Contents

Effect of Runner Design and Heat Treatment Parameters on Microstructure and Mechanical Properties of Cast Modified-Vibrated Al-7Si-Mg alloy ................................................. 1-7
N. H. Siddalingaswamy, M. A. Joseph, N. M. Nagarajan
N. H. Kumar

Application of Statistical Moments and Spectral Analysis for Condition Monitoring of Rolling Element Bearings ................................................. 9-14
M. S. Patil, Jose Mathew & P. K. Rajendra Kumar

Design of Robust Machine Layout for Cellular Manufacturing Systems ................................................. 15-21
Irappa Basappa Hunagund & Madhusudanan Pillai V.

Influence of Silicon (wt. %) and Heat Treatment on Abrasive Wear Behaviour of Cast Modified-vibrated Al-Si-Mg alloys ................................................. 23-28
N. H. Siddalingaswamy, M. A. Joseph, N. M. Nagarajan & N H Kumar

Influence of Reinforcements and Thermal Ageing on Corrosion Characteristics of Al (6061) Based Hybrid Composites ................................................. 29-33
Mahagundappa M. Benal, H. K. Shivanand & N. V. Yogananthmurthy

Effect of Alternate Solution Treatment on Microstructure and Mechanical Properties of Modified Vibrated Cast Al-Si-Mg Alloys ................................................. 35-40
N. H. S. Swamy, Anantha Krishna Rao, M. A. Joseph & N. M. Nagarajan

Finite Element Development for Analysis of Smart Structures ................................................. 41-44
Chandrashekhar Bendigeri, K. Badari Narayana & K. Ramachandra

Experimental Studies on Pulsating Heat Pipe ................................................. 45-49
K. Rama Narasimha, S. N. Sridhara, M. S. Rajagopal

An Experimental and Analytical Approach to Interfacial Friction in Bulk Plastic Deformation ................................................. 51-54
Shrisail Kakkeri, P. Dinesh & M. M. Benal

Stress Analysis on Truck Chassis Using Finite Element Analysis ................................................. 55-61
S. Prabhu
## Contents

Optimization of Process Parameters to Maximize Formability for Better Productivity by ........................................ 63-67  
Using Taguchi Method  
  Anoopkumar, T. Raghu, S. Rajesham and I. Balasundar

Influence of Process Parameters on Residual Stresses Induced by Milling of .......................................................... 69-74  
Aluminum Alloy Using Taguchi’s Techniques  
  S. Madhava Reddy and A. Chennakesava Reddy

Technical Review on Study of Compressed Air Vehicle (CAV) ................................................................. 75-81  
  Hemant Kumar Nayak, Devanshu Goswami and Vinay Hablani

Optimization of Cutting Parameters by Turning Titanium Material Using CBN Tool ........................................... 83-88  
  P. Vijaya Kumar Raju, Sitakoteswararao Katta and  
  T. S. Vamsi Krishna

Perspectives of District Heating Biomass Energy Technology Transfer and its Social Factors – ................................. 89-100  
A Strategies for Large-scale Diffusion in India  
  Ashis Acharjee and Prasun Chakraborti

Quality Improvement of Indoor Air by Using Heat Recovery Wheel .............................................................. 101-107  
  Manu Prakash, Shrikant Arora and S. N. Mishra

Experimental Investigations, Regression and Computational, Modeling and Analysis of .................................. 109-119  
Efficient and Effective Techniques for Fuel/ Energy Conservation in Iron Foundries  
  R. K. Jain

“Analysis of Market Segment with Quality Function Deployment” ................................................................. 121-131  
  Mohammad Israr and Anshul Gangele

Taguchi based Approach for Parametric Optimization of Multi Response Factors in ........................................ 133-138  
Micro Drilling Operation  
  Ashish Bharti and S. K. Moulick
International Journal of Mechanical Engineering

Volume 7
Issue 1
January-June 2014

Contents

Enhancing Organization's Performance Through Ergonomically Enabled Environment ........................................ 1-11
Rajeshwar Sahai and Sandeep Grover

