

Table of Contents

Preface

Chapter 1: Manufacturing Technologies

Dynamic Testing of Friction Stir Processed Aluminum-5052 M.Y. Mohamed, I. Al Daour, M. Alkhader, B. Darras, W. Abuzaid and M. Nazzal	3
Hybrid Intelligent-Assisted Approach for Process Parameters Optimization to Enhance the Sustainable Manufacturing of Thermoplastic Laminates K. Kadri, B. Ali, M.A. Jaradat, M. Alkhader and W. Abuzaid	13

Chapter 2: Materials for Biomedical Application

Fabrication of Carbonate Apatite Bone Substitute Coating on Titanium and its Initial Cellular Response D.H. Nguyen, D.L. Bui, A.S. Nguyen and T.B. Le	27
Porosity and Mechanical Properties of Porous Ti by Spark Plasma Sintering under Different Applied Produced Pressures V.H. Pham, N.K.K. Linh, N.T. Ngoc, T.A. Nguyen, T.Q. Nguyen, T.T. Le, T.T.T. Nguyen, V.H. Pham and D.Q. Khanh	33
Study on Coating of TiO₂ Nanotubes on Microporous Ti Surfaces for Biomedical Applications V.C. Manh, D.M. Duc, D.Q. Khanh, D.H. Bach, N.D. Trung Kien, M.X. Dung, T.Q. Phong and V.H. Pham	45
Influence of Current Density on the Morphology and Structure of Silver Nanoparticles on Anodized Titanium for Biomedical Implant Applications V.H. Pham, D.M. Duc, N.D. Hung, L.T.T. Lan and L.V. Toan	55
Synthesis CaTiO₃: Er³⁺ Films on Titanium by Anodization and Hydrothermal Method for Drug Delivery Applications N.T.T. Tuyen, L.T.T. Lan and V.H. Pham	63

Chapter 3: Waste Recycling and Wastewater Treatment

Prospects for the of Use Ash and Slag Waste of Thermal Power Plants as Raw Materials for the Extraction of Vanadium and Nickel Compounds O. Kovalov, D. Taraduda, V. Sobyina and I. Neklonskyi	73
Analysis of Energy and Economic Advantages of Dolomite Clinker Production from Industrial Wastes O. Vinnychenko and V. Vinnichenko	91
Ensuring Radiation Safety of Substances Contaminated by Radionuclides by Mixing them V. Mashinistov, V. Balakin, Y. Romanko, A. Meshkova and O. Petukhova	97
Review on Phosphorus Recovery as Struvite from Wastewater N.F.H. Hafiz, M.A. Rahman, M.H.D. Othman, J. Jaafar and K.H. Abas	103
Insights into the Microbiota of a Textile Wastewater Treatment System towards Sustainable Bioremediation of Industrial Wastes M.M. Isah, Z. Taining, N.K. Abd Jalil, Z. Ibrahim and M.F. Abdul-Wahab	119
Phytoremediation of Zinc Ions from Aquatic Macrophytes J.W. Tai, Y.L. Pang, L. Steven and W.C. Chong	133