

2nd International Conference on Advanced Engineering and Technology (ICATECH 2020)

Held online due to COVID-19

IOP Conference Series: Materials Science and Engineering
Volume 1010

Surabaya, Indonesia
26 September 2020

Editors:

**Ming Jyh Chern
Kim Dong-Seong
Nima Vaziri
Michele Bici**

**Mat Syai'in
Dedy Zulnoor Hidayat
Agus Budianto
Syamsuri**

ISBN: 978-1-7138-3319-2
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

EFFECT OF WELDING ELECTRODE VARIATION ON DISSIMILAR METAL WELD OF 316L STAINLESS STEEL AND STEEL ST41.....	1
<i>I A Pahlawan, A A Arifin, E Marlina, H Irawan</i>	
NUMERICAL STUDY OF AERODYNAMICS ACROSS THREE MODELS CAR GENERATION	9
<i>N Vaziri, Syamsuri, Z Lillahulhaq, A A Arifin, F Z Achmad</i>	
CHARACTERISTICS OF WALL HEAT TRANSFER FROM IMPINGING DIESEL SPRAY FLAME IN LOW OXYGEN CONCENTRATION AMBIENT.....	15
<i>R Mahmud, K Nishida, Y Ogata, T Kurisu</i>	
POSSIBILITY OF GEOTHERMAL OFFSHORE IN SANGIHE ARCHIPELAGO, NORTHERN PART OF SULAWESI, INDONESIA.....	27
<i>F R Widiatmoko, D D Dewangga, A Gustriandy, S Salsabila, N Anggraeni, M Infithor, D Hanifah, R A Pratama, T H Kusaeri, A Zamroni</i>	
SIMPLIFIED GASIFICATION SIMULATION USING ZERO-DIMENSIONAL MODEL OF EMPTY PALM FRUIT BUNCH.....	35
<i>P N A Nugroho, S Torii</i>	
DEFINITION, CRITERIA AND APPROACHES IN DESIGNING SUSPENSION SYSTEM WITH ACTIVE CONTROLS.....	41
<i>D A Patriawan, H Irawan, A Noerpamoengkas, B Setyono, A Y Ismail</i>	
LATERAL BEARING CAPACITY ANALYSIS OF PILE FOUNDATION USING A SPRING MODELLING SYSTEM.....	50
<i>J Propika, L L Lestari, A D Puspasari</i>	
ERP COMPATIBILITY ON BUSINESS PERFORMANCE THROUGH THE INVENTORY SYSTEM AND INTERNAL INTEGRATION.....	59
<i>P Sebayang, Z J H Tarigan, T W S Panjaitan</i>	
INFORMATION SYSTEM PLANNING PROCESS DESIGN BASED ON CLAUSE 8 ISO 20000-1:2018 USING SYSML LANGUAGE.....	68
<i>R Aurachman, Y Sudianto, N S Utomo</i>	
VEHICLE ROUTING PROBLEM WITH SIMULATED ANNEALING USING PYTHON PROGRAMMING.....	74
<i>R. Aurachman, D B Baskara, J Habibie</i>	
DESIGN AND INTEGRATION OF PORTABLE HEALTH SENSORS	79
<i>M U H A Rasyid, He Y Martono, B N D Ariyadi, I N Nasution</i>	
CARTE SERVER IMPLEMENTATION FOR IMPROVING DATA QUALITY MANAGEMENT APPLICATION PERFORMANCE IN PROFILING MODULE.....	89
<i>K F Salmawati, T F Kusumasari, E N Alam</i>	
BINARY PARTICLES SWARM OPTIMIZATION FOR POWER PLANT SCHEDULE BY CONSIDERING "TAKE OR PAY" CONTRACT	98
<i>T Wati, I Masfufiah, T Suheta, S Muharom, N E Setyawati, S Triwijaya</i>	

