3rd International Conference on Mechanical Engineering Research (ICMER 2015)

IOP Conference Series: Materials Science and Engineering Volume 100

Kuantan, Malaysia 18 - 19 August 2015

ISBN: 978-1-5108-1809-5 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© (2015) 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. (2016)

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: 845-758-2634 Email: curran@proceedings.com Web: www.proceedings.com

Table of contents

Volume 100

3rd International Conference of Mechanical Engineering Research (ICMER 2015) 18?19 August 2015, Kuantan, Pahang, Malaysia

Accepted papers received: 27 October 2015 Published online: 22 December 2015

Preface

011001

<u>3rd International Conference of Mechanical Engineering Research (ICMER 2015)</u> OPEN ACCESS R Mamat, M Rahman, N M Zuki Nik Mohamed, S Anwar Che Ghani, W Sharuzi Wan Harun

011002

Peer review statement OPEN ACCESS

Papers

012001

<u>Rheological study of feed stock for NiTi alloy molded parts</u> OPEN ACCESS I Subuki, Z Abdullah, R Razali and M H Ismail''''r i 03'''

012002

Feature combination analysis in smart grid based using SOM for Sudan national grid OPEN ACCESS Z H Bohari, M A M Yusof, M H Jali, M F Sulaima and M N M Nasir''''r i 0':

012003

<u>Statistical analysis of imperfection effect on cylindrical buckling response</u> OPEN ACCESS M S Ismail, J Purbolaksono, N Muhammad, A Andriyana and H L Liew''''r i 036

012004

Effect of phase advance on the brushless dc motor torque speed respond OPEN ACCESS M S Mohd, M N Karsiti and M S Mohd""r i 048

<u>A review on simple assembly line balancing type-e problem</u> OPEN ACCESS M Jusop and M F F Ab Rashid'"'r i 059

012006

Experimental study on the effect of varying syngas composition on the emissions of dual fuel CI engine operating at various engine speeds OPEN ACCESS B K M Mahgoub, S A Sulaiman, Z A A Karim and F Y Hagos''''r i 0'68

012007

Leak detection in medium density polyethylene (MDPE) pipe using pressure transient method OPEN ACCESS M M Amin, M F Ghazali, M A PiRemli, A M A Hamat and N F Adnan''''r i 076

012008

Combustion parameters of spark ignition engine using waste potato bioethanol and gasoline blended fuels OPEN ACCESS B Ghobadian, G Najafi, M Abasian and R Mamat""r i 082

012009

Design of single phase inverter using microcontroller assisted by data processing applications software OPEN ACCESS K Ismail, A Muharam, Amin and S Widodo Budi'''r i 08;

012010

Performance and energy saving analysis of a refrigerator using hydrocarbon mixture (HC-R134a) as working fluid OPEN ACCESS M N Mohtar, H Nasution and A A Aziz''''r i 099

012011

<u>Mechanical behavior of Kenaf/Epoxy corrugated sandwich structures</u> OPEN ACCESS S Bakhori, M Z Hassan, Y Daud, S Sarip, N Rahman, Z Ismail and S A Aziz''''r i 0: 7

012012

<u>Performance and emission parameters of single cylinder diesel engine using castor oil</u> <u>bio-diesel blended fuels</u> OPEN ACCESS A Rahimi, B Ghobadian, G Najafi, F Jaliliantabar and R Mamat''''r i 0; 5

Leak detection in gas pipeline by acoustic and signal processing - A review OPEN ACCESS N F Adnan, M F Ghazali, M M Amin and A M A Hamat''''r i 0323

012014

Numerical studies on the separation performance of liquid-liquid Hydrocyclone for higher water-cut wells OPEN ACCESS H Osei, H H Al-Kayiem and F M Hashim''''r i 0332

012015

<u>A review on model updating in structural dynamics</u> OPEN ACCESS N A Z Abdullah, M S M Sani, M M Rahman and I Zaman'''r i 0339

