

International Conference on Advanced Materials and Technology (ICAMT 2019)

Innovation of Advanced Materials
Technology and Multidisciplinary
Research for a Better Life

IOP Conference Series: Materials Science and Engineering
Volume 924

Bogor, Indonesia
8 - 9 October 2019

Editors:

**Rida Nurul Shelni Rofika
Shinta Widyaningrum
Kartika Sari**

ISBN: 978-1-7138-3191-4
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. (2021)

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

ADVANCED FUNCTIONAL AND STRUCTURAL MATERIALS

ALUMINUM ALLOY PISTON FABRICATION TECHNOLOGY BY SUPER FORGING-KIRIU.....	1
<i>Lydia Anggraini, Adelya Anjany</i>	
THE EFFECT OF AMORPHOUS POLYSILAZANE AND INFILTRATION METHOD ON THE DENSIFICATION OF SICF/SIC COMPOSITES	8
<i>Alvin Muhammad Habieb, Alfian Noviyanto, Galuh Sukmarani, Retno Kusumaningrum, Fiqhi Fauzi, Wahyu Bambang Widayatno, Agus Sukarto Wismogroho, Muhamad Ikhlasul Amal, Nurul Taufiqu Rochman</i>	
DENSIFICATION OF SIC FROM AMORPHOUS POLYSILAZANE WITH THE ADDITION OF β -SIC AS A FILLER PREPARED BY HOT PRESSING FURNACE.....	16
<i>Galuh Sukmarani, Alfian Noviyanto, Retno Kusumaningrum, Alvin Muhammad Habieb, Fiqhi Fauzi, Wahyu Bambang Widayatno, Agus Sukarto Wismogroho, Muhamad Ikhlasul Amal, Nurul Taufiqu Rochman</i>	
THE STUDY OF SOGA BROWN COLOUR VISUAL DIGITIZATION FROM CLASSICAL BATIK OF YOGYAKARTA.....	22
<i>Almira Firmansyah</i>	
HEDONIC TEST OF KOMBUCHA COFFEE	28
<i>Raden Nana Kusdiana, Vinsensius Ferdi, Indra Kusumawardhana, Farah Levyta</i>	
THE EFFECT OF MECHANOCHEMICAL ON THE FORMATION OF CALCIUM TITANATE (CATIO3) PREPARED BY HIGH ENERGY MILLING.....	36
<i>Fiqhi Fauzi, Alvin Muhammad Habieb, Alfian Noviyanto, Retno Kusumaningrum, Galuh Sukmarani, Edela Uswah Dien Muhammad, Valleta Jovanka Widodo, Diva Calista Amalia, Didik Aryanto, Nurul Taufiqu Rochman</i>	
EFFECTS OF POURING TEMPERATURE VARIATIONS ON FATIGUE PROPERTIES OF AL-CU ALLOY AFTER REMELTING.....	43
<i>Hizba Muhammad Sadida, Priyo Tri Iswanto</i>	
DISTRIBUTION OF HARDNESS, SURFACE ROUGHNESS AND WETTABILITY OF AISI 316L INDUCED BY SHOT PEENING WITH DIFFERENT DURATION AND SHOOTING DISTANCE	49
<i>Priyo Tri Iswanto, Akhyar, Arif Faqihudin, Hizba Muhammad Sadida</i>	
STUDY OF EFFECTIVENESS OF INTEGRATED PUBLIC SPACE	56
<i>T. Herry Rachmatsyah, Chicilia</i>	
EFFECT OF NANO HYDROXYAPATITE IN TOOTHPASTE ON CONTROLLING ORAL MICROBIAL VIABILITY	64
<i>Aulia Rifada, Bannan Muthi'atul Afidah, Wafa Aufia, Agnia Vibriani, Maria Maghdalena, Kurniawan Eko Saputro, Dwi Wahyu Nugroho, M. Arief Iskandar, Arief Cahyanto, Alfian Noviyanto</i>	
POLICY IMPLEMENTATION IN WATER SERVICES	71
<i>Harry Nenobais, Sarbini</i>	

