

Table of Contents

Preface

Chapter 1: Properties and Behaviour of Structural and Functional Materials

Application of Rietveld Refinement and Williamson Hall Analysis in Ultra-Low Carbon to High Carbon Steels S.S. Sarangi and A. Lavakumar	3
Properties of Three Phase Magneto-Electro-Thermo-Elastic Composites H. Patel, P.K. Penumakala and D. Patel	9
Anodic Polarization Behavior of Cold-Worked Austenitic Stainless Steel: A Newer Approach N. Srinivasan, S.S. Kumaran and D. Venkateswarlu	16
Correlating Tensile Properties with Microstructures of Various Regions in Gas Tungsten Arc Welded AA2014 Alloy M.P. Shankar, R. Sokkalingam, K. Sivaprasad and V. Muthupandi	22
A Study on Influence of Underwater Friction Stir Welding on Microstructural, Mechanical Properties and Formability in 5052-O Aluminium Alloys K.T. Babu, S. Muthukumaran, C.H.B. Kumar and C.S. Narayanan	27
Studies on Susceptibility of Alloy 617 to Solidification Cracking R. Ravibharath, K. Devakumaran and V. Muthupandi	34
Influence of Different In-Process and Building Materials with Varying Hardness on Impact Sensitivity of the Matchhead Composition S.P. Sivapirakasam, K.H. Phanindra, M. Surianarayanan and K.R. Balasubramanian	41
Experimental Study of High Velocity Oxygen Fuel Sprayed Cr₃C₂- Ni-Cr-B-Si Coatings on Inconel 718 Using Design of Experiments R. Shankar, K.R. Balasubramanian and S.P. Sivapirakasam	48
Influence of Temperature on Impact Sensitivity of Matchhead Composition while in Contact with Different Process Materials S.P. Sivapirakasham, K.H. Phanindra, M. Surianarayanan and K.R. Balasubramanian	55
Thermo-Mechanical Treated High Strength AA-7xxx Aluminium Alloy by Cold and Cryo-Rolling Study their Mechanical Properties Corrosion and Microstructure Correlation Y. Phaneendra, I.N.N. Kumar and V.V. Ravi Kumar	62
Synthesis of Al5083 Alloy by High Energy Ball Mill and Densification through Equal Channel Angular Pressing (ECAP) K. Chandra Sekhar, B. Ravisankar and S. Kumaran	68
Tribological and Morphological Evaluation of Ni-P and Ni-P/D Coatings B. Ramakrishnan, K.U. Venkat Kiran, P. Rangari, A. Prajapati, Z. Firdouz, T. Jugunta, B.U. Kumar, A. Srivastav, B.R. Sunil and R. Dumpala	73
Fracture Behaviour of Fibre Reinforced Rubcrete A. RAJ, A.P.J. Usman, P. Nagarajan and A.P. Shashikala	80
High-Temperature Wear Behavior of the ZE41 Mg Alloy B.P. Chiranth, C. Siddaraju, R.K. Mishra, R. Sasikumar, R. Sathiskumar and T. Ram Prabhu	86
Microstructural and Corrosion Studies by Immersion in 3.5% NaCl Solution on Aged Mg-9Al-1Zn-XCa Alloy S. Manivannan, B. Narenthiran, A. Sivanantham and S.P.K. Babu	93
High Entropy Based Composites - An Overview T. Ram Prabhu, Y. Chodancarr, M. Arivarasu, N. Arivazhagan and R.K. Mishra	98
X-Ray Diffraction and Microstructure Analysis of EN47 Spring Steel at Various Soaking Period of Time S.R. Kumar, S.S. Kumaran, G. Ramesh, M. Sree Arravind and D. Venkateswarlu	104
Evaluation of Wear Rate of Aluminium Hybrid Composites Fabricated through Stir Casting Technique B. VENKATESH and S. NAGAKALYAN	110

Bending Analysis of Piezoelectric Functionally Graded Material Plates Using HSDT C.N. Reddy, M. Bhargav and T. Revanth	116
Influence of Sic and Al₂O₃ Particulate Reinforcement on the Mechanical Properties of ZA27 Metal Matrix Composites B.N. Anjan and G.V.P. Kumar	122
