

Table of Contents

Preface

Chapter 1: Properties and Processing of Structural Metals

Stress-Strain Characteristics of Laser Powder Bed Fusion of AlSi10Mg Alloy: An Atomistic Analysis J. Nandy and S. Sahoo	3
Physical and Mechanical Characterization of HVOF-Deposited NiCrBSi Composite Coating S. Sahoo, P. Senapati, S. Mantry and H. Sutar	11
Impact of Dry Friction Stir Processing on Microstructure, Micro-Hardness and Tensile Characteristics of Mg-Al-Zn Alloy S.K. Sahu	27
Exploring the Anti-Corrosive Action of Plantain Extract on AA6063 Aluminium in a Saline Environment Using Electrochemical Techniques O.S.I. Fayomi, J.O. Atiba and O.G. Ogbuozobe	37
Effect of Mechanical Alloying on Structure and Hardness of FeCoNiCu Medium-Entropy Alloy M. Kovalenko, S. Teslia, V. Stezhkovyi and T. Soloviova	53
Multi-Criteria Decision-Making of EDM Parameters for Incoloy 800HT Alloy with Morphological Study S.S. Bhoi, S. Barik, B.K. Nanda, S.K. Mohapatra, S.B. Mishra, M.P. Satpathy and S.K. Nayak	65
Influence of Laser Power and Transition Zone Distance on the Tensile Behaviour of a Bimetallic Specimen Manufactured by Selective Laser Melting A. El Aoudi, A. Ouballouch and M. Nassraoui	75

Chapter 2: Fracture Mechanics and Failure Analysis of Materials and Structures

Advanced XRD Profiling of Residual and Total Stresses in Penstock Pipelines for Enhanced Structural Integrity S. Acuña, C. Seifert, D. Hincapie, A.F. Duque and A. Morales-Ortiz	101
Study on Strength Optimization of CFRP Single-Lap Joints Based on Local Pre-Curing Effect J.Z. Wang, D. Wang, X.Q. Zhang, J.W. Shi and D. Chen	115
Research on Fracture Mechanics of Non-Reciprocal Adhesive in Composite Single-Lap Bonded Joints Based on UEL X.Q. Zhang, D. Wang, J.Z. Wang, J.W. Shi and D. Chen	127
Fracture Analysis in Pressure Vessels: The Role of Nozzle Offset M. Bozkurt	139
Damage in 3D Printed Polymeric Structures: The Trade Off in Printing Parameters and Damage Resistance M. Khan	151
Stress-Strain State Analysis of Layered Composite Materials with Localized Layer Breakage D. Kolosov, I. Belmas, O. Bilous, H. Tantsura, S. Onyshchenko and K. Antonova	165