012016

Mechanical and microstructural characterization of single and double pass Aluminum AA6061 friction stir weld joints OPEN ACCESS N H Othman, L H Shah and M Ishak''''r i 0345

012017

Dynamic performances analysis of a real vehicle driving OPEN ACCESS M A Abdullah, J F Jamil and M A Salim'"'r i 0353

012018

Energy regenerative suspension test for EEV and hybrid vehicle OPEN ACCESS M A Abdullah, J F Jamil and N S Muhammad''''r i 0363

012019

<u>Critical evaluation on structural stiffness of porous cellular structure of cobalt chromium</u> <u>alloy</u> OPEN ACCESS N M S Abd Malek, S R Mohamed, S A Che Ghani and W S Wan Harun''''r i 036:

012020

Analysis of semi-active vehicle suspension system using airspring and MR damper OPEN ACCESS A H Tesfay and V K Goel'"r i 037:

012021

Preparing side charging of PCM storage: theoretical and experimental investigation OPEN ACCESS A H Tesfay, F Y Hagos, K G Yohannes, O J Nydal and M B Kahsay""r i 0397"

012022

Reliability and availability analysis for robot subsystem in automotive assembly plant: a case study OPEN ACCESS A F Fudzin and M A A Majid'"'r i 03: 9

012023

Application of artificial neural network for prediction of marine diesel engine performance OPEN ACCESS C W Mohd Noor, R Mamat, G Najafi, W B Wan Nik and M Fadhil'''r i 03; 6

012024

An investigation of urban boundary layer towards achieving similarity criteria in a short wind tunnel OPEN ACCESS A W M Yazid, N A Che Sidik, S Mansor, A B Abdul Rahman, I S Ishak and N Dahalan'''r i 0426

012025

Simulation analysis of the oil/water structure in the downhole with presence of hydrocyclone separator OPEN ACCESS I E Jamil and H H Al-Kayiem'"'r i 0437

012026

Investigation of mechanical field weakening of axial flux permanent magnet motor OPEN ACCESS M Syaifuddin Mohd, A Rashid A Aziz and M Syafiq Mohd'''r i 0446

012027

Effect of wear on the burst strength of 1-80 steel casing OPEN ACCESS S Irawan, A M Bharadwaj, B Temesgen, S Karuppanan and M Z B Abdullah''''r i 0455

012028

Impact of the electric compressor for automotive air conditioning system on fuel consumption and performance analysis OPEN ACCESS A A Zulkifli, A A Dahlan, A H Zulkifli, H Nasution, A A Aziz, M R M Perang, H M Jamil and M N Misseri''''r i 0465

Performance investigation of a waste heat driven pressurized adsorption refrigeration cycle OPEN ACCESS K Habib'"'r i 046;

012030

<u>The effect of substantive parameters on the efficiency of Archimedes screw microhydro</u> <u>power: a review</u> OPEN ACCESS A Nurul Suraya, N M M Ammar and J Ummu Kulthum''''r i 0479

012031

A passive cooling system of residential and commercial buildings in summer or hot season OPEN ACCESS M M Rahman, M Mashud, C M Chu, M S bin Misaran, M Sarker and S Kumaresen'"'r i 0488

012032

The combustion behavior of diesel/CNG mixtures in a constant volume combustion chamber OPEN ACCESS Firmansyah, A R A Aziz and M R Heikal""r i 0494

012033

<u>Investigation of mechanical properties for open cellular structure CoCrMo alloy</u> <u>fabricated by selective laser melting process</u> OPEN ACCESS A Azidin, Z A M Taib, W S W Harun, S A Che Ghani, M F Faisae, M A Omar and H Ramli""r i 049;

012034

<u>Development of a KT driving cycle for UMT PHEV powertrain</u> OPEN ACCESS W H Atiq, M N Haezah, J S Norbakyah and A R Salisa''''r i 04: 9

012035

Power requirements for PHERB powertrain OPEN ACCESS J S Norbakyah, W H Atiq and A R Salisa''''r i 04; 6