A Comparative Study of Wave Excitation in Plates Using Piezoelectric Transducers Operating at Different Modes M. ASLAM, P. Nagarajan and M. Remanan	128
Investigation on Effect of Fibre Volume and Fiber Orientation on Erosive Wear Behavior of Carbon Fiber Reinforced Epoxy (CFRP) Composites M.K. Reddy, V.S. Babu and K.V.S. Srinadh	134
Dry Sliding Wear of Unidirectional Short Castor Oil Fiber Reinforced Epoxy Composite G.V. Jagadeesh, J. Satish, E. Rajesh and G. Srinivasu	140
Thermal and Impact Sensitivity of Pyrotechnic Compositions Containing the Potassium Perchlorate, Aluminium and Graphite K.H. Phanindra, S.P. Sivapirakasham, K.R. Balasubramanian and M. Surianarayanan	146
Mechanical Characterization of the Natural Fiber Reinforced Polystyrene Composite M.F. Zafar and M.A. Siddiqui	152
Comparison of Erosion Wear of Bidirectional and Multidirectional Oriented Glass Fibre Epoxy Composites P.P. Naidu, G. Raghavendra and S. Ojha	157
Tribological Analysis by Concentration Effect of Boron Carbide and Graphite on the Aluminum Composites K. Rajkumar, S. Varun, G. Prasanna, C. Sreyas and A. Gnanavelbabu	163
Synthesis, Structural Analysis of Cadmium Sulphide Nanocrystallites R. Sivanand, S. Chellammal and S. Manivannan	169
Study of Corrosion Behavior of Carbon Fiber Reinforced Plastics (CFRPs) N. Maniselvam, M.S. Santhosh, R. Sasikumar, P. Murugesan and M. Chandru	175
Investigation of Energy Absorption Behaviour of Square Aluminium Tubes with Cutouts under Axial Compression L.P.J. Lal, G. Yuvaraj and S. Ramesh	181
Development of Models for Predicting Strut Efficiency Factors for Conventional and Steel Fibre Reinforced Concrete Deep Beams M.S. Sandeep, P. Nagarajan and A.P. Shashikala	187
A Review of Contemporary Fatigue Analysis and Biomaterials Studies in Endodontics P.R. Lokhande, S. Balaguru and G. Deenadayalan	193
Effect of Hydrofluorocarbons and Hydrofluoroolefins in a Household Refrigerator as a Substitute for R134a S.M. Hasheer and K. Srinivas	199
Characterization of Microstructure and Mechanical Properties of AA2219-O and T6 Friction Stir Welds D. Venkateswarlu, M. Cheepu, P.N. Rao, S.S. Kumaran and N. Srinivasan	205
Microstructure Characterization of Superalloy 718 during Dissimilar Rotary Friction Welding M. Cheepu, D. Venkateswarlu, P.N. Rao, V. Muthupandi, K. Sivaprasad and W.S. Che	211
An Overview of Quasicrystal Reinforced Magnesium Metal Matrix Composites K. Jithesh, T. Ram Prabhu, R.V. Anant, M. Arivarasu, A. Srinivasan, R.K. Mishra and N. Arivazhagan	218
Effect of Geosynthetic Reinforcement on Strength Behaviour of Weak Subgrade Soil A. Mittal and S. Shukla	225
Responses of Aluminium Alloy Pistons under Mechanical and Thermal Loads C. Kumar and N.K. Singh	231
Cadmium Sulphide Nanocrystallites for Optoelectronic Devices R. Sivanand, S. Chellammal and S. Manivannan	237
Evaluate Mechanical Behavior of Alumina Coated Aluminum Alloy Using Slow Strain Rates Test in 3.5% of NaCl Solution D. Singh, V. Dhayal and D.C. Agarwal	242
Torsional Behavior of Irregular RC Building under Static and Dynamic Loading S. Neelavathi, K.G. Shwetha and C.L. Mahesh Kumar	247

Effect on the Mechanical Properties of Aluminum-Based Hybrid Metal Matrix Composite Using Stir Casting Method	
