

International Conference on Emerging Trends in Engineering Research 2016

IOP Conference Series: Materials Science and Engineering
Volume 183

Chennai, India
20 – 21 October 2016

Editors:

**M. Chandrasekaran
S. Arun**

ISBN: 978-1-5108-3771-3
ISSN: 1757-8981

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (2016) by the Institute of Physics
All rights reserved. The material featured in this book is subject to
IOP copyright protection, unless otherwise indicated.

Printed by Curran Associates, Inc. (2017)

For permission requests, please contact the Institute of Physics
at the address below.

Institute of Physics
Dirac House, Temple Back
Bristol BS1 6BE UK

Phone: 44 1 17 929 7481
Fax: 44 1 17 920 0979

techtracking@iop.org

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

Table of contents

Volume 183

**International Conference on Emerging Trends in Engineering Research
20–21 October 2016, Chennai, India**

**Accepted papers received: 28 February 2017
Published online: 10 March 2017**

Preface

011001

OPEN ACCESS

[International Conference on Emerging Trends in Engineering Research](#)

011002

OPEN ACCESS

[Peer review statement](#)

Metals, Alloys and Composite

012001

OPEN ACCESS

[Woven Hybrid Composites - Tensile and Flexural Properties of Jute Mat Fibres with Epoxy Composites](#)

P Gopal, V K Bupesh Raja, M Chandrasekaran and C Dhanasekaran.....1

012002

OPEN ACCESS

[Characterization of Nylon 6 Nano Fiber/E-Glass Fiber Reinforced Epoxy Composites](#)

T Vinod Kumar, M Chandrasekaran, V Santhanam and N Udayakumar.....6

012003

OPEN ACCESS

[Optimization of process parameters in drilling of fibre hybrid composite using Taguchi and grey relational analysis](#)

B Vijaya Ramnath, S Sharavanan and J Jeykrishnan.....12

012004

OPEN ACCESS

[Design and Fabrication of E-Glass /carbon/graphite epoxy hybrid composite leaf spring](#)

T Gopalakrishnan, M Raja, V M Jothi Prakash and C Gnanavel.....25

012005

OPEN ACCESS

[Experimental Investigation of Thermal Properties in Glass Fiber Reinforced with Aluminium](#)

S Joseph Irudaya raja, T Vinod Kumar, R Sridhar and P Vivek.....32

012006

OPEN ACCESS

[Effect of Coupling Agent on Mechanical Properties of Palm Petiole Nanofiber Reinforced Composite](#)

T Vinod Kumar, M Chandrasekaran, V Santhanam and V D Sudharsan.....41

012007

OPEN ACCESS

[Estimation of fracture parameters for Al-SiC and Al-Fe₂O₃ metal matrix composites](#)

S Jacob, R Sridhar and S Joseph Irudaya Raja.....48

012008

OPEN ACCESS

[Reciprocating Sliding Behaviour of Solid Lubricant Coating over Modified Titanium Alloy Surfaces](#)

V M Jothi Prakash, S Sathish, T Gopalakrishnan and S Venugopal.....57

012009

OPEN ACCESS

[Design, Manufacture and Analysis of Al/SiC MMCs for Connecting Rod](#)

S. Ramasubramanian, M. Chandrasekaran, R. Sridhar and K. Karunakaran.....62

012010

OPEN ACCESS

[Thermal analysis on Al7075/Al₂O₃ metal matrix composites fabricated by stir casting process](#)

S Jacob, S Shajin and C Gnanavel.....69

012011

OPEN ACCESS

[Comparative Investigation on Modal analysis of LM25 Aluminium alloy with other Aluminim alloys using Finite element analysis software](#)

S Arunkumar, V P M Baskaralal and V Muthuraman.....77

Advanced Manufacturing Technology

012012

OPEN ACCESS

[Experimental evaluation of machining parameters in machining of 7075 aluminium alloy with cryogenic liquid nitrogen coolant](#)

V Muthuraman and S Arunkumar.....87

012013

OPEN ACCESS

[Experimental Investigation of Turning Parameters on AA 6061-T6 Material](#)

A Parthiban, R Pugazhenthii, R Ravikumar and P Vivek.....94

012014

OPEN ACCESS

[Investigation of Machine-ability of Inconel 800 in EDM with Coated Electrode](#)

K. Karunakaran and M. Chandrasekaran.....102

012015

OPEN ACCESS

[Restructured review on Electrical Discharge Machining - A state of the art](#)

C Gnanavel, R Saravanan, M Chandrasekaran and R Pugazhenti.....109

012016

OPEN ACCESS

[Cast Off expansion plan by rapid improvement through Optimization tool design, Tool Parameters and using Six Sigma's ECRS Technique](#)

T Gopalakrishnan and R Saravanan.....122

012017

OPEN ACCESS

[Comprehensive Study on Wastages of Supply Chain Information Sharing in Automotive Industries](#)