012036

<u>A conceptual design of main components sizing for UMT PHEV powertrain</u> OPEN ACCESS M N Haezah, J S Norbakyah, W H Atiq and A R Salisa''''r i 0522

<u>Fatigue strength of woven kenaf fiber reinforced composites</u> OPEN ACCESS A E Ismail and M A Che Abdul Aziz''''r i 0'528

012038

The effect of welding parameters on surface quality of AA6351 aluminium alloy OPEN ACCESS S Yacob, M A MAli, Q Ahsan, N Ariffin, R Ali, A Arshad, M I A Wahab, S A Ismail, NS M Roji, W B W Din, M H Zakaria, A Abdullah, M I Yusof, K Z Kamarulzaman, A Mahyuddin, M N Hamzah and R Roslan''''r i 0537

012039

Design and development of split-parallel through-the road retrofit hybrid electric vehicle with in-wheel motors OPEN ACCESS S A Zulkifli, M Syaifuddin Mohd, M Maharun, N S A Bakar, S Idris, S H Samsudin, Firmansyah, J J Adz, M Misbahulmunir, E Z Z Abidin, M Syafiq Mohd, N Saad and A R A Aziz''''r i 0'542

012040

Review of magnetorheological fluids and nanofluids thermal behaviour OPEN ACCESS M S A Rahim and I Ismail'"'r i 0555

012041

Performance of CO₂ enrich CNG in direct injection engine OPEN ACCESS W B Firmansyah, E Z Ayandotun, A Zainal, A R A Aziz and M R Heika''''r i 0565

012042

Parametric studies on tensile strength in joining AA6061- T6 and AA7075-T6 by gas metal arc welding process OPEN ACCESS M Ishak, N F M Noordin and L H Shah'"'r i 0573

012043

Performance investigation of the <u>S-Rotors</u> OPEN ACCESS B A Bhayo, H H Al-Kayiem and N Z Yahaya''''r i 0'57:

012044

Modeling of diesel/CNG mixing in a pre-injection chamber OPEN ACCESS H A Abdul-Wahhab, A R A Aziz, H H Al-Kayiem and M S Nasif'''r i 0589

<u>Conceptual design of semi-automatic wheelbarrow to overcome ergonomics problems</u> <u>among palm oil plantation workers</u> OPEN ACCESS N S M Nawik, B M Deros, M N A Rahman, E H Sukadarin, N Nordin, S B M Tamrin, S A Bakar and M L Norzan''''r i 0598

012046

Aerobic rice mechanization: techniques for crop establishment OPEN ACCESS K M Khusairy, H Ayob, C S Chan, M I Mohamed Fauzi, Z O Mohamad Fakhrul, G S M Shahril Shah, O Azlan, M A Rasad, A M Hashim, Z Arshad, E Ibrahim E and M N Saifulizan''''r i 05: 5

012047

Analysis on the grinding quality of palm oil fibers by using combined grinding equipment OPEN ACCESS H L Gan, L M Gan and H C Law""'r i 05: :

012048

Combustion and emissions characteristics of a compression ignition engine fueled with nbutanol blends OPEN ACCESS I M Yusri, R Mamat, O M Ali, A Aziz, M K Akasyah, M K Kamarulzaman, C K Ihsan, H M Mahmadul and S M Rosdi""r i 05; 8

012049

The influence of the equivalent hydraulic diameter on the pressure drop prediction of annular test section OPEN ACCESS A H H Al-Kayiem and M A Ibrahim'"'r i 0626

012050

Design consideration for design a flat and ring plastics part using Solidworks software OPEN ACCESS M A M Amran, K M Faizal, M S Salleh, M A Sulaiman and E Mohamad''''r i 0'634

012051

Size effects in thin sheet metal forming OPEN ACCESS T A Chang, A R Razali, N A I Zainudin and W L Yap''''r i 0643

012052

Numerical simulation of rock cutting using 2D AUTODYN OPEN ACCESS D E Woldemichael, A M Abdul Rani, T A Lemma and K Altaf""r i 064;