Finite Element Analysis of Composite Leaf Spring ........................................ 13-17
O. Venkatesh, M. Rama Krishnan and N. Ramaniah

Study of MRR in Electric Discharge Machining with Side Flushing ........................................ 19-21
Navdeep Malhotra and Hari Singh

Property Evaluation of as Cast and Heat Treated Aluminium 7075 Alloy Based Composites Reinforced with Hematite Particulate  ........................................ 23-26
N. V. Yogamand Murthy, D. Abdul Buddan & H. B. Niranjan

Parameter Independent Image Processing Software for Dimensional Characterization of Lack of Penetration from Weld Thermograms in GTAW of AISI 316 Stainless Steel ........................................ 27-30
N. M. Nandhitha, N. Manoharan, B. Sheela Rani, B. Venkatraman, M. Vasudevan, N. Chandrasekar, P. Kalyana Sundaram & Baldev Raj

Determining the Essential Characteristics of Six Sigma Black Belts Results from a Pilot Study in Indian Manufacturing Companies ........................................ 31-36
Ashish Soti and O. P. Kaushal

Numerical Studies on Helical Non Adiabatic Capillary Tube ........................................ 37-41
Hemachandra Reddy, K. & Krishna Reddy, V.

Four-bar linkage Mechanism above-knee Prosthesis for Walking and Squatting ........................................ 43-48
S. S. Chauhan and S. C. Bhaduri

Experimental evaluation of Formability of Titanium Alloys using Forming Limit Diagram ........................................ 49-53
Anoopkumar, J Salasundar, M. Sudhakara Rao
T. Raghu and S. Rajesham

Factors Influencing Migration of Impurity Atoms into Liquid Phase During Zone Refining of Alloys with Laser as Heat Source ........................................ 55-65
K. R. Nambari, N. M. Nagarajan and M. A. Joseph

Effect of LPG Substitution and Injector Opening Pressure on the Performance and Emissions of a Dual Fuel Engine ........................................ 67-71
N. Kapilan, T. P. Ashok Babu and R. P. Reddy

Effect of Demand Variability on Job Shop Performance: A Simulation Study ........................................ 73-80
Rishu Sharma and Suresh Garg

Analysis of Change Parameter after Implementation of Enterprise Resource Planning: A Case Study ........................................ 81-84
S. Sindhu and S. K. Moulick
Contents

Development of an Energy Efficient Heat Pump Working on R407C as an Alternate Refrigerant
Kalyani K. Radha, Naga S. Sarada, Nagesh E. L., Rajagopal, K. ........................................ 85-89

Effect of Machining Conditions on the Performance Characteristics of Micro Wire Electric Discharge Machining of Stainless Steel
Somashekar, K. P., N. Ramachandran and Jose Mathew .................................................. 91-97

Effect of Short Glass Fiber Reinforcement on Characteristics of Polybutylene Terephthalate (PBT)– An Experimental Study
Attel Manjunath and D. V. Girish ...................................................................................... 99-103

A. K. Borah ......................................................................................................................... 105-112

Optimization of Constrained Multi-Item Fuzzy Inventory Problems using Genetic Algorithm
V. D. Prasada Rao, K. V. Subbaiah, V. Ramachandra Raju
K. Narayana Rao ............................................................................................................. 113-119

Performance and Emission Evaluation of a Diesel Engine Fueled with Methyl Esters of Tobacco Seed Oil
Y. V. V. Satyanarayana Murthy and A. Veeresh Babu .......................................................... 121-125

Powder Metallurgical Processing of Graphite Particulate Aluminium MMC
Thoguluva Raghanan Vijayaram and Mohd Shukor B. Salleh .............................................. 127-135

Experimental Investigations to Specify the Effect of Fuel Additives on Performance of a Vegetable Oil Engine
Kalyani K. Radha, Aruna A. Kumari, Naga S. Sarada
Nagesh E. L. and Rajagopal, K. ...................................................................................... 137-141

Factors Influencing Migration of Impurity Atoms into Liquid Phase During Zone Refining of Alloys with Laser as Heat Source
K. R. Nambiar, N. M. Nagarajan and M. A. Joseph ............................................................ 143-153