R Sendhil Kumar, S Pugazhenti, C Muralidharan and S Murali.....132

012018

OPEN ACCESS

[Computational Fluid Dynamic Simulation of Flow in Abrasive Water Jet Machining](#)

S Venugopal, S Sathish, V M Jothi Prakash and T Gopalakrishnan.....142

012019

OPEN ACCESS

[Modeling and Prototyping of Automatic Clutch System for Light Vehicles](#)

S Murali, V M Jothi Prakash and S Vishal.....148

012020

OPEN ACCESS

[Improvement of Productivity in TIG Welding Plant by Equipment Design in Orbit](#)

C Gnanavel, R Saravanan, M Chandrasekaran and J J Jayakanth.....152

012021

OPEN ACCESS

[Computational Fluid Dynamics Analysis of Nozzle in Abrasive Water Jet Machining](#)

S Venugopal, M Chandrasekaran, V Muthuraman and S Sathish.....161

012022

OPEN ACCESS

[Optimization of CO₂ laser cutting parameters on Austenitic type Stainless steel sheet](#)

A Parthiban, S Sathish, M Chandrasekaran and R Ravikumar.....166

012023

OPEN ACCESS

[Case Study of Cycle Time Reduction by Mechanization in Manufacturing Environment](#)

C Gnanavel, R Saravanan, M Chandrasekaran and R Pugazhenti.....175

012024

OPEN ACCESS

[Optimization of the Machining parameter of LM6 Aluminium alloy in CNC Turning using Taguchi method](#)

S Arunkumar, V Muthuraman and V P M Baskaralal.....182

012025

OPEN ACCESS

[Optimal Solution for an Engineering Applications Using Modified Artificial Immune System](#)

S Padmanabhan, M Chandrasekaran, S Ganesan, Mahamed Naveed Khan patan and Polina Navakanth.....191

012026

OPEN ACCESS

[Optimization of heterogeneous Bin packing using adaptive genetic algorithm](#)

R Sridhar, M Chandrasekaran, C Sriramy and Tom Page.....196

012027

OPEN ACCESS

[Critical Machine Based Scheduling -A Review](#)

P Vivek, R Saravanan, M Chandrasekaran and R Pugazhenthithi.....208

012028

OPEN ACCESS

[Properties of Concrete partially replaced with Coconut Shell as Coarse aggregate and Steel fibres in addition to its Concrete volume](#)

P R Kalyana Chakravarthy, R Janani, T Ilango and K Dharani.....216

012029

OPEN ACCESS

[Keyword Extraction from Multiple Words for Report Recommendations in Media Wiki](#)

K Elakiya and Arun Sahayadhas.....228

012030

OPEN ACCESS

[Heuristic for Critical Machine Based a Lot Streaming for Two-Stage Hybrid Production Environment](#)

P Vivek, R Saravanan, M Chandrasekaran and R Pugazhenthithi.....236

Renewable energy

012031

OPEN ACCESS

[Analysis of Biomethanation Process from market waste to generate bio energy](#)

S Sathish, A Parthiban, T Vinod kumar and M Chandrasekaran.....244

012032

OPEN ACCESS

[Effect on air quality and flow rate of fresh water production in humidification and dehumidification system](#)

K Rajasekar, R Pugazhenthithi, A Selvaraju, T Manikandan and R Saravanan.....249

012033

OPEN ACCESS

[Performance and Analysis of Floating dome Anaerobic Digester with Wet and Dry Feedstock](#)

S. Sathish, A. Parthiban, S. Venugopal and V. M. Jothi Prakash.....259

012034

OPEN ACCESS

[A Simple Control Strategy Using Speedy Transient Response for Multiphase Buck Converter](#)

K Sasikala, D Ravikumar and B Rubini.....265

012035

OPEN ACCESS

[Investigation of solar water heater by using flat plate collector and evacuated tubes](#)

J J Jayakanth, S Ramasubramanian, M Chandrasekaran and S Manavalan.....274

Alternative fuels

012036

OPEN ACCESS

[Processing Of Neem And Jatropha Methyl Esters –Alternative Fuels From Vegetable Oil](#)

S Ramasubramanian, S Manavalan, C Gnanavel and G Balakrishnan.....280

012037

OPEN ACCESS

[Investigation of Performance Analysis and Emission Characteristics of Waste Plastic Fuel](#)

M Ruban, S Ramasubramanian, R Pugazhenthii and Sivaganesan.....286

012038

OPEN ACCESS

[A Comparative Characteristic Study of Jatropha and Cardanol Biodiesel Blends](#)

R Pugazhenthii, M Chandrasekaran, R K Muthuraman, P Vivek and A Parthiban.....293

012039

OPEN ACCESS

[Impact of Various Compression Ratio on the Compression Ignition Engine with Diesel and Jatropha Biodiesel](#)

S Sivaganesan, M Chandrasekaran and M Ruban.....303