012053

Influence of resin system on the energy absorption capability and morphological properties of plain woven kenaf composites OPEN ACCESS S D Salman, Z Leman, M T H Sultan, M R Ishak and F Cardona'''r i 0657

012054

Numerical analysis of cocurrent conical and cylindrical axial cyclone separators OPEN ACCESS M A M Nor, H H Al-Kayiem and T A Lemma''''r i 0665

012055

Monotonic and fatigue properties of kenaf /glass hybrid composites under fully reversed cyclic loading OPEN ACCESS M J Sharba, Z Leman, M T H Sultan, M R Ishak and M A A Hanim'''r i 0672

012056

Dynamic Response and Signal to Noise Ratio Investigation of NIR-FBG Dynamic Sensing System for Monitoring Thin- walled Composite Plate OPEN ACCESS Z M Hafizi and J Epaarachchi""ri 067:

012057

An investigation of cutting mechanics in 2 dimensional ultrasonic vibration assisted milling toward chip thickness and chip formation OPEN ACCESS I I Rasidi, N H Rafai, E A Rahim, S A Kamaruddin, H Ding and K Cheng""r i 068:

012058

Surface Roughness and Tool Wear on Cryogenic Treated CBN Insert on Titanium and Inconel 718 Alloy Steel OPEN ACCESS S Thamizhmanii, R Mohideen, A M A Zaidi and S Hasan'''r i 0696

012059

Numerical analyses for improved hydrodynamics of deep water torpedo anchor OPEN ACCESS B P Soh, W Pao and H H Al-Kayiem'"'r i 06: 5

012060

Numerical simulation of damage evolution for ductile materials and mechanical properties study OPEN ACCESS A El Amri, I Hanafi, M E Y Haddou and A Khamlichi''''r i 06; 5

012061

Engine performance and emission of compression ignition engine fuelled with emulsified biodiesel-water OPEN ACCESS W N Maawa, R Mamat, G Najafi, O Majeed Ali and A Aziz''''r i 06; ;

012062

Simulation study of electromagnetic circuit design in laminated magnetorheological elastomer isolator OPEN ACCESS N A A Wahab, S A Mazlan, K Hairuddin and H Zamzuri''''r i 0728

012063

Numerical simulation of a novel expanded metal tubular structure for crashworthiness application OPEN ACCESS A H A Abdelaal and F Tarlochan'''r i 0734

012064

Influence of damping coefficient from permanent magnets on chatter formation during end milling of titanium alloy (Ti-6Al-4V) OPEN ACCESS S A Sulaiman and A N Amin'''r i 0743

012065

Immersed boundary-lattice Boltzmann method for simulation of muco-ciliary transport: effect of mucus depth at various amounts of cilia beat frequency OPEN ACCESS M M Shahmardan, M H Sedaghat, M Norouzi and M Nazari''''r i 0752

012066

Numerical prediction of flow induced fibers orientation in injection molded polymer composites OPEN ACCESS A N Oumer, N M Hamidi and I Mat Sahat""r i 0762

012067

<u>Mediator effect of statistical process control between Total Quality Management (TQM)</u> and business performance in Malaysian Automotive Industry OPEN ACCESS M F Ahmad, R Z Rasi, N Zakuan and M N N Hisyamudin'''r i 0769

<u>Behaviour of hybrid jute-glass/epoxy composite tubes subjected to lateral loading</u> OPEN ACCESS A A Khalid''''r i 0776

012069

Support vector machine to predict diesel engine performance and emission parameters fueled with nano-particles additive to diesel fuel OPEN ACCESS M Ghanbari, G Najafi, B Ghobadian, R Mamat, M M Noor and A Moosavian'''r i 0784

012070

Adaptive neuro-fuzzy inference system (ANFIS) to predict CI engine parameters fueled with nano-particles additive to diesel fuel OPEN ACCESS M Ghanbari, G Najafi, B Ghobadian, R Mamat, M M Noor and A Moosavian'''r i 0792