

2nd International Conference on Science (ICOS 2017)

Journal of Physics: Conference Series Volume 979

Makassar, Indonesia
2 - 3 November 2017

Editor:

Dahlang Tahir

ISBN: 978-1-5108-5989-0
ISSN: 1742-6588

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.

Copyright© (2017) by the Institute of Physics
All rights reserved. The material featured in this book is subject to
IOP copyright protection, unless otherwise indicated.

Printed by Curran Associates, Inc. (2018)

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 979

**The 2nd International Conference on Science (ICOS)
2–3 November 2017, Makassar, Indonesia**

**Accepted papers received: 20 February 2018
Published online: 13 March 2018**

Preface

[The 2nd International Conference on Science \(ICOS\)](#)

[The Committees](#)

[Sponsor or funding acknowledgements](#)

[Conference Photographs](#)

[Peer review statement](#)

Papers

Bioscience and Bioinformatics

[Thermostable \$\alpha\$ -Amylase Activity from Thermophilic Bacteria Isolated from Bora Hot Spring, Central Sulawesi](#)

F M Gazali and I N Suwastika.....1

[The potential for Probiotic Bacteria from milkfish intestine in reducing mercury metals in skimmed milk media](#)

Zaraswati Dwyana, D Priosambodo, N Haedar, A E Erviani, A K Djabura and R Sukma.....7

[Marine tunicates from Sangkarang Archipelago Indonesia: recent finding and bio-prospecting](#)

Magdalena Litaay.....14

[Preliminary Study on Testicular Germ Cell Transplantation of Endemic Species *Oryzias celebensis*](#)

I Andriani, F Agustiani, M Hassan, A Parenrengi and K Inoue.....21

[Characterization of rice physicochemical properties local rice germplasm from Tana Toraja regency of South Sulawesi](#)

A Masniawati, Nur Al Marwah Asrul, E Johannes and M Asnady.....28

[Physical structure of artificial seagrass affects macrozoobenthic community recruitment](#)

R Ambo-Rappe and C Rani.....34

[Using site-selection model to identify suitable sites for seagrass transplantation in the west coast of South Sulawesi](#)

Mahatma Lanuru, S Mashoreng and K Amri.....41

[Gene distribution of ABO blood type system on the Dengue Hemorrhagic Fever \(DHF\) patients in the working area of Puskesmas Bonto Bangun, District of Rilau Ale, Bulukumba](#)

Sjafaraenan, D N Alvionita, R Agus and A Sabran.....49

Chemistry

[*Chlorella sp* : Extraction of fatty acid by using avocado oil as solvent and its application as an anti-aging cream](#)

T W Putri, I Raya, H Natsir and E Mayasari.....55

[Synthesis, structurale elucidation and antioxidant study of *Ortho*-substituted *N,N'*-bis\(benzamidothiocarbonyl\)hydrazine derivatives](#)

Syadza Firdausiah, S A Hasbullah and B M Yamin.....62

[Heavy metal concentrations in cocoa beans \(*Theobroma cacao* L.\) originating from East Luwu, South Sulawesi, Indonesia](#)

A Assa, A Noor, M R Yunus, Misnawi and M N Djide.....77

[Effect of Fe²⁺ and Mn²⁺ addition on growth and \$\beta\$ -carotene production of *Dunaliella salina*](#)

E Mayasari, I Raya and H Natsir.....84

[Contribution of Co²⁺ in increasing chlorophyll *a* concentration of *Nannochloropsis salina* in controlled Conwy medium](#)

Y Hala, P Taba, E Suryati, P Kasih and N F Firman.....93

[Utilization of Diamine Oxidase Enzyme from Mung Bean Sprouts \(*Vigna radiata* L\) for Histamine biosensors](#)

Abdul Karim, A W Wahab, I Raya, H Natsir and A R Arif.....99

[Effect of pH fermentation on production bioethanol from jackfruit seeds \(*Artocarpus heterophyllus*\) through separate fermentation hydrolysis method](#)

A R Arif, H Natsir, H Rohani and A Karim.....107

[Phenethyl ester and amide of Ferulic Acids: Synthesis and bioactivity against P388 Leukemia Murine Cells](#)