R. Butola, C. Pratap, A. Shukla and R.S. Walia	253
Fabrication of Solution Combustion Based Transparent Semiconducting Titanium and Zinc Co-Doped Indium Oxide (ITiZO) Films	
R.V. Vardhan, G. Manjunath and S. Mandal	260
Tensile and Hardness Properties of Sheep Wool Fiber Reinforced Polyester Composite	
J. Manivannan, S. Rajesh, K. Mayandi and M.T.H. Sultan	266
Enhanced Tensile and Wear Properties of CFRP Composites Manufactured Using Vacuum Infusion Process	
S.K. Chokka, B.S. Ben and K.V.S. Srinadh	271
Smart Materials for Sustainable and Smart Infrastructure	
S. Nihalani, U. Joshi and A. Meeruty	278
Reduction of AWJ Induced Delaminations by Impregnated Nanoclay GFRP Composites	
V.V.S. Rao, G.Y. Kiran Kumar and S. Pentapalli	284
Flexural Behaviour of GGBS-Dolomite Geopolymer Concrete Beams under Cyclic Loading	
P. Saranya, P. Nagarajan, A.P. Shashikala and A.P. Salam	291
Evaluation of Microstructure and Mechanical Properties of Multi Axial Forged LM2 Aluminum Alloy	
S.S. Sajjan, M.V. Kulkarni, S. Ramesh, P.C. Sharath, R. Sangamesh, A. Kumar and R. Rajesh	297
Determination of Crack Pattern in Concrete Structures Using Applied Element Method	
D.L. Christy, T.M.M. Pillai, P. Nagarajan and L. Manimaran	303
Effect of Type and Concentration of Aqueous Solutions on Corrosion Behaviour of Plasma Electrolytic Oxide Films on ZM21 Mg Alloy	
V.R. Kumar, V. Muthupandi and K. Sivaprasad	309
A Three Dimensional Fracture Analysis of an Edge Crack in FGM Using XFEM	
V. SONKAR, S. Bhattacharya and K. Sharma	315
Comparative Evaluation of Quasi-Static Indentation Behaviour of Glass Fiber Reinforced (GFRP) and Carbon Fiber Reinforced (CFRP) Laminates	
H. Shetty and D. Sethuram	321
Shear Strength of BC-Soil Admixed with Lime and Bio-Enzyme	
C. Jairaj, M.T. Prathap Kumar and H. Muralidhara	327
Tribological Properties of Basalt Fibers - A Review	
K. Ullegaddi, C.R. Mahesha and Shivarudraiah	335
Performance Comparison of a Low GWP Refrigerants as Alternatives to R134a in a Refrigerator with and without Liquid-Suction Heat Exchanger	
S.M. Hasheer and K. Srinivas	343
Critical Review of Design Procedures for Reinforced Concrete Slabs as per IRC 112-2011	
J. Chithra, P. Nagarajan, A.S. Sajith and R.A. Roshan	349
Optical Investigations of In₂Se_{2.7}Sb_{0.3} Thin Films Prepared by Thermal Evaporation Technique	
P. PATEL, V. Patel, S. Vyas, J. Patel and H. Pavagadhi	355
Analysis of the Tribological Properties of Commercial Pure (CP) Aluminum Developed by Chip Consolidation through Equal Channel Angular Pressing (ECAP)	
R.R.K.R. Vittel Rao, K. Gudimetla, M.S. Kumar, S.R. Kumar and P. Venkatachalam	361
Polypyrrole/Alumina-Iron Oxide Nanocomposite for Removal of Copper Ions from Aqueous Solutions	
P.N.M. Lissy, G. Madhu and R.M. Thomas	367
Development of Al7075 Reinforced with Multiwalled Carbon Nanotubes for Strength Evaluation and FE Static Analysis of Idealized Brake Rotors	
M. Rajesh, C.R. Mahesha, Shivarudraiah and K.V. Sharm	373
Synthesis and Evaluation of Biocompatibility of Cu-Al-Mn Shape Memory Alloy	
A. Majumder, V. Shivakumar, A.G. Shivasiddaramaiah, C. Shashishekar, U.S. Mallikarjun and K.B. Roopa	380
Influence of Neodymium on Microstructure and Mechanical Properties of Mg-9Li-3Al Alloy	
P. Dinesh, S.P. Kumaresh Babu and S. Natarajan	386
