



2019

Book of Abstracts

10th International Conference on Green Technology 2019

Empowering the 4.0 Industrial Revolution Through
Green Science and Technology



Malang, October 2nd - 3rd, 2019

Organized by :



IOP Conference Series
Materials Science and Engineering

ALCHEMY
Journal of Chemistry



CAUCHY
Jurnal Matematika Murni dan Aplikasi

NEUTRINO
Jurnal Fisika dan Aplikasinya

MATICS
Jurnal Ilmu Komputer dan Teknologi Informasi
(Journal of Computer Science and Information Technology)

Sponsored by :



PT. Dharma Karya Makmur Sentosa
Ruko Surya Inti Permata Jl. Jemur Andayani 50 Blok D 8-9 Surabaya- Indonesia
Phone. 62 (31) 8418284, 8476071 Fax. 62 (31) 8418476

thermo scientific



PREFACE

THE DEAN OF FACULTY OF SCIENCE AND TECHNOLOGY

UNIVERSITAS ISLAM NEGERI MAULANA MALIK IBRAHIM MALANG

It is our pleasure to very warm welcome all participant to the 2019 10th International Conference on Green Technology (ICGT 2019) in Faculty of Science and Technology, Universitas Islam Negeri Maulana Malik Ibrahim Malang. The ICGT have started ten years ago and this year, the theme of the conference is “*Empowering the Fourth Industrial Revolution through Green Science and Technology*”. Now, we are entering the fourth industrial revolution which will influence all aspect in the civilization of humankind. Thus, we hope through this conference we can contribute by the result of green science and technology in Empowering the Fourth Industrial Revolution through Green Science and Technology. And also, we hope this conference can bring academic scientists, engineers, industry researchers together to discuss, exchange and share their experiences and research results about green technology.

We would like to thank:

1. Rector and Vice-Rector of Universitas Islam Negeri Maulana Malik Ibrahim for their assistance and support for 10th International Conference on Green Technology.
2. Academic board committee for work in abstract and paper review.
3. The event organizing committee for managing this conference.
4. All the keynote speaker who willingly attended this conference.
5. Special Thanks to IOP Conference Proceeding Series, Journal of Islamic Architecture, ALCHEMY Journal of Chemistry, NUTRINO Journal, CAUCHY, and MATICS.

We wish all participants of 10th ICGT an enjoyable scientific meeting in Malang, Indonesia. We look forward to seeing all of you next year at 11th ICGT

Dean of Faculty of Science and Technology
UIN Maulana Malik Ibrahim Malang

Dr. Sri Harini

ORGANIZED BY



FACULTY OF SCIENCE AND TECHNOLOGY

UNIVERSITAS ISLAM NEGERI MAULANA MALIK IBRAHIM MALANG



SPONSORED BY



TABLE OF CONTENT

PREFACE THE DEAN OF FACULTY OF SCIENCE AND TECHNOLOGY UNIVERSITAS ISLAM NEGERI	
MAULANA MALIK IBRAHIM MALANG	i
PREFACE THE CHAIRPERSON 10 TH INTERNATIONAL CONFERENCE ON GREEN TECHNOLOGY	ii
ORGANIZED BY	iii
SPONSORED BY	iii
CONFERENCE COMMITTEE	iv
KEYNOTE SPEAKER	v
TABLE OF CONTENT	vi

ABSTRACT OF KEYNOTE SPEAKER

IDENTIFICATION OF NEUROPEPTIDES IN GASTROPOD MOLLUSKS. - CLASSICAL AND BRAND-NEW APPROACHES-	1
---	----------

Fumihiro Morishita^{1*}, Toshio Takahashi², Takehiro Watanabe², Takuya Uto³, Kazuyoshi Ukena⁴, Megumi Furumitsu⁴, Toshihiro Horiguchi⁵

CONSTRUCTION OF BIO-TEMPLATE C- DOPED g-C₃N₄-BASED HYBRID NANOCOMPOSITES WITH ENHANCED VISIBLE-LIGHT PHOTOCATALYTIC ACTIVITY	2
---	----------

Mohamad Saufi Rosmi^{1*}, Mohamad Azuwa Mohamed², Siti Munirah Sidik¹, Illyas Md Isa¹, Suriani Abu Bakar¹ and Mohammad Kassim²

