

Table of Contents

Preface

Chapter 1: Properties and Processing Technologies of Structural Metals

Effect of Microstructure Change on Mechanical Properties after High Temperature Forming of Ti-6Al-4V Alloy J.G. Lee, Y.J. Lee and D.G. Lee	3
Prediction of Axial Force on Dissimilar Aluminum Alloys Friction Stir Welding Using Design of Experiment A. Baisukhan and W. Nakkiew	9
Effect of Severe Shot Peening on Mechanical Properties and Fatigue Resistance of Wire Arc Additive Manufactured AISI 316L M. Hietala, T. Rautio, M. Jaskari and A. Järvenpää	15
Mechanical Characterization According to Mo Contents of the As-Casted Ti-xMo-2Fe Alloy H.W. Hwang and D.G. Lee	21
Effect of Wall Angle on Thickness Distribution in Single Point Incremental Forming: Finite Element Analysis and Theoretical Approach R. Shelke and S. Gajre	27
Influence of Electrical Parameters on the Machining Performance in the Small Hole Drilling by EDM Process K. Jamkamon, P. Kumkoon and S. Chuvaree	33

Chapter 2: Corrosion and Cavitation Erosion

Study on the Parameters of MAPLE and PLD Coating Technologies for Optimal Corrosion Resistance of MnTa₂O₆ Pseudo-Binary Oxide and 5,10-(4-Carboxy-Phenyl)-15,20-(4-Phenoxy-Phenyl)-Porphyrin Thin Film Coating System A.C. Murariu, M. Cocard, A.A. Geana and G. Socol	43
Research on the Influence of the Heat Treatment Temperature on the Cavitation Behavior of the Aluminum Alloy 2017 A C.L. Salcianu, I. Bordeasu, B. Ghiban, N.A. Srbu, C. Ghera, A.N. Luca, O. Odagiu and R. Bdru	55
Increasing the Resistance to Cavitation Erosion of 6082 Aluminum Alloys through Thermal Aging Treatments at 140°C and Holding Time of 12 Hours C. Ghera, I. Bordeasu, A.N. Luca, C.L. Salcianu, B. Ghiban, O. Odagiu, N.A. Srbu and R. Bdru	63
Corrosion Fatigue of Standard Duplex Stainless Steel X2CrNiMoN22-5-3 under Rotation Bending Load in Northern German Basin Environment M. Wolf and A. Pfennig	71
Evaluating the Cavitation Erosion of 7075-T651 Aluminum Alloy Heat Treated by Artificial Aging at 140 °C for 12 Hours A.N. Luca, I. Bordeasu, L.M. Micu, C. Ghera, R. Bdru, C.L. Salcianu, D. Ostoia, M. Hlusu and N.A. Srbu	77

Chapter 3: Polymer Materials

Effect of Melt Jet Spinning Process on PLA/PBS Blend Nonwoven Fabric Production S. Boonyod, W. Pivsa-Art and S. Pivsa-Art	89
Development of Microporous Breathable Polyethylene Film Using Different Types of Linear Low-Density Polyethylene with Calcium Carbonate as Filler J.Y. Tay, S. Lim, S.K. Mah and Y.M. Tan	95

Chapter 4: Chemical Production

Effect of Milling on Forest Residue-Derived Biochar with High Energy Milling Ellipse 3 Dimension

E. Yulia, N. Nugraha, E. Ekawati, A.B. Nugraha, B.S. Purwasasmita and M.S. Rijal 103

Simulation and Experimental Study of Water Soot Blower for Pulverized-Coal Boiler Based on Discrete Phase Model

T. Plangsrinont, W. Nakkiew, A. Baisukhan and S. Khamput 109

Optimization and Comparison of CO₂ Capture Process Using DEPG and Methanol Solvents

A. Patthanaporn, H. Eiamsaubtab and A. Nuchitprasittichai 117

Chapter 5: Low Dimensional Quantum Structures

Tuning the Diamagnetic Susceptibility and Electron Average Position in a GaAs Hemi-Spherical Quantum Dot with an Off-Center Donor Atom

O. Mommadi, R. Boussetta, S. Chouef, M. Hbib, M. Chnafi, L. Belamkadem, A. El Moussaouy, C.M. Duque, C.A. Duque, F. Falyouni and A.K. El-Miad 125

The Effect of a Single Off-Center Shallow Donor Atom on the Binding Energy and Diamagnetic Susceptibility in a GaAs Horn Torus Quantum Dot

R. Boussetta, O. Mommadi, S. Chouef, M. Hbib, L. Belamkadem, M. Chnafi, M. El Hadi, A. El Moussaouy, C.A. Duque and A.K. El-Miad 133