Effect of Multiaxial Cryoforging on Wear Properties of Cu-1.5%Ti Alloy	
S. Ramesh and H.S. Nayaka	392

Determination on the Effect of Al₂O₃/B₄C on the Mechanical Behaviour of Al-6.6Si-0.5Mg Alloy Cast in Permanent Mould A.V.R. Senan, M.C. Akshay and K.V. Shankar	398
Effect of Calcium Phosphate on Tensile and Rheological Properties of Polylactic Acid (PLA) G. SAHU, M.S. Rajput and S.P. Mahapatra	404
Investigation on Electromechanical Properties of Solid Silicone Rubber Composites with Conductive Carbon Filler B.S. Manohar Shankar and S.M. Kulkarni	409
Development of Bronze Metal Matrix Composite for Automobile and Marine Applications R.U. Krishnan, J. Mohan, G. Alex, J.P. Arjun, K.U.D. Darshan, K.V. Shankar and A. Krishnan	415
Effect of Titanium Dioxide (TiO₂) Nano-Fluid on Performance and Emission Features of a Diesel Engine Operated on Aphanizomenon Flos Biodiesel-Diesel Blend G. Jayabalaji and P. Shanmughasundaram	421
Effect of Soaking Time on Evolution of Microstructure and Hardness during Annealing of EN-47 Spring Steel S.R. Kumar, S.S. Kumaran, G. Ramesh, M. Sree Arravind and D. Venkateswarlu	427
Characterization of MnS Thin Films Deposited by Chemical Bath Deposition D.K. Sonavane, S.K. Jare, M.A. Shaikh, R.V. Kathare and R.N. Bulakhe	433
Fullerene (PCBM) Modulated MEH-PPV Photoactive Material for Plastic Solar Cells I. Naik, R. Bhajantri, B.S. Patil and V. Bhat	439
Thermal Performance of Acrylonitrile Butadiene Styrene (ABS) Copolymer Blended with PTFE Particle/Polymer Composite R.M. Kumar, N. Rajini, K. Mayandi and S. Siengchin	444
Combustion Characteristics of Single Cylinder Diesel Engine Fueled with Blends of Thumba Biodiesel as an Alternative Fuel M. Singh, M.Y. Sheikh, D. Singh and P.N. Rao	451
Experimental Investigation of Proton Exchange Membrane (PEM) Fuel Cell Using Different Serpentine Flow Channels M.P. Adari, P. Lavanya, P. Hara Gopal, T.P. Sagar and S. Pavani	461
Selection of High Entropy Alloy for Solid Solution Using Multi-Criteria Decision Making Tool V.K. Soni, S. Sanyal and S.K. Sinha	466
Mechanical and Microstructure Study of the Self Healing Bacterial Concrete s. tiwari, S. Pal, R. Puria, V. Nain and R.P. Pathak	472
Numerical Modelling of Nanocomposites Using GA and FD Techniques S. Kostı and J. KUNDU	478
An Investigation on the Suitability of Al-Mg Binary Hypo-Eutectic and Eutectic Aluminium Alloys as a Metal Matrix for Polymer Reinforced Composites and Lightweight Applications D. Kumaran, A. Rajadurai and S.P.S.S. Sivam	484
Improvement in Mechanical and Metallurgical Properties of Friction Stir Welded 6061-T6 Aluminum Alloys through Cryogenic Treatment K.T. Babu, S. Muthukumaran, C.H.B. Kumar and C.S. Narayanan	490
Microstructure Characterization in Dissimilar TIG Welds of Inconel Alloy 718 and High Strength Tensile Steel M. Anuradha, V.C. Das, D. Venkateswarlu and M. Cheepu	496
Effect of Fiber Orientation on the Flexural Properties of Glass Fiber Reinforced, Epoxy-Matrix Composite K.C. Shekar, B. Singaravel, S.D. Prasad and N. Venkateshwarlu	502
Finite Element Analysis and Mechanical Behavior of 316L Stainless Steel Processed by Room Temperature Rolling R. Singh, S.D. Yadav, N. Malviya, S. Goel, R. Jayaganthan and A. Kumar	508
Investigating the Effect of Friction Stir Welding on Microstructure and Corrosion Behaviour of Al-Zn-Mg Alloy C. Sharma and V. Upadhyay	517
