Gao, P.W. Chen, X.G. Wang, C.X. Xu, Q.Z. Song and H. Yin	46
Experimental Study on the Explosive Welding of Thin Al/Cu Composite Plates Y. Yuan, P.W. Chen, E.F. An and J.R. Feng	52
Advanced Manufacturing from Macro- to Nanoscale: Impact and Shock Loading A.G. Mamalis	58

Chapter 2: Numerical Simulation of Explosion and Impact

Investigation on Microvoid Nucleation of High Temperature Nickel Based Superalloy under Thermal Shock X.C. Shang, Y.T. Xu and P.F. Wu	67
Numerical Simulation of Electrical Discharge Characteristics Induced by Underwater Wire Explosion R. Henzan, Y. Higa, O. Higa, K. Shimojima and S. Itoh	72
Blast Wave Mitigation from the Straight Tube by Using Water Part II - Numerical Simulation Y. Sugiyama, T. Homae, K. Wakabayashi, T. Matsumura and Y. Nakayama	78
A Basic Study on Shock Resistant Design for Explosion Pit T. Yamamoto, M. Nishi, M. Katayama and K. Hokamoto	84
Basic Research on Explosive Forming of Magnesium Alloy Plate M. Nishi, H. Sakaguchi, H. Iyama, L.Q. Ruan and M. Fujita	90
Numerical Analysis of Behavior on Opposing Unsteady Supersonic Jets in a Flow Field with Shields T. Kinoshita, H. Fukuoka and I. Umezu	96
Projectile Impact Testing Aluminum Corrugated Core Composite Sandwiches Using Aluminum Corrugated Projectiles: Experimental and Numerical Investigation K. Odaci, C. Kılıçaslan, A. Taşdemirci, A.G. Mamalis and M. Güden	102

Chapter 3: Dynamic Behavior of Materials at High Strain Rates

Bending Collapse Behavior of Tubular Structure under Impact M. Yamashita, N. Kunieda and M. Nikawa	111
Influence of Axial Length on Axially Compressed Aluminum Polygonal Tube K. Yokoya, M. Miyazaki and Y. Tojo	117
Effect of Graphene Nanoplatelets Content on Dynamic Mechanical Property of GNPs/Ti Composites X.N. Mu, H.N. Cai, H.M. Zhang, Q.B. Fan and Y. Wu	123
Damage Characteristics of Dynamically Induced Incipient Spall in Ultrapure Aluminum H. Peng, X.Y. Pei, J.D. Yu, M.L. Qi, J.S. Bai, H.L. He and P. Li	130
Study of Interaction between Unsteady Supersonic Jet and Vortex Rings Discharged from Elliptical Cell K. Kitazono, H. Fukuoka, N. Kuniyoshi, M. Yaga, E. Ueno, N. Fukuda and T. Takiya	137
Observation of Supersonic Jet Using Small Volume High-Pressure Shock Tube R. Takemura, H. Fukuoka, S. Enoki, S. Nakamura and K. Hiro	143
Blast Wave Mitigation from the Straight Tube by Using Water Part I - Small Scale Experiment T. Homae, Y. Sugiyama, K. Wakabayashi, T. Matsumura and Y. Nakayama	149
Effect of Heat Treatment on the Microstructure and Dynamic Behavior of Ti-10V-2Fe-3Al Alloy A.J. Liu, L. Wang and H.X. Dai	155
Dynamic Response Analysis of Mortar Block under Blast Loading Using Digital Image Correlation T. Saburi, T. Takahashi, S. Kubota and Y. Ogata	161

Chapter 4: Processing of Food by Shock Waves

Using Underwater Shockwaves for the Development of Processing Devices for Plant Materials A. Yasuda, O. Higa, E. Kuraya, Y. Higa, K. Shimojima, K. Hokamoto and S. Itoh	169
Experimental Verification of the Softening of the Pork Using Underwater Shock Waves Generated by Wire Electrical Discharges K. Shimojima, O. Higa, Y. Higa, A. Takemoto, H. Iyama, A. Yasuda, T. Watanabe, S. Tanaka, R. Fukami, M. Vesenjak, Z. Ren and S. Itoh	176