Effect of LPG Substitution and Injector Opening Pressure on the Performance and Emissions of a Dual Fuel Engine
N. Kapilan, T. P. Ashok Babu and R. P. Reddy .................................................................. 155-159

Effect of Demand Variability on Job Shop Performance: A Simulation Study
Rishu Sharma and Suresh Garg ......................................................................................... 161-168

Analysis of Change Parameter after Implementation of Enterprise Resource Planning: A Case Study
S. Sindhu and S. K. Moulick ............................................................................................... 169-172
Contents

Optimization of Process Parameters to Maximize Formability for Better Productivity by Using Taguchi Method ........................................... 1-5
Anoopkumar, T. Raghu, S. Rajesham and I. Balasundar

Influence of Process Parameters on Residual Stresses Induced by Milling of Aluminum Alloy Using Taguchi’s Techniques .............................................................. 7-12
S. Madhava Reddy and A. Chennakesavu Reddy

Technical Review on Study of Compressed Air Vehicle (CAV) .......................................................................................... 13-19
Hemant Kumar Nayak, Devanshu Goswami and Vinay Hablani

Optimization of Cutting Parameters by Turning Titanium Material Using CBN Tool .......................................................... 21-26
P. Vijaya Kumar Raju, Sivakoteswararao Katta and T. S. Vamsi Krishna

Perspectives of District Heating Biomass Energy Technology Transfer and its Social Factors – A Strategies for Large-scale Diffusion in India .................................................... 27-38
Ashis Acharjee and Prasun Chakraborti

Quality Improvement of Indoor Air by Using Heat Recovery Wheel ................................................................................ 39-45
Manu Prakash, Shrikant Arora and S. N. Mishra

Experimental Investigations, Regression and Computational, Modeling and Analysis of Efficient and Effective Techniques for Fuel/ Energy Conservation in Iron Foundries ............................................................................. 47-57
R. K. Jain

"Analysis of Market Segment with Quality Function Deployment" ........................................................................ 59-69
Mohammad Israr and Anshul Gangele

Taguchi based Approach for Parametric Optimization of Multi Response Factors in Micro Drilling Operation .................................................................................. 71-76
Ashish Bharti and S. K. Moulick

Analysis of Steam Turbine Casing for Static Loading Condition .................................................................................... 77-82
Laxminarayan, K., M. Venkatarama Reddy and Kumar

Preparation and Application of Karanja Bio-diesel and it’s Blends in a Twin Cylinder Diesel Engine .......................................................... 83-90
Chandrakanta Nayak, Saroj kumar Achrya and Ranjan kumar Swain
## International Journal of MECHANICAL ENGINEERING

**VOLUME 8 • NUMBER 2 • JULY-DECEMBER 2015**

### CONTENTS

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Title</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Saravanakumar and P. Sasikumar</td>
<td>Prediction of Surface Roughness in Turning using Design of Experiments</td>
<td>109-113</td>
</tr>
<tr>
<td>Vivek Chacko and Bindu Kumar Karthikeyan</td>
<td>Film thickness for a Bingham Solid in Counter-formal Contact Conjunctions - A Numerical Approach</td>
<td>115-120</td>
</tr>
<tr>
<td>Charanjit Singh and Lakhvir Singh</td>
<td>Synthesis and Tribological Characterization of Aluminium-silicon Carbide Composite Prepared by Mechanical Alloying</td>
<td>121-126</td>
</tr>
<tr>
<td>Sanjay Kalia, G. R. Selokar &amp; Amitesh Paul</td>
<td>Extraction of Exergy from Textile Waste and Glossy Paper</td>
<td>137-142</td>
</tr>
<tr>
<td>Sanjay Kumar, Mukesh verma &amp; Sarabjit Singh</td>
<td>Weldability of Reinforced Cast Iron by Gas Metal ARC Welding</td>
<td>143-148</td>
</tr>
<tr>
<td>Seelam Pichi Reddy, bolla Ramana &amp; A. Chennakesava Reddy</td>
<td>Sintered Density and Porosity of Al-15wt% Pb/Fly-ash Metal Matrix Composites</td>
<td>149-156</td>
</tr>
</tbody>
</table>
S. Anuja, R. A. Kalavani & S. Sriman Narayanan

