

# **2nd International Conference on Smart City Innovation 2019**

IOP Conference Series: Earth and Environmental Science  
Volume 396

Semarang, Indonesia  
9 October 2019

**Editor:**

**Maya Damayanti**

ISBN: 978-1-7138-0263-1  
ISSN: 1755-1307

**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](mailto: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](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

# TABLE OF CONTENTS

## **ENERGY AND ENVIRONMENT**

SUSTAINABILITY OF USING LOW-RANK COAL AS ENERGY SOURCE THROUGH THE UPGRADING BROWN COAL (UBC) PROCESS BY ADDING WASTE COOKING OIL .....	1
<i>B D Afrah, M I Riady, N Thereza, H Widhaningtyas, M Siregar</i>	
PLASMA GASIFICATION WITH MUNICIPAL SOLID WASTE AS A METHOD OF ENERGY SELF SUSTAINED FOR BETTER URBAN BUILT ENVIRONMENT: MODELING AND SIMULATION .....	8
<i>P A Sesotyo, M Nur, J E Suseno</i>	
PURIFICATION OF USED COOKING OIL USING ACTIVATED CARBON ADSORBENT FROM DURIAN PEEL.....	17
<i>S Miskah, T Aprianti, M Agustien, Y Utama, M Said</i>	
LOCAL WISDOM IN MALAY KAMPUNG SEMARANG AS REPRESENTATIVES OF SMART ENVIRONMENT .....	23
<i>W Kurniawati, Mussadun, D Suwandono, T Z Islamey</i>	
ONLINE TAXI BIKE TO CREATE INFORMAL PUBLIC SPACES IN URBAN AREAS .....	32
<i>W Kurniawati, T Z Islamey</i>	
ORGANISM ASSOCIATED WITH CYMODOCEA SERULATA IN DIFFERENT HABITATS NEAR URBAN COASTAL AREA .....	41
<i>N L Watiniasih, I W Nuarsa, I M Merdana, I N Budiarsa, A Dharma, I N G Antara, M W Paborini</i>	
THE POTENTIAL OF URBAN ORGANIC WASTE UTILIZATION AS NEO CARBON FOOD .....	47
<i>S L Putri, C V Marbun, G L Utama</i>	
PRELIMINARY STUDY ON HYDROGEN STORAGE FOR FUEL OF FUEL CELL USING FE <sub>3</sub> AL METAL HYDRIDE SYSTEM.....	55
<i>D Rohendi, A Rachmat, N Syarif, M Said, I Amelia</i>	
THE PRODUCTION OF HYDROGEN FROM ALUMINUM WASTE BY ALUMINUM-WATER METHODS AT VARIOUS CONDITIONS .....	63
<i>D Rohendi, A Rachmat, N Syarif, M Said, I Rihsansah</i>	
THE ROLE OF FOOD DELIVERY SERVICES BY ONLINE MOTORCYCLE TAXI ON THE DEVELOPMENT OF CULINARY HOME-BASED ENTERPRISES .....	73
<i>W P Tyas, M Damayanti, J K Hutama, D D Saragih</i>	
AN ANALYSIS OF POTENTIAL UTILIZATION OF LOW COST CU <sub>2</sub> ZNSNS <sub>4</sub> THIN FILM BASED PHOTOVOLTAIC IN SUMBAWA .....	83
<i>A Rukini, L Suhaimi, A S Pradhitya, M Anggara</i>	
SUSTAINABLE COMMUNITIES AS A RESPONSE TO CLIMATE CHANGE: ANALYSIS OF GEROLDSÄCKER ECO-HOUSING PROJECT AND RECOMMENDATIONS FOR ITS REPLICATION CONSIDERING CURRENT URBAN CHALLENGES.....	93
<i>B Kasih, K Nohara, L Zerbst, R Javier</i>	

## **ENVIRONMENT**

LAND USE CHANGE ALONG LEBIH COASTAL LINE, ENTAILING ITS DESIGNATION AS A ZONE FOR TOURIST DEVELOPMENT.....	104
<i>G A M Suartika, I A S O Ledysianty, K E Saputra</i>	
COWORKING SPACE AND CLUSTER SPATIAL RELATIONS IN THE CONTEXT OF JAKARTA CITY SPATIAL STRUCTURE.....	120
<i>W Huliana, E Ellisa</i>	
URBAN PLANNING SIMULATION GAME AND THE DEVELOPMENT OF SPATIAL COMPETENCE .....	133
<i>N I Pramaputri, A Gamal</i>	