PERFORMANCE ANALYSIS OF TWO LAYER LEACH ALGORITHM BASED ON AREA PARTITION (TL-LEACH-P) FOR WSN.....	105
<i>M U H A Rasyid, D I Permatasari, D J Karim</i>	
AN EXPERIMENT ON DIFFERENT TYPE OF MUFFLER ON SPARK IGNITION ENGINE 110 CC PERFORMANCE	113
<i>G Setyono, M Ulum, Z Lillahulhaq</i>	
PHYSICS AND CHEMICAL ACTIVATION TO PRODUCE ACTIVATED CARBON FROM EMPTY PALM OIL BUNCHES WASTE.....	120
<i>A Budianto, E Kusdarini, N H Amrullah, E Ningsih, K Udyani, A Aidawiyah</i>	
MONITORING OF ROAD DAMAGE DETECTION SYSTEMS USING IMAGE PROCESSING METHODS AND GOOGLE MAP	128
<i>R Sulistyowati, A Suryowinoto, H A Sujono, I Iswahyudi</i>	
EFFECT OF WELDING METHODS FOR DIFFERENT CARBON CONTENT OF SS304 AND SS304L MATERIALS ON THE MECHANICAL PROPERTIES AND MICROSTRUCTURE	137
<i>VA Setyowati, Suheni, F Abdul, S Ariyadi</i>	
MARITIME INDUSTRY - PORTS AND SUPPORTING ACTIVITIES: LITERATURE REVIEW	144
<i>Juvinal Lucas Monteiro, Lukmandono, Pramudya Imawan Santoso, Rony Prabowo</i>	
STUDY OF CATAMARAN FISHING VESSEL BASED ON WIND ENERGY	153
<i>P Santoso, I Utama</i>	
GRADIENT BASED ANT SPREAD MODIFICATION ON ANT COLONY OPTIMIZATION METHOD FOR RETINAL BLOOD VESSEL EDGE DETECTION	163
<i>F Liantoni, N F Rozi, T Indriyani, W M Rahmawati, R K Hapsari</i>	
APPLICATION OF LEAN MANUFACTURING TO IMPROVE PROCUREMENT LEAD TIME IN THE CASE OF THE STEEL INDUSTRY	171
<i>M Z P Nugroho, S Hasibuan, H Adiyatna</i>	
THE EXPERIMENT OF AMBIENT WIND SPEED AND ARGON FLOW RATE ON TIG WELDING PROCESS	181
<i>Suheni, A A Rosidah, Z Lillahulhaq, I A Ridhlo, I P Wardani</i>	
APPLICATION OF VIKOR (VISE KRITERIJUMSKA OPTIMIZACIJA I KOMPROMISNO RESENJE) METHOD FOR IDENTIFYING AMPLIFIER DAMAGE.....	190
<i>S. Nurmuslimah, N Saidatin</i>	
THE IMPROVEMENT OF SEA HIGHWAY ROUTE BY USING PARALLEL INSERTION AND EXHAUSTIVE SEARCH	200
<i>I Subiantoro, Lukmandono, P I Santoso, H C Suroso</i>	
THE DESIGN CONCEPT OF BAMBOO IN MICRO HOUSING AS A SUSTAINABLE SELF-BUILDING MATERIAL	209
<i>Nareswaranandya, S H Laksono, A N Ramadhani, A Budianto, I Komara, A I D Syafiarti</i>	
THE DESIGN OF THE SHIP'S FUEL ESTIMATION SIMULATOR USES A CASE STUDY OF THE BUNG TOMO TRAINER SHIP	218
<i>D Wiratno, A Mirianto, T Cahyadi, Z Zuhri, N V Harini</i>	
IDENTIFICATION OF AUTOMATIC GUIDED VEHICLE (AGV) BASED ON MAGNETIC GUIDED SENSOR FOR INDUSTRIAL MATERIAL TRANSFER	225
<i>Y A Prabowo, R I Imaduddin, W S Pambudi, R A Firmansyah, A Fahrudi</i>	