Determination of L-tryptophan using Ruthenium Hexacyanoferrate Film Modified Gold Nanoparticle Graphite Composite Electrode

V. Narasiman, S. Jeyakumar & M. Mani

Neat Sardine Oil – An Alternative Fuel for Diesel Engine with Various Loads

Martand T. Telsang and N. D. Jadhav

Parametric Optimisation and Sensitivity Analysis of Submerged ARC Welding Process for SA-516 Gr-70 Steel

Ashis Acharjee and Prasun Chakraborti

Perspectives and Problems of International Technology Transfer for Improvements of District Heating System in India

Shyam Sunder and Vinod Yadava

Modeling and Optimization of Material Removal Rate and Surface Roughness in Surface - Electrical Discharge Diamond Grinding Process of Al-SiC Composite

M. Durairaj, S. Gowri D. Sudharsan and N. Sreemathy

Application of Genetic Algorithm in the Optimization of Cutting Parameters in Wirecut EDM using Stainless Steel AISI 304

A. Ramanan, P. Senthilkumar & G. B. Bhaskar

Experimental Study on R744/ R134a and R744/R290 Mixture Boiling in Horizontal Tube

T. Rajasekaran and T. Ponvel Murugan

Surface Roughness and Material Removal Analysis for AISI1040 Steel in Micro Electric Discharge Machining Process

G. Elumalai and G. B. Bhaskar

GPS/GSM Based Intelligent Monitoring System for Vehicle Tracking

D. Suresh, N. Manikandan G. S. Bharath, A. Chandru S. Senthil, C. B. Sekar & R. Sasidharan

Experimental Investigation on Usage of Biodegradable Fibers in Manufacturing Hybrid Composite Materials

P. SanthanaMoorthy and G. B. Bhaskar

Machining, Analysis, Characterization and Applications of Glass, Carbon and Glass-Carbon Hybrid Composites - A Review

M. Durairaj, S. Gowri P. Sri Balakumaran, S. Subash & J. M. A. Thoufiq Abdul Aziz

Experimental Investigation of Process Parameter in Wire Cut Electrical Discharge Machining Using Titanium Alloy

S. Rajesh & G. B. Bhaskar

Modeling and Experimental Analysis of Composite Leaf Spring

R. Panneerdhass & A. Gnanavel Babu

Fatigue and Creep Life Prediction for Composite Material Using FEA

D. RamBabu, A. Karthik Nambi R. Natruraj, V. Mugundhan G. B. Bhaskar & A. Gnanavel babu

Design and Development of Human Factors based Shoe Midsole using Additive Manufacturing
International Journal of MECHANICAL ENGINEERING

VOLUME 9 • NUMBER 2 • DECEMBER 2016

CONTENTS

R. Sharma, M. Ghosh & O. P. Sha
A D-NURBS Based Integrated Approach to the Design and Analysis of Heterogeneous Objects 107-118

K. S. Reddy, P. Karthikeyan
Ashwin Karthik & M. Pranesh
Effective Thermal Conductivity Models with Contact Resistance and Radiation for Two-Phase Materials 119-137

Anupam Chakrabarti
Vibration of Imperfect Sandwich Plates having Laminated Stiff Composite Layers 139-146

Shylaja Srihari, A. Revathi
Navaneetha. S, RMVGK Rao
Hygrothermal Studies on Novel Hybrid Composites 147-153

B. S. Sugun & RMVGK Rao
Impactor Mass effects in polymer Matrix Composites under Low Velocity Conditions: A Repeated Drops Test Approach 155-162

Somna Mishra

Ranjana Yadav & Deepak Srivastava
Studies on The Blend System Based on Cardanol-based Epoxidized Novolac and Reactive Liquid Rubber 175-188

M. Suresh Kumar, K. Raghavendra
J. B. Madhusudhanan
H. V. Ramachandra & M A Venkataswamy
Fractography and Failure Analysis of Carbon Fiber Reinforced Plastic (CFRP) Composite Laminates 189-198