Table of Contents

Preface

Chapter 1: Technologies of Electro Discharge Machining

Monel 400 Alloy	
M. Manoharan, P. Sudalai, A. Arivendhan, S.D. Kumar and J. Ekanthamoorthy	3
Experimental Analysis of Cryogenic-Treated Single Tubular Electrodes in Micro-EDM Using CRITIC-MOORA Based Integrated Approach N. Vincent and F.R. John	11
Multi-Objective Parametric Optimization of Micro-Electro Discharge Machining of Hastelloy C276 Super Alloy Using Response Surface Methodology and Particle Swarm	
Optimization M. Parthiban, M. Harinath, V.S.S. Krishaanth, B. Logesh and A.N.J. Musthak	21
Chapter 2: Waste Treatment	
Preparation and Characterization of Calcium Hydroxide from Cockle Shell Waste via Sol-Gel Method: Effect of HCl Concentration Z.S. Ramli, N.M. Salleh, T.K. Abdullah, S. Ismail and S.A. Zubir	33
Reprocessable and Recyclable Self-Healing Natural Rubber/Carbon Black Composite Based on Metal Thiolate Ionic Network	
N.F.M. Sani, L.M. Fen and R.K. Shuib Cellulose-Based Oil Palm Empty Fruit Bunch as an Alternative Filler for Latex	41
Application: A Review N.S. Dzulkafly, A.T.T. Loke and A.R. Azura	51
A Review on Methods of Cenosphere Separation from Fly Ash A.D. Johar, H. Mohamed, Z. Itam, N.M. Zahari, Z.C. Muda, A. Syamsir, S. Beddu, M.H. Zawawi, M. Zainoodin, S.M. Mubin and N.L.M. Kamal	57
Transforming Carbide Lime Waste into Marketable PCC: Effect of Mechanical	
Disturbance E.M. Salleh, R. Othman, S.N.M. Sabri and Z. Mahim	67
Characterisation of Water Treatment Sludge (WTS) at a Water Treatment Plant in Melaka A.R. Saleman, R. Jumaidin, A.A.M. Sultan, U.A.A. Azlan and M.Z. Zakaria	73
Recycling Blast Furnace Dust as Raw Material in Iron-Making T.T.T. Hien, P.N. Hai and T.T. Hai	79
Evaluation of Mechanical Properties with the Use of EPS Polymer for the Preparation of	
Sustainable Composite Based on Concrete D.F. dos Santos	85
Chapter 3: Design of Structural Elements and Technological Equipment	
Design and Development of a Portable Resistance Spot Welding Machine for Small-Scale Industries	
K. Jha, A. Jumde, G. Kumar, R. Dutta, K. Hardya, S.K. Singh and B. Choudhury	97
Review on Performance and Emissions Characteristics of Compression Ignition Engine Fueling Non-Edible Vegetable Oil K.P. Tiwari and R.N. Singh	107
Analytical Studies of Fluid Conveying Pipes on Viscoelastic Foundation Using Differential	
Transforms Method O.A. Adeleye, A. Yinusa and I.V. Diwe	123
Effect of Long Used Machine Oil on the Tribological Behaviour of Cu-Based Gear	123
Materials S. Kaiser, A. Ahmed, R. Sharmila and M.S. Kaiser	139

Chapter 4: Heat and Mass Transfer in Engineering Systems

An Analytical Study of the Impact of an Inclined Magnetic Field on Couette Flow with Jeffrey Fluid under Local Thermal Non-Equilibrium (LTNE) and Viscous Dissipation N. Gupta and D. Bhargavi Strategies on the Optimization of Thermoelectric Systems for Heat Transfer Applications: State of the Art Review M.M. Venkatesh, B. Bakthavatchalam, R.P. Raviramachandran, N.B. Shaik, O.A. Hussein and N.A. Patil	157
	171
Chapter 5: Mechatronics and Robotics	
A Survey of Drones in Agriculture Sector J. Boopalamani, P.S.P. Ayswariya, S.P. Raj, P. Yagnitha, N. Sarrvesh and A. Jha	191
Multi-Objective Optimization of a Three Degree-of-Freedom Translational Parallel Kinematic Machine with Coplanar Rails J.S. Patnala, A.B.K. Rao and S.K. Darvekar	201
A Robotic Arm Visual Grasp Detection Algorithm Combining 2D Images and 3D Point Clouds	
N.M. Hui, X.H. Wu, X.W. Han and B.J. Wu	209