MATERIALS PROCESSING AND CHARACTERIZATION

DESIGN OF FRANGIBLE COMPOSITE PRODUCTION PROCESS AND PLANT LAYOUT WITH POWDER METALLURGY METHOD AND CAPACITY OF 50.000.000 ROUNDS/YEAR.....	75
<i>Widyastuti, F F Sulistya, V M Pratiwi, W Jatimurti, H Ardyananta</i>	
SHAPE MODIFICATION OF MANGANESE OXIDE PREPARED BY SOLVOTHERMAL: EFFECT OF PRECIPITATION AGENT	85
<i>Retno Kusumaningrum, Faustina De Yesu Prisila Abi, Galuh Sukmarani, Alvin Muhammad Habieb, Fiqhi Fauzi, Wahyu Bambang Widayatno, Agus Sukarto Wismogroho, Muhamad Ikhlusal Amal, Nurul Taufiqu Rochman, Alfian Noviyanto</i>	
REACTIVATING ADSORPTION CAPACITIES OF SPENT BLEACHING EARTH FOR USING IN CRUDE PALM OIL INDUSTRY	92
<i>Kurniawan Eko Saputro, Puji Siswanti, Dwi Wahyu Nugroho, Radium Ikono, Alfian Noviyanto, Nurul Taufiqu Rochman</i>	
CLEAN WATER PROGRAMS IN OEFABI VILLAGE, KUPANG, NUSA TENGGARA BARAT	100
<i>Prasetya Yoga Santoso, Radja Erland Hamzah, Erma Pratiwi</i>	
BOND STRENGTH, HARDNESS, AND MICROSTRUCTURE ANALYSIS OF STELLITE COATING APPLIED ON 410 STEEL SURFACE USING FLAME SPRAY, PLASMA SPRAY, AND HIGH-VELOCITY OXYFUEL SPRAY PROCESS.....	105
<i>Nail Widya Satya, Sunoto Mudiantoro, Winarto Winarto</i>	
FRACTURE TOUGHNESS AND MICROSTRUCTURE OF GAS METAL ARC WELDED PLATES OF ALUMINIUM ALLOY 5083 USING DIFFERENT FILLER WIRES AND HEAT INPUTS	114
<i>Arif Hidayat, Arif Junaidi, Sunoto Mudiantoro, Winarto Winarto</i>	
INFLUENCE THE FILLER METAL CONTAINING ZIRCONIUM ON THE WELD METAL POROSITY OF THE MIG WELDED ALUMINUM ALLOY 5083.....	124
<i>Wahidun Adam, Winarto Winarto, Sunoto Mudiantoro</i>	
PREPARATION AND STRUCTURES OF CARBON-COPPER OXIDE NANOFIBERS FROM ELECTROSPUN POLYACRYLONITRILE COMPOSITE	131
<i>Muhamad Nasir, Rana Ida Sugatri</i>	
CHARACTERISTICS OF MAGNESIUM/B4C REINFORCED COMPOSITE FABRICATED BY STIR CASTING METHOD	140
<i>Sutan Paulo Hang Jutanaiman, Anne Zulfia Syahrial</i>	
THE EFFECT OF AL ₂ O ₃ NANO PARTICLES ON CHARACTERISTICS OF MG-AL-5TiB GRAIN REFINER COMPOSITES PRODUCED BY STIR CASTING METHOD	149
<i>Alintiya Zhafara, S Anne Zulfia</i>	
STUDY ON THE EFFECT OF VOLUME FRACTION (VF%) SIC ADDITION TO THE CHARACTERISTICS OF MG-AL-SR / SIC COMPOSITES USING STIR CASTING METHOD.....	159
<i>Ronan Ramadhan, Anne Zulfia</i>	
PRELIMINARY STUDY OF ZIRCONIUM CARBIDE CERAMIC DEPOSITION ON AUSTENITIC STAINLESS STEEL BY PULSED LASER DEPOSITION	167
<i>N. Shabrina, Sumaryo, B. Sugeng, D.N. Haerani, Mardiyanto, A.K. Rivai</i>	

