3rd International Conference on Materials Engineering and Nano Sciences (ICMENS 2019)

IOP Conference Series: Materials Science and Engineering Volume 625

Hiroshima, Japan 26 – 28 March 2019

ISBN: 978-1-5108-9829-5 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.

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 625

2019 the 3rd International Conference on Materials Engineering and Nano Sciences (ICMENS 2019)

26-28 March 2019, Hiroshima, Japan

Accepted papers received: 27 August 2019 Published online: 30 September 2019

Preface

Preface

Conference Committees

Peer review statement

Papers

Material structure and properties

Halogenated monolayer SnS: a first-principles studies

K H Yeoh, T L Yoon, Rusi, D S Ong and T L Lim....1

<u>Silicon-doped indium oxide – a promising amorphous oxide semiconductor material for</u> <u>thin-film transistor fabricated by spin coating method</u>

Ha Hoang, Kazutaka Sasaki, Tatsuki Hori, Kazuhito Tsukagoshi, Toshihide Nabatame, Bui Nguyen Quoc Trinh and Akihiko Fujiwara.....6

Analysis of the mechanical response of materials used in design for highly stressed components

Josip Brnic, Sanjin Krscanski and Marino Brcic....11

Equivalent beam model of single walled carbon nanotube with imperfections

Marino Brčić, Marko Čanađija and Josip Brnić.....16

Feasibility of producing unfired four-hole hollow bricks from blended cement-fly ashchippings under coupled-static forming pressure

Trong-Phuoc Huynh, Ngoc-Duy Do, Chao-Lung Hwang, Si-Huy Ngo and Ngoc-Hang Thi Mai.....21

Comparison of human and bovine dental enamel by TEM and t-EBSD investigations

A. Koblischka-Veneva, M. R. Koblischka, J. Schmauch and M. Hannig.....26

Development of a stretched absolute wavelength standard using dichroic atomic vapor spectroscopy towards observation of light-induced drift

Y Kusano, N Nishiya and L Matsuoka.....33

Splitting tensile strength of lightweight concrete using polypropylene coarse aggregate coated with sand

H Purnomo, R K Putri and P Perdani.....39

The effect of the composition of magnesia flux on the sinter structure and properties

A N Shapovalov, E V Ovchinnikova, V B Gorbunov, R R Dema and O B Kalugina.....45

Strength and thermal properties of unfired four-hole hollow bricks manufactured from a mixture of cement, low-calcium fly ash and blended fine aggregates

Trong-Phuoc Huynh, Trong-Chuc Nguyen, Ngoc-Duy Do, Chao-Lung Hwang and Le Anh-Tuan Bui.....51

Material preparation and production

The enhancement of high dielectric properties for pure PVDF-HFP by using the suitable stirred temperature and time

A Salea, K Jehlaeh and C Putson.....56

Microstructures of nanoporous-Si composite anodes in sulfide-based all-solid-state lithium-ion batteries

R Okuno, M Yamamoto, A Kato, Y Terauchi and M Takahashi.....60

Mechanical strength of natural rubber filled fly ash

A Dasaesamoh, T Osotchan and K Subannajui.....65

Furfuryl alcohol-derived carbon monoliths for CO2 capture: adsorption isotherm and kinetic study

J Singh, S Basu and H Bhunia.....69

Electrochemical determination of diethylstilbestrol by using a magnetic nanoparticle/graphene composite film electrode

Yingyot Poo-arporn, Saithip Pakapongpan and Rungtiva P. Poo-arporn.....74

Oxalate precipitation synthesis of copper-manganese nanoparticles for methanol steam reforming

Y D G Edañol, R L Barbosa, S C Buenviaje and L M Payawan Jr.....79

Fabrication of solar cell using titanium, zinc, carbon and gold nanoparticles

A D C Z S Lim and M R M Julaihi.....84

Nanostructured zinc oxide films grown via microwave-assisted H₂O oxidation for perovskite solar cells

C M Pelicano and H Yanagi.....90

Using non-continuous gold film as the seed layer for developing zinc oxide nanowire array

P-K Chiu, C-W Lin, D-R Huang, C-T Yang and D Chiang.....94

Material applications

Photo-oxidation of an organosulfur for photo-charging of lithium-ion batteries

Hiroyuki Shingu, Hiroshi Uemachi and Akihiko Fujiwara.....99

Development of Nano TiO₂ Coated Cement Surface Degradation Properties by the <u>Photocatalytic</u>

Pheeraphong Bunroek and Pat Sooksaen....105

A novel inertial sensor exploiting magnetic fluid

X Zhang, X Xia, W Zhang and Z Xiang.....111

Synthesis of carbon nanoparticles using various electrolyte concentrations in submerged glow discharge plasma

M S Ranjit and M R M Julaihi.....120

Synthesis of calcium phosphate composite organogels by using castor oil and sorbitan monopalmitate based for dentine occlusion material

J Waiyawat, K Akkarachaneeyakorn, P Changpongpan, M Kongsema, C Teanchai and O Chienthavorn.....125

Application of kepok banana peel activated carbon prepared by conventional and microwave heating for malachite green adsorption

W Astuti, Megawati, MA Mahardhika, DA Putri, M Rohman, MF Sihab, T Sulistyaningsih, M Hidayah, L Fitriana and EF Irchamsyah.....130

The increase of biodiesel B20 oxidation stability using antioxidant obtained from soursop leaves extraction through microwave assisted extraction technique

Megawati, W Astuti, U M Arief, R R Ginting and W Sammadikun.....135

Functional targeting nanomicelles with ph-triggered peptide activation for improved drug delivery in lung cancer

Yuehua Wang, Fei Jia, Chunyan Yue, Jian Sun and Weizhi Wang.....140

Microstructure and properties of superconducting, ferromagnetic and hybrid nanowire networks of $La_{1.85}Sr_{0.15}CuO_4$ and $La_{0.5}Sr_{0.5}MnO_3$

M. R. Koblischka, A. Koblischka-Veneva, X. L. Zeng and T. Karwoth.....145

Study of delignification process and crystallinity index on lignocellulose components of corn cob in different pretreatments: a combination of pretreatment (ionic choline acetate and NaOH) and NaOH pretreatment

U. Rofiqah, A. Safitri and Fadhilah....153

Assessment of climatic variation on bio cement mortar-based infrastructure

M Abdulkareem, F Ayeronfe, M Z A Majid, A R M Sam and J H J Kim.....158

<u>Characterization of coffee grounds as biosorbent for removal dyes from aquaeous</u> <u>solutions</u>

N. I. F. Mukti and A. Hidayat.....163