THE LIST ORDER OF CONSTRUCTION RISK CONTRACT FOR SMALL-SCALE CONSTRUCTION SERVICE IN SURABAYA, INDONESIA USING ANALYTICAL HIERARCHY PROCESS (AHP).....	232
<i>Mohamad F. N. Aulady, Felicia T. Nuciferani, D Listyaningsih, Y P Putra, Feri Harianto</i>	
CLASSIFICATION OF COMMUNITY OPINION ON THE USE OF THE TRANSJAKARTA BUS BASED ON TWITTER SOCIAL NETWORK USING NAÏVE BAYES METHOD	239
<i>B. D Meilani, R K Hapsari, I F Novian</i>	
MICROWAVE ASSISTED HYDRO-DISTILLATION (MHD) OF CITRONELLA OIL FROM LEMONGRASS PLANTS (CYMBOPOGON NARDUS): EFFECT OF DISTILLER SIZE ON OIL YIELD	245
<i>Z Ma'sum, A Altway, M Mahfud</i>	
EXTRACTION OF ANTHOCYANIN PIGMENT FROM HIBISCUS SABDARIFFA L. BY ULTRASONIC-ASSISTED EXTRACTION.....	252
<i>Y Yuniati, P E Elim, R Alfanaar, H S Kusuma, Mahfud</i>	
WIND SPEED PREDICTION USING EXTREME LEARNING MACHINE AND NEURAL NETWORK FOR RESOLVING UNCERTAINTY IN MICROGRIDS	258
<i>A Seprijanto, M Syai'in, D F U Putra, N H Rohiem, N P U Putra, M Munir</i>	
THE EFFECT OF POLYETHYLENE GLYCOL ADDITION ON THE SYNTHESIS OF SOLID ACID CATALYST AND ITS APPLICATIONS IN ESTERIFICATION REACTION	266
<i>S Julaika, W Widiyastuti, H Setyawan</i>	
EFFECT OF FLY ASH TO WATER-CEMENT RATIO ON THE CHARACTERIZATION OF THE CONCRETE STRENGTH	273
<i>E Susanti, H Istiono, I Komara, D Pertiwi, Y Septiarsilia, F K Syahputra</i>	
COLD MILLING MACHINE PRODUCTIVITY ANALYSIS FOR DETERMINING OPERATOR EFFICIENCY VALUES IN ROAD MAINTENANCE PROJECTS.....	281
<i>S Choiriyah, T M C Agusdini, G A Prasetyo</i>	
TECHNOLOGY ACCEPTANCE MODEL FOR ONLINE CINEMA TICKETING AMONG MOVIEGOERS IN JAVA ISLAND INDONESIA: AN EMPIRICAL STUDY ON TIX ID APPLICATION.....	286
<i>Y Palumian, S C K Jayanti, R Indriyani, Z Tarigan</i>	
RISK MANAGEMENT IN SHIPBUILDING USING BAYESIAN NETWORK WITH NOISY-OR	294
<i>R Asdi, M Basuki</i>	
DESIGN CONCEPT OF REINFORCED CONCRETE BEAMS WITH LARGE WEB OPENINGS.....	303
<i>D Pertiwi, I Komara, R Fristian</i>	
HIGH POROUS CARBON NANOFIBER DERIVED FROM LIGNOSULFONATE MATERIAL	310
<i>M F Rois, W Widiyastuti, H Setyawan</i>	
DETERMINING THE WEIGHT OF THE HAMMER BASED ON EXPERT EXPERIENCE FOR ESTIMATING LOAD-CARRYING CAPACITY.....	317
<i>M K Wardani, M F N Aulady, W Frido, S Hendri</i>	
EFFECT OF HOLE DIAMETER AND BASIN SIZE ON THE VORTEX GRAVITY SYSTEM	324
<i>F A Herbhakti, R Hantoro</i>	

THE DEVELOPMENT OF SOFTWARE FOR CALCULATING GREEN OPEN SPACE ADEQUACY TO ABSORB CO2 IN BANGKALAN CITY	334
<i>Rosa Canina Pissera, Yulfiah</i>	
THE APPLICATION OF THE SIX SIGMA METHOD IN REDUCING THE DEFECTS OF WELDING ON THE STEEL MATERIAL	341
<i>Agin Viakri Dagmar, Zeplin Jiwa Husada Tarigan</i>	
HOUSEHOLD ELECTRICITY NETWORK MONITORING BASED ON IOT WITH OF AUTOMATIC POWER FACTORS IMPROVEMENT USING NEURAL NETWORK METHOD	349
<i>D. C. Nugroho, Y. Mayaratri, M. Syai'in, M. K. Hasin, N. H. Rohiem, N. P. U. Putra, A Soeprijanto</i>	

Author Index