INVESTIGATION ON PERFORMANCE OF CU/NI FILM AS LOW TEMPERATURE SENSOR..... 172
Moh. Toifur, Nurmalia Agustin, Azmi Khusnani, Okimustava

HYDROCHLORIC ACID LEACHING APPROACHES FOR TANTALUM AND NIOBIUM
PENTOXIDES ENRICHMENT IN 1ST TIN SLAG FROM BANGKA ISLAND..... 185
Sulaksana Permana, Rafdi Abdul Majid, Johny Wahyuadi Soedarsono

IODOGEN METHOD ON IODINE-131 (¹³¹I) RADIOLABELLING OF SILVER
NANOPARTICLE (AGNPS) AS A NEW AGENT OF MOLECULAR IMAGING 196
*A Aries, E Sarmini, A Nurmanjaya, M Subechi, UN Sholikhah, E Lestari, H Setiawan, S
Febriana, S Sriyono, A Abidin*

INFORMATIC COMPUTATIONAL TECHNOLOGY AND COMPUTATIONAL MATERIALS

ESTIMATION OF MUON STOPPING SITE IN COCR₂O₄ USING DENSITY FUNCTIONAL
THEORY..... 204
Fiqhri Heda Murdaka, Kohji Nakamura, Agustinus Agung Nugroho

STUDY ON MANUFACTURING COMPANY SECTOR INDUSTRIAL CONSUMPTION
GOODS IN INDONESIA 209
Meiryani, Fransiska Aninda Yuanita, Mohamad Heykal

ENERGY AND ENVIRONMENT MATERIALS

THE EFFECTS OF RICE HUSK ASHES FILLED RECYCLED POLYETHYLENE
COMPOSITES TOWARDS PHYSICAL, MECHANICAL PROPERTIES AND ITS
DEGRADATION CHARACTERISTICS..... 221
Chasri Nurhayati, Tri Susanto

MAGNETIZATION OF BIODIESEL (COOKING OIL WASTE) TO TEMPERATURE AND
PRESSURE COMBUSTION IN DIESEL ENGINE 227
T H Nufus, S Lestari, A Ulfiana, M Manawan

VEHICLE IDENTIFICATION SYSTEMS USING VIRTUAL LINE SENSORS AND SPEED UP
ROBUST FEATURES 236
Samuel Mahatmaputra Tedjojuwono, Nathalia Devina Widjaja, Antonius Kurniawan

SYNTHESIS AND CHARACTERIZATION OF ANODE FOR LITHIUM ION BATTERY 247
Deswita, Wahyudianingsih, Evi Yulianti

PROCESS MINING WITH APPLICATIONS TO AUTOMOTIVE INDUSTRY..... 255
Michael Siek, Ryan Malik Gunadharma Mukti

ELECTRICAL PROPERTIES STUDY OF SOLID POLYMER ELECTROLYTE BASED ON
POLYCAPROLACTONE/LICF₃SO₃ ADDED PLASTICIZER 263
Evi Yulianti, Sudaryanto, Deswita, Wahyudianingsih

ELECTROCHEMICAL IMPEDANCE SPECTROSCOPY STUDY OF LIFEPO₄/LI DURING
DISCHARGING PROCESS 273
*Sudaryanto, Yustinus Purwamargapratala, Evi Yulianti, Wagiyu Honggowiranto, Evvy
Kartini*

STUDY PERFORMANCE OF LIFEPO₄/GRAPHITE CYLINDRICAL POUCH CELL..... 280
Wagiyu Honggowiranto, Evvy Kartini, Agus Sudjatno

SYNTHESIZE & CHARACTERIZATION OF $\text{Li}_3\text{PO}_4(0.5)\text{LiI}(0.25)\text{LiCl}(0.25)$ SOLID ELECTROLYTE FOR LITHIUM ION BATTERY	286
<i>Gde Paksi Raganata, Evvy Kartini, Heri Jodi, Wahyudianingsih, Agus Sudjatno, Philips Nicolas Gunawidjaja</i>	
THE FUTURE OF ALL SOLID STATE BATTERY	292
<i>Evvy Kartini, Carla Theresa Genardy</i>	

Author Index