Computational Fluid Dynamic Analysis on PEM Fuel Cell Performance Using Bio Channel S.R. Badduri, G.N. Srinivasulu and S.S. Rao	524
Influence of Lung Channel Design Bipolar Plate on Performance of PEMFC Using Computational Fluid Dynamic Analysis S.R. Badduri, G.N. Srinivasulu and S.S. Rao	530

Chapter 2: Technologies of Materials Synthesis and Processing

Optimization of Process Parameters Using Surface Response Methodology for Laser Welding of Titanium Alloy M. Cheepu, D. Venkateswarlu, P.N. Rao, S.S. Kumaran and N. Srinivasan	539
Forming of AA2xxx and AA7xxx Sheet Alloys and their Studies on Microstructural and Mechanical Properties of Cold and Cryo Rolled Aluminum Alloys J.S. KUMAR, M. Siva, N.S. Kumar, C.V.V.S.S.R.K. Murthy and V.V. Ravi Kumar	546
Prediction and Optimization of Deformations in Coupling Mechanism Based Laser Forming of Sheet Metals K. MAJI	552
Parameter Optimization for Laser Welding of High Strength Dissimilar Materials M. Anuradha, V.C. Das, D. Venkateswarlu and M. Cheepu	558
Effect of Back Pressure on the Consolidation Behaviour of Titanium Sponge Particles Processed by ECAP K. Gudimetla, S. Mohanlal, A.B. Sankuru, S.R. Kumar, P. Venkatachalam and B. Ravisankar	565
Experimental Analysis of SA213 Tube to SA387 Tube Plate Welding by Using Close Fit Technique in Absence of Supporting Plate S.S. Kumaran, M. Sree Arravind, N. Srinivasan and D. Venkateswarlu	570
Mechanical and Tribological Properties of A7050 Hybrid Composite Reinforced with Nano Al₂O₃/Micro ZrO₂ Particles by Stir Casting Method K. Sekar and R. Singh	576
Bead Modelling and Deposition Path Planning in Wire Arc Additive Manufacturing of Three Dimensional Parts A. KUMAR and K. MAJI	582
Optimization of Process Parameters for Improved Corrosion Resistance and Microstructural Exploration in Friction Stir Welding of AA2024 - AA6061 R.D. Kumar, D. Srija, P. Suresh and S. Muthukumaran	589
Challenges and Opportunities in ECH of Gears A. RAJ and J.P. Misra	595
Effect of Mechanical Properties and Corrosion Behaviour of Martensitic Stainless Steel 410 1.6mm Butt Welded by Plasma Arc Welding M. Sree Arravind, S.R. Kumar, S.S. Kumaran and D. Venkateswarlu	601
Surface Roughness Prediction Modelling for WEDM of AA6063 Using Support Vector Machine Technique T. Singh, P. Kumar and J.P. Misra	607
Effect of Process Parameters and Heat Input on Weld Bead Geometry of Laser Welded Titanium Ti-6Al-4V Alloy M. Cheepu, D. Venkateswarlu, P.N. Rao, S.S. Kumaran and N. Srinivasan	613
Effect of Microstructure and Mechanical Properties of Austenitic Stainless Steel 1.6mm Butt Welded by Plasma Arc Welding S.R. Kumar, S.S. Kumaran, M. Sree Arravind and D. Venkateswarlu	619
Parametric Optimization of Dissimilar TIG Welding of AISI 304L and 430 Steel Using Taguchi Analysis A. Sivanantham, S. Manivannan and S.P.K. Babu	625
Optimization of Cutting Conditions for Surface Roughness in VMC 5-Axis R. Rudrapati and A. Patil	631
Performance Evaluation of Yield Function and Comparison of Yielding Characteristics of SS 304 in Annealed and Unannealed Conditions S.P.S.S. Sivam, G.B. Loganathan, D. Kumaran, K. Saravanan and S. Rajendra Kumar	637