THE POTENCY OF 10-GINGEROL AS A PRIMARY CANDIDATE TO BECOME AN ANTI-CANCER AGENT: STUDY OF CUMULUS CELL	3
--	----------

Dr. Kiptiyah, M.Si^{1*}

BENEFICIAL ROLE OF TRICHODERMA IN AGRICULTURE: A STUDY IN LEGUMINOUS PLANTS	4
--	----------

Eriyanto Yusnawan^{1*}, Alfi Inayati¹, Yuliantoro Baliadi¹

A GENETICALLY DEFINED VIRUS INOCULUM FOR PRODUCTION OF SPODOPTERA EXIGUA MULTIPLE NUCLEOPOLYHEDROVIRUS IN INSECT CELL CULTURE WITH ENHANCED INSECTICIDAL ACTIVITY	5
--	----------

Kanokwan Poomputsa¹

ENDOGLUCANASE ACTIVITY OF CELLULOLYTIC BACTERIA INDIGENOUS RICE BRAN BY IN VITRO AND IN SILICO	6
---	----------

Akyunul Jannah^{1*}, Aulanni'am², Tri Ardyati³, Suharjono³

APPLICATION OF ELECTRON ACCELERATOR FOR FLUE GAS TREATMENT OF COAL POWER PLANT TO SUPPORT GREEN TECHNOLOGY	7
---	----------

Darsono^{1*}

THE IMPLEMENTATION OF BEHAVIORAL ARCHITECTURE IN THE DESIGNING OF SPECAIL-NEEDS SCHOOLS.....	8
---	----------

Wasilah^{1*}

ABSTRAC SCOPE A ENVIROMENTAL IMPACT EVALUATION

CONVERSION DAU CITRUS FARM TO ORGANIC: AN IMPROVEMENT DISCOURSE. A REVIEW	9
--	----------

L Mufidah^{1*}, S Widyaningsih¹, E Budiati¹

UNDERSTANDING THE REQUIREMENTS FOR WUDHU (ABLUTION) WATER VOLUME BASED ON CHANGES IN CHEMICAL OXYGEN DEMAND FOR SEVERAL DAYS	10
<i>D Suhendar^{1*}, G Giftia¹, Yunita², W Purnamasari³, H Sandi¹, S Ruhama¹, V Amalia¹, E P Hadisantoso¹</i>	
UTILIZATION OF BAGLOG WASTE AS BOKASHI FERTILIZER WITH LOCAL MICROORGANISMS (MOL).....	11
<i>D S Sunarya^{1*}, Nisyawati², W Wardhana³</i>	
MODELING AND OPTIMIZATION OF PALM OIL MOISTURE LOSS AS BIODIESEL PRETREATMENT.....	12
<i>Y Hendrawan^{1*}, N S Maharani¹, B D Argo¹, Y Wibisono¹</i>	
THE TECHNICAL AND FINANCIAL FEASIBILITY ANALYSIS ON THE ESTABLISHMENT OF A WASTE-PROCESSING UNIT FOR COCONUT SHELL (LIQUID SMOKE AND ACTIVATED CARBON)	13
<i>A F Mulyadi^{1,2*}, S Wijana^{1,2}, I A Dewi^{1,2}, R Andayani^{1,2}</i>	
THE IMPACT OF AGRICULTURAL ACTIVITIES IN DRAWDOWN AREA ON SUSTAINABILITY OF DELINGAN RESERVOIR FUNCTION.....	14
<i>A A Muntiani^{1*}, Suntoro², Sunarto³</i>	
DEVELOPMENT OF ECOSYSTEM HEALTH INDEX IN RURAL AREAS OF JAVA ISLAND: PRELIMINARY RESULTS ..	15
<i>A Yuwono¹, Y Wardiatno^{1*}, R Widyastuti¹, D Wulandari², M Natali¹</i>	
MOLECULAR IDENTIFICATION OF PHOSPHATE-SOLUBILIZING YEAST ISOLATE KR.1 BP.4 FROM CITATAH KARST AREA.....	16
<i>A R Hafsa^{1*}, F R Khoerunnissa¹</i>	
CALLUS METABOLITES INDUCTION NONI (<i>Morinda citrifolia</i> L.) USING COMBINATION 2,4 - DICHLOROPHENOXY ACETIC ACID AND 6-BENZYLAMINOPURINE IN VITRO	17
<i>M F Annas^{1*}, R S Resmisari¹, I D A Indah C¹</i>	
INFLUENCE OF CHITOSAN FOR ANATOMY STRUCTURE AND ANTRAQUINON CONTENT OF METABOLITES CALLUS NONI (<i>Morinda citrifolia</i> L.)	18
<i>M F Annas^{1*}, N Alfiani¹</i>	
POPULATION DENSITY, HUMAN DEVELOPMENT INDEX, PRIORITY WATERSHEDS AND VOLUNTARY DISCLOSURE OF POLLUTANT RELEASE DATA BY TEXTILE COMPANIES IN INDONESIA	19
<i>A A Birry^{1*}, S W Utomo¹, H Herdiansyah¹</i>	
THE POTENCY OF MACROZOOBENTHOS DIVERSITY AT LEDOK AMPRONG RIVER AS PRACTICUM SOURCE FOR BIOLOGY STUDENT.....	20
<i>S Habibi¹, A R Ubaid², Romaidi^{2*}</i>	
SEARCHING FOR ANTIMALARIAL AGENT FROM INDONESIAN <i>Euodia suaveolens</i>.....	21
<i>D K Pratoko¹, B Triatmoko¹, A N W Pratama¹, W N Rohmatillah¹, T A Laksono¹, A S Nugraha^{1*}</i>	
THE EFFECT OF CRYSTALLIZATION TIME ON STRUCTURE, MICROSTRUCTURE, AND CATALYTIC ACTIVITY OF ZEOLITE-A SYNTHESIZED FROM RICE HUSK SILICA AND FOOD-GRADE ALUMINUM FOIL	22
<i>W Simanjuntak^{1*}, K D Pandiangan¹, Z Sembiring¹, G G Pangesti¹, A Simanjuntak¹</i>	

