

Table of Contents

Preface

Chapter 1: Properties and Processing of Structural Materials

Potential Al-Fe Cast Alloys for Motor Applications in Electric Vehicles: An Overview S. Liu, A. Hu, H. Hu, X.Y. Nie and N.C. Kar	3
Biocompatibility and Mechanical Properties Evaluation of Ti-6Al-4V Lattice Structures with Varying Porosities N. Wang, S.T. Dheen, J.Y.H. Fuh and S.K. Anantharajan	21
Effects of Nb and o Contents on the Negative Linear Thermal Expansion Behaviors of Cold Rolled Ti-34Nb Alloys X.W. Wu, W.Q. Zou and F. Chen	31
Efficient Toolpath Generation Method for High-Quality and High-Accuracy Machining of Curved Surfaces T.T.K. Dat, V.N. Phong and T.T. Phuc	37
Determine the Optimal Parameters of the Processing of SUS 304 Sheet Material to the Machining Time by Spif Technology T. Vo, L.C.K. Dinh and V.L. Vo	47
A Research on the Influences of Forming Parameters on the Roughness of Plastic Products by Fuse Deposition Modeling Technology K.D. Le, T.N. Nguyen, N.H. Hiep and S. Antonov	55
Design and Manufacturing of Feeding System to Improve Accuracy and Surface Roughness of FDM Products H.N. Huynh, T.H. Le, N.H.H. Tran and T.H. Bui	65
Design of 2D Wave Booster Ultrasonic Vibration-Assisted Cutting Tool in Small Size Surface Machining T.H. Nam, T.A. Son, N.T. Hai and N.T. Phuoc	75

Chapter 2: Materials Degradation and Failure Analysis

Damage and Fracture in Creep of a Cast B1914 Superalloy M. Kvapilová, P. Král, J. Dvořák, K. Hrbáček, K. Kuchařová and V. Sklenička	87
Influence of Processing Technology on Creep Damage of Ultrafine-Grained Titanium J. Dvořák, P. Král, A.G. Kadomtsev, V.I. Betekhtin, M.V. Narykova, M. Kvapilová and V. Sklenička	93
Effect of Graphite on Residual Lifetime of Superheater Tubes Made of Steel 16Mo3 after Creep Exposure Š. Stejskalová, Z. Kuboň and G. Rožnovská	99
Creep Damage in Steam Pipelines and the Use of Metallography in Verifying the Possibilities of Testing P. Mareš, J. Veselá and Z. Špirit	107
In Vitro Corrosion Study of Selected Laser Melted WE43 Magnesium Alloy in Hank's Balanced Salt Solution V. Bednaříková, L. Klakurková, M. Remešová, M. Horynová, J. Suchý, D. Paloušek and L. Čelko	113
Effect of Carburizing Helium Environment on Corrosion Behavior of the High-Temperature Alloys for High-Temperature Gas-Cooled Reactor W. Zheng, Q.H. Wang, X.D. He, H.Q. Yin, H.X. Li and T. Ma	119
Causes of Injection Mould Insert Block Damage Z. Pavloušková, L. Klakurková, M. Juliš, P. Gejdoš and J. Švejcar	127
Analysis of the Causes of Shaft Damage K. Zábanský, L. Klakurková, P. Gejdoš, M. Juliš and J. Švejcar	133
Analysis of Cracked Rail of the Crane of Type A120 J. Kasl	139

Analysis of the Causes of Failure and Material Analysis of Components of the Screw Conveyor of a Coal Boiler for Steam Production J. Koc, E. Chvostová and J. Dlouhý	147
--	-----

Chapter 3: Concrete Properties

Thermal Stress of Early-Age Concrete Made with Different Cement Compositions J.D. Xin, Y. Liu, G.X. Zhang, Z.H. Wang, N. Yang and Y. Qiao	157
Creep Behavior of Early-Age Concrete Made with Different Cement Compositions under the Controlled Temperature History D.Z. Wang, J.D. Xin and Z.H. Wang	163

Chapter 4: Agricultural Product Processing

Optimization of the Novel Vacuum Drying Process's Parameters on the Dragon Fruit Chips B.Q. Nguyen, L.H. Sam and S. Tran Anh	171
A Study on Effects of Temperature and Velocity of Drying Air on Flavonoids Extraction Rate of Houttuynia Cordata Thunb L.M. Nhut and B.D. Sang	177

Chapter 5: Innovations in Textile Manufacture

Whiteness Perception under LED Source with High Content of UV Radiation M. Vik, A.A. Mukthy and M. Viková	187
Structural Engineering for Obtaining Functional Terry Towels R.V. Costa, C. Silva, P. Silva, J. Bessa, F. Cunha, J. Oliveira, J. Lima and R. Figueiro	195