Analysis of Dimensional Accuracy (Over Cut) and Surface Quality (Roughness) in Electrical Discharge Machining of Inconel-718 Alloy R. Kumar, A. Pandey and P. Sharma	644
Some Preliminary Experimental Investigations on Inconel-718 Alloy with Rotary Tool-Electrode Assisted EDM R. Kumar, A. Pandey and P. Sharma	650
Effects of Wire-EDM Machining Variables on Surface Roughness of D2 Steel Material R. Rudrapati and L. Rathod	656

Effect of Milling Time on Consolidation of Al5083 Nanocomposite by Equal Channel Angular Pressing	
K. Chandra Sekhar, Y.U. Rao, B. Ravisankar and S. Kumaran	662
Investigation of a Hollow Shaft to Determine the Maximum Angular Velocity Regarding the FGM Properties	
S. Torabnia, M. Hemati and S. Aghajani	669
Analysis and Optimization of Wire EDM Process of Titanium by Using GRA Methodology	
S.K. Sahoo, A. Bara, A.K. Sahu, S.S. Mahapatra, D.S. Kiran, G.S. Teja, E.S. Teja and S.P. Reddy	678
Cold Metal Transfer (CMT) Welding of Dissimilar Materials: An Overview	
S. Venukumar, M. Cheepu, T. Vijaya Babu and D. Venkateswarlu	685
Optimization of Friction Surfacing Process Parameters on Low Carbon Steel Using Taguchi Approach	
U.A. Kumar, B. Kasi and P. Laxminarayana	691
Remediation Technologies - A Comparative Study	
A. Mittal and S. Shukla	697
Formability Analyses on Single Point Incremental Sheet Forming Process on Aluminum 1050	
D. Desalegn, P.J. Ramulu, D. Hailu, S.S. Kumaran, P. Velmurugan and D. Venkateswarlu	703
Metal Joining Technique of SA 213 Tube and SA 387 Tube Plate Grade Materials Using Backing Block by Clearance Fit Condition	
S.S. Kumaran, N. Srinivasan, S.R. Kumar, N. Sekarapandian and D. Venkateswarlu	709
Experimental Investigation of Sunflower Oil as Dielectric Fluid in Die Sinking Electric Discharge Machining Process	
G.G. Reddy, B. Singaravel and K.C. Shekar	715
Evaluation of Microstructure and Mechanical Properties for Friction Stir Welding of Aluminium HE-30 Plates	
A.K. Revelly, B. Rajkumar and V. Swapna	720
Processing of Nickel-Copper Coated Carbon Fibre Rods Reinforced Al6082/4% Al₂O₃/2%Gr Matrix Composites	
M. Srinivasu, R. Suresh and L. Shivaramu	727
Investigation on Effects of Cutting and Jet Parameters in Turning of AISI 4140 Hardened Alloy Steel	
S. Mane and S. Kumar	732
Electrical Discharge Machining Characteristics of ECAP Copper Electrode	
R. Gopal, K.R. Thangadurai and K. Thirunavukkarasu	738
Parametric Studies on TIG Welding of 316L Stainless Steel by RSM and TLBO	
S.C. Moi, R. Rudrapati, A. Bandyopadhyay and P.K. Pal	744
Modelling of Tool Wear for Ti64 Turning Operation	
P. Kumar and J.P. Misra	750
Optimization of Process Parameters in the Turning Operation of Inconel 625	
H. Vasudevan, R. Rajguru, M. Shaikh and A. Shaikh	756
Investigation of the Impact of Cutting Parameters on Surface Integrity in the End Milling of Inconel 625	
R. Rajguru and H. Vasudevan	762
TIG Arc Welding - Brazing of Dissimilar Metals - An Overview	
S. Venukumar, M. Cheepu, T. Vijaya Babu and D. Venkateswarlu	768
Optimization of Injection Moulding Process Parameters for Manufacturing Plastic Components (PBT) Using Taguchi Method (TM)	
R. Khavkar, H. Vasudevan and G. Vimal	775
Multi-Objective Optimization of Machining Process Parameters in Wire-Cut Electric Discharge Machining of Inconel X750 Alloy by Combinatorial Approach	
G.V.A. Kumar, M. Shilpa, U.S. Purander, G. Madhoo and V. Asokan	781
