

4th International Conference on Design and Manufacturing Engineering 2019

IOP Conference Series: Materials Science and Engineering
Volume 627

Geelong, Australia
15 – 17 July 2019

ISBN: 978-1-5108-9831-8
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.

This work is licensed under a Creative Commons Attribution 3.0 International Licence. Licence details:
<http://creativecommons.org/licenses/by/3.0/>.

No changes have been made to the content of these proceedings. There may be changes to pagination and minor adjustments for aesthetics.

Printed with permission by Curran Associates, Inc. (2020)

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 627

4th International Conference on Design and Manufacturing Engineering

15–17 July 2019, Geelong, Australia

Accepted papers received: 27 August 2019

Published online: 18 October 2019

Preface

[Preface](#)

[Conference Committee](#)

[Peer review statement](#)

Papers

Manufacturing Technology

[Measuring effectiveness and efficiency of a new product development project using performance matrix – The PROTON case](#)

H Boejang, M Z Hassan, T Mokudai, H Ariff and S Esa.....1

[An approach to determine condition of boring tool using acoustic & vibration signals](#)

Pranjali S. Deole, Shital S. Chiddarwar and Vishwas S. Deshpande.....8

[Evaluation of brazed monolayer CBN grinding wheel on high-speed steel \(HSS\)](#)

Bhaskar Pal, Muralidhar and Nepal Adhikary.....15

[Mining and analyzing process similarity of product module for DPIPP based on PLM database](#)

W P Peng, T Zhang, Q H Zhang and S W Ni.....20

[Parametric optimization in Rotary Ultrasonic Drilling of BK7 through RSM based PSO](#)

Hari Singh and Vikas Kumar.....30

[Research of the Green Product Design and Evaluation Methods based on Concurrent Engineering](#)

Li Xiaona and Liu Xin.....35

[A Robust Optimization Scheduling for Carrier Aircraft Support Operation Based on Critical Chain Method](#)

Peilong Yuan, Wei Xiao, Zhengyang Li, Hongyu Liang and Zhenyu Zhao.....41

[Research on Changed Design of Gate Position of Window Frame of Automobile Front Door](#)

Haorui Zhai, Xin Xing, ZhuAn Zheng, Conggui Sun and Chen Teng.....54

[The Study of Geometric Parameters of the Mong Impact on Natural Frequency](#)

Joompon Bamrungwong and Bancha Arthibenyakul.....62

[Research on the Trend of Structural Failures from Vehicle Body Spreader Based on ANSYS Analyses](#)

Duo Sun, Tianmin Guan and Lei Lei.....69

[Upgrading Strategy of Small and Medium Manufacturing Enterprises \(SMMEs\) to Smart Manufacturing](#)

Baolei Zhang, Fuquan Zhao and Zongwei Liu.....75

[Economic prospects of multiproduct manufacturing based on the Afrikanda deposit ores](#)

Vladimir Masloboev, Sergey Fedoseev, Pavel Tcvetkov and Sergey Krivovichev.....87

[The Automatic Measurement System for Harmonic-drive Devices](#)

Yuansong Zheng, Zhifeng Lou, Xiaodong Wang and Siying Ling.....93

[Error Analysis of a Kind of 3D Laser Ball Bar](#)

Liang Xu, Yuchen Tian, Zhifeng Lou, Fan Kuangchao, Liding Wang, Xiaodong Wang and Tongqun Ren.....98

Material Science

[Water absorption and thermal degradation behavior of graphene reinforced poly\(lactic\) acid nanocomposite](#)

OT Adesina, T Jamiru, ER Sadiku, OF Ogunbiyi and TA Adegbola.....103

[Evaluation and optimization of machining performance for rotary ultrasonic machining of Al/SiC composite material](#)

Jatinder Kumar.....109

[Mechanical performance of GNP/PLA nanocomposite under varied SPS process parameters](#)

OT Adesina, T Jamiru, ER Sadiku, MO Durowoju and OF Ogunbiyi.....114

[Selection of the optimal heat treatment conditions using advanced phase transformation models](#)

Krzysztof Bzowski, Lukasz Rauch and Maciej Pietrzyk.....119

[A Semi-Analytic Solution for Plane Strain Bending Under Tension of a Strain Hardening Sheet Including Ductile Fracture Prediction](#)

S E Alexandrov, E A Lyamina and N Mosleni.....123

[Push-Over Analysis of RC Frame with Corroded Rebar](#)

Piero Colajanni, Antonino Recupero and Nino Spinella.....128

[Anti-sliding Risk Model of Wet Surface for Asphalt Pavement and Test Verification](#)

Ke Zhong, Mingzhi Sun, Zhaoxu Liu, Xiaochen Ma, Fei Chen and Rong Ma.....135

[Automatic Deformation Measurement Equipment for PZT Wafer](#)

T Q Ren, X Li, Z F Lou and X D Wang.....141

[Automatic Hot Pressing System for Indium Packaging](#)

Yi Luo, Yawei Li, Xiaodong Wang and Xiaoxu Qiao.....147

[Molecular Dynamics Simulation of Heat Transfer at Contact Interface of Hot Forming Die](#)

Baoshan Lu, Leigang Wang and Xiang Ma.....152

[Laccase Enzyme Immobilization on Ferromagnetic Support Material for Oil Palm Empty Fruit Bunches \(OPEFB\) Pretreatment](#)

Shah Samiur Rashid, Hu Shian Huan, Mohd Hasbi Bin Ab Rahim, Md. Belal Hossain Sikder and Ahmed Abdulsalam H Sasi.....157