## **INFRASTRUCTURE**

HYDROPONIC PLANTS MONITORING SYSTEM BASED ON SINGLE BOARD COMPUTING IN ORDER TO INCREASE FOOD SECURITY IN BALI .....	143
<i>I K A Mogi, A Dharma</i>	
EFFECT OF WEATHER FOR DEMAND OF ONLINE TRANSPORTATION IN TEMBALANG, SEMARANG.....	151
<i>A R Rakhmatulloh, D I K Dewi, Wijayanti, J Winarendri</i>	
BASIC FRAMEWORK OF REGIONAL MODEL FOR DISASTER WASTE ESTIMATION AND DISTRIBUTION BY USING SPATIAL APPROACH IN CENTRAL JAVA-INDONESIA.....	159
<i>M Maryono, K Seruningtyas, A D Roynaldi, Sudarno, Hadiyanto</i>	
LITERATURE REVIEW: TECHNOLOGIES AND PROPERTY DEVELOPMENT .....	168
<i>C F Maududy, A Gamal</i>	
USER ASSESSMENT OF QUALITY SERVICE OF TRANS JATENG BUS STOPS, IN SUB-URBAN CORRIDOR (UNGERAN-BAWEN).....	182
<i>L D Agitha, F H Mardiansjah</i>	
MODELLING THE NEEDS OF LIGHT RAIL TRANSIT (LRT) ON TRANSIT ORIENTED DEVELOPMENT AREA AROUND LRT STATIONS IN PALEMBANG .....	194
<i>M Agustien, B Susanti, H Pahlevi</i>	
SMART COMMUNITY IN PUBLIC TOILET MANAGEMENT IN DEMAAN SLUM SETTLEMENT, JEPARA REGENCY .....	206
<i>S Sunarti, M Helmi, R Widjajanti, A A Purwanto</i>	
SMART KAMPUNG: CHARACTERISATION OF SURABAYA URBAN COASTAL SETTLEMENTS THROUGH SMART CITY MEASUREMENT.....	222
<i>K P Nariratih, D Rahmawati</i>	
TOWARDS COLLABORATIVE BATIK WASTE MANAGEMENT MODEL IN KAMPONG BATIK SEMARANG .....	233
<i>G L Wungo, S P Dewi, H Susanto, R Desiriani, E F Karamah</i>	
USABILITY OF QR CODE IN THE DESIGN OF INFORMATION SYSTEM FOR RECOGNIZING HISTORIC BUILDINGS, KOTA LAMA, SEMARANG .....	244
<i>D M K Nugraheni, D I K Dewi, A K Nugroho</i>	

TRAFFIC MANAGEMENT FOR JALAN KAYU AYU IN SEMINYAK AREA, BADUNG REGENCY .....	252
<i>I N K Mataram, A A N A J Wikrama, I G A M Suartika</i>	
ANGLE CHARACTERIZATION RADIATION DETECTION OF MICROSTRIP ANTENNA FOR SHORT RANGE TERAHERTZ COMMUNICATION SYSTEM .....	262
<i>C Apriono, G Adriandi</i>	
PROVISION OF A SUSTAINABLE PUBLIC SPACE: LEBIH COASTAL AREA IN THE AFTERMATH OF RAMPANT ABRASIONS.....	268
<i>G A M Suartika, N P D A Permanasuri, K E Saputra</i>	
TRY AND FIND IT - UNDERSTANDING PUBLIC SPACE AND CIVIL SOCIETY IN BALI .....	280
<i>N M Swanendri, G A M Suartika</i>	
THE IMPLICATION OF SMART ENVIRONMENT ON OLD PALEMBANG CULTURAL HERITAGE PLACES .....	291
<i>W F F Anwar</i>	
DESKTOP-BASED POPULATION DATA INFORMATION SYSTEM TO SUPPORT THE SUMBAWA ELECTRONIC GOVERNMENT IN RHEE DISTRICT .....	302
<i>Muhammad Hidayatullah, Fery Hendrawan, Titi Andriani, Shinta Esabella, Nurhairunnisah</i>	
THE ANALYSIS OF BARRIERS FOR IMPLEMENTATION OF SUSTAINABLE CONSTRUCTION IN INDONESIA .....	312
<i>B Susanti, S F H Filestre, I Juliantina</i>	
COMPARISON ANALYSIS OPERASTIONAL COST OF VEHICLE (VOC) BETWEEN KAYU AGUNG-PALEMBANG-BETUNG TOLL ROAD PLAN WITH EXISTING ROAD .....	322
<i>E Kadarsa, Hanafiah, B B Adhitya, M Pataras, A Azari</i>	
EROSION POTENTIAL BASED ON ERODIBILITY AND PLASTICITY INDEX DATA ON CILENGKRANG, BANDUNG, WEST JAVA, INDONESIA.....	331
<i>N Khoirullah, Ij Mufti, I Sophian, T Yan W. M. Iskandarsyah, D Muslim</i>	
EVALUATION AND STUDY OF MINIMARKET POTENTIAL LOCATIONS IN BWK I, SEMARANG CITY .....	337
<i>D Pramukti, W P Tyas</i>	
COMMUNITY PERCEPTION OF CHEESE-MAKING WASTES UTILIZATION AND ITS SUSTAINABILITY .....	344
<i>G L Utama, I Dinika, R L Balia</i>	
LIQUEFACTION POTENTIAL BASED ON GEOLOGY AND GEOTECHNICAL DATA ON SANANA REGION, SULA ISLAND REGENCY, NORTH MALUKU, INDONESIA .....	351
<i>U S Pajrin, A Mubarak, J P Basuki, Z Zakaria, R I Sophian, N Khoirullah</i>	
THE IMPACT OF GO-FOOD ON TRAVEL BEHAVIOUR FOR THE FULFILLMENT OF CONSUMPTION NEEDS IN HIGHER EDUCATION AREAS .....	359
<i>O R Manullang, N S Limbong</i>	
THE HEXA-HELIX CONCEPT FOR SUPPORTING SUSTAINABLE REGIONAL DEVELOPMENT (CASE STUDY: CITATAH AREA, PADALARANG SUBDISTRICT, WEST JAVA, INDONESIA).....	378
<i>Z Zakaria, R I Sophian, B Muljana, N Gusriani, S Zakaria</i>	

AN OPEN MARKET: THE LEGITIMATION AND REGULATION OF THE PUBLIC REALM  
IN DENPASAR..... 390  
*G A M Suartika, I K Mudra, K E Saputra*

THE SPECTRUM OF CITY PARK SERVICE SCOPE: CASE STUDY OF LAPANGAN  
PUPUTAN BADUNG AND LAPANGAN PUPUTAN MARGARANA DENPASAR-BALI ..... 398  
*N Kohdrata, G A M Suartika, A A K Krisnandika, L S Yusiana, I M A Dharmadiatmika*

**Author Index**