Mechanical and Abrasive Wear Behaviour of Waste Silk Fiber Reinforced Epoxy Biocomposites Using Taguchi Method	
S.M. Darshan and B. Suresha	787
Effect of Grain Refiners and/or Modifiers on the Microstructure and Mechanical Properties of Al-Si Alloy (LM6)	
S. Prema, T.M. Chandrashekharaiiah and P.F. Begum	794

Application of Machine Learning Techniques for Multi Objective Optimization of Response Variables in Wire Cut Electro Discharge Machining Operation S.K. Shukla and A. Priyadarshini	800
Effect of Various Welding Parameters on the Mechanical Behaviour of 316L Stainless Steel-Galvanized Steel Weld P. Shreyas, B. Panda and R. Kumar	807
Elucidation on the Microstructural and Mechanical Properties of Tailored VAL12 Hybrid Composites with ZrO₂ Dispersoids Fabricated by Squeeze Casting Technique S.A. Srinivasan, S.P. Kumaresh Babu and V. Gaurav	813
Finite Element Modeling of Back-to-Back Built-Up CFS Un-Lipped Channels under Axial Compression K. Roy, T.C.H. Ting, L.H. Ho, S. Bhatnagar and J.B.P. Lim	819
Optimization of Welding Process Parameters in Novel Friction Stir Welding of Polyamide 66 Joints R. Nandhini, R.D. Kumar, S. Muthukumaran and S. Kumaran	828
Effect of Welding Speed on the Microstructure and Corrosion Properties of Weld and Heat Affected Zones in GTA Welded AA2014 Alloy M.P. Shankar, R. Sokkalingam, B. Kosuri, K. Sivaprasad and V. Muthupandi	834
A Review on Fabrication of Surface Composites on Magnesium Alloys by Friction Stir Processing P.R. Surya, P. Ram, M. Arivarasu, P.L. Rozario and R.K. Mishra	839
Investigation on Machining of Hybrid Metal Matrix Composite A.K. Bodukuri, K. Eswaraiiah and V. Pradeep	846
Scale down Approach to Solve Distortion Problem in Case of Wind Turbine Tower Fabrication M. Sarfudeen, P.R. Prabhu and S. Muthukumaran	852
Thermal Analysis of Dissimilar Materials Diffusion Bonding Using Finite Element Method S.S. Kumar, B. Ravisankar, F.M.A. Sheriff and M.J. Silvester Raju	858
Optimization of Friction Stir Processing Parameters for the Development of Cu-W Surface Composite R.B. Naik, G.M. Reddy, S.K. Subbu and R.A. Kumar	864
Study on Effect of Tool Overhang on Machining Characteristics of Al 7075-T6 in Orthogonal Turning Process K.U. Venkat Kiran, C. Rodge, R. Dhurve, R. Jain and R. Dumpala	870
Analysis of Product Quality through Mechanical Properties and Determining Optimal Process Parameters of Untreated and Heat Treated Aisi 1050 Alloy during Turning Operation S.P.S.S. Sivam, G.B. Loganathan, D. Kumaran, K. Saravanan and S. Rajendra Kumar	876
Fabrication of Light Weight Metal Matrix Nanocomposites Using Ultrasonic Cavitation Process: A State of Review P. Madhukar, N. Selvaraj, C.S.P. Rao and S.K. Mishra	882
Recent Studies on the Fabrication of Magnesium Based Metal Matrix Nano-Composites by Using Ultrasonic Stir Casting Technique - A Review D. Kumar and L. Thakur	889
The Influence of Gas Tungsten Arc Welding Parameters on Mechanical and Microstructure Properties of the TC4 Titanium Alloy M. Cheepu, D. Venkateswarlu, P.N. Rao, S.S. Kumaran and N. Srinivasan	895
Numerical Analysis of Constrained Groove Pressing and Mechanical Behaviour of Processed 316L Stainless Steel R. Singh, G. Rajan, B.K. Kumar, R. Verma, D. Singh, P.N. Rao, R. Jayaganthan and A. Kumar	901