ID ABSTRACT: ABS-115

The Effect of Crystallization Time on Structure, Microstructure, and Catalytic Activity of Zeolite-A Synthesized from Rice Husk Silica and Food-grade Aluminum Foil

**W Simanjuntak^{1*}, K D Pandiangan¹, Z Sembiring¹, G G Pangesti¹,
A Simanjuntak¹**

¹Faculty of Mathematics and Natural Science, Lampung University, Bandar Lampung, Indonesia

*e-mail: wasinton.simanjuntak@fmipa.unila.ac.id

This study was conducted to evaluate the effect of crystallization time on structure, microstructure, and catalytic activity of zeolite-A synthesized from rice husk silica (RHS) and food-grade aluminum foil. Four samples were prepared with fixed crystallization temperature of 100 °C and crystallization time of 48, 72, 96, and 120 h respectively, followed by calcination treatment at 550 °C for 6 h. The structure of the samples was evaluated using XRD and microstructure using SEM. For catalytic activity assessment, the zeolites were used in pyrolysis of mixed ground cassava tuber (GCT) and palm oil. The liquid fuels from the pyrolysis experiments were analyzed using GC-MS technique to identify the chemical composition of the liquids. Characterization using XRD technique revealed that zeolite-A has been produced at 48 hour crystallization period and no significant change of the structure resulted with extension of crystallization time. Quite a significant effect of crystallization time on surface morphology of the samples as seen by SEM, was observed, with the most evident are the shape and size of the particles. The liquid fuels produced were found to contain hydrocarbon as the main component, with relative percentage in the range of 85 to 92%, suggesting that synthesized zeolites are promising catalyst for biogasoline production.

Keywords: zeolite A, crystalization, calcination, pyrolysis



CERTIFICATE

NO: 2821/FST/PP.09/10/2019

This certificate is hereby awarded to:

Prof. Drs. Wasinton Simanjuntak, M.Sc, Ph.D

Our sincerest gratitude for your contribution as

Invited speaker

during the conduct of

INTERNATIONAL CONFERENCE ON GREEN TECHNOLOGY

"Empowering the 4.0 Industrial Revolution through Green Science and Technology"

Held on October 2th - 3rd, 2019 at Savana Hotel & Convention Malang, East Java, Indonesia

Chairperson

Dean,

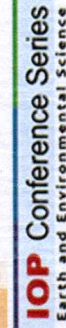
Faculty of Science and Technology



Rachmawati Ningsih, M.Si

Dr. Sri Harini, M.Si

International Conference on Green Technology



thermoscientific

PT. Bhuma Karya Makmur Sentosa
Jl. Raya Kertosono No. 100, Kertosono, Jember
Phone: 031 231 8888, 031 231 7777 Fax: 031 231 8888