Firdaus, N H Soekamto, Seniwati, M F Islam and Sultan.....113

[Dengue antiviral activity of polar extract from *Melochia umbellata* \(Houtt\) Stapf var. *Visenia*](#)

Nunuk Hariani Soekamto, S Liong, S Fauziah, I Wahid, Firdaus, P Taba and F Ahmad.....118

[Utilization of \$\alpha\$ -amylase enzyme from *Bacillus stearothermophilus* RSAII_{1B} for maltodextrin production from sago starch](#)

R A Arfah, A Ahmad, S Dali, M N Djide, Mahdalia and A R Arif.....123

[Inhibitory activities of *Moringa oleifera* leaf extract against \$\alpha\$ -glucosidase enzyme in vitro](#)

H Natsir, A W Wahab, A Laga and A R Arif.....130

[Study of characteristic of tsunami base on the coastal morphology in north Donggala, Central Sulawesi](#)

W S N Rahmadaningsi, A H Assegaf, W Setyonegoro and Paharuddin.....136

[Dislocation, crystallite size distribution and lattice strain of magnesium oxide nanoparticles](#)

I W Sutapa, Abdul Wahid Wahab, P Taba and N L Nafie.....143

[Benzene derivatives from the marine sponges *Cinachyrella*](#)

Abraham, Y M Syah, H Natsir and Nunuk Hariani Soekamto.....152

[Pilarization TiO₂ onto De-oiled spent bleaching clay using *Rarasaponin* as surfactant](#)

N Hindryawati, Daniel, Erwin and N D Fadillah.....156

[Determination of specific capacitance of modified candlenut shell based carbon as electrode material for supercapacitor](#)

M Zakir, P Budi, I Raya, A Karim, R Wulandari and A B J Sobrido.....162

[Application of MSSIP-2 nutrient in marine phytoplankton culture to support the production of biomass for biofuel industry](#)

Paulina Taba, S Kasim and I Raya.....169

[Determination of the optimum concentration cellulose baggase in making film bioplastic](#)

S Chadijah, W O Rustiah and M I D Munir.....176

Computational Science

[Voice Based City Panic Button System](#)

Febriansyah, Zahir Zainuddin and M. Bachtiar Nappu.....181

[Impact of Penetration Wind Turbines on Transient Stability in Sulbagsel Electrical Interconnection System](#)

Andi Nurtrimarini Karim, Sri Mawar Said, Indar Chaerah Gunadin and Mustadir Darusman B.....187

[Classifying Physical Morphology of Cocoa Beans Digital Images using Multiclass Ensemble Least-Squares Support Vector Machine](#)

Armin Lawi and Yudhi Adhitya.....195

[Combination of Rivest-Shamir-Adleman Algorithm and End of File Method for Data Security](#)

Dian Rachmawati, Amalia Amalia and Elviwani.....204

[Implementation of Canny and Isotropic Operator with Power Law Transformation to Identify Cervical Cancer](#)

A Amalia, D Rachmawati, I A Lestari and C Mourisa.....209

[Facial Expression Recognition using Multiclass Ensemble Least-Square Support Vector Machine](#)

Armin Lawi and M Sya'Rani Machrizzandi.....216

[Super-Encryption Implementation Using Monoalphabetic Algorithm and XOR Algorithm for Data Security](#)

Dian Rachmawati, Mohammad Andri Budiman and Indra Aulia.....224

[The Observation of Bahasa Indonesia Official Computer Terms Implementation in Scientific Publication](#)

D Gunawan, A Amalia, M S Lydia and M I Muthaqin.....230

[Automated Robot Movement in the Mapped Area Using Fuzzy Logic for Wheel Chair Application](#)

B Siregar, S Efendi, H Ramadhana, U Andayani and F Fahmi.....237

[Content Abstract Classification Using Naive Bayes](#)

Syukriyanto Latif, Untung Suwardoyo and Edwin Aldrin Wihelmus Sanadi.....243

Enviromental Science

[Effect of Fruits Waste in Biopore Infiltration Hole Toward The Effectiveness of Water Infiltration Rate on Baraya Campus Land of Hasanuddin University](#)

Slamet Santosa.....251

[Analysis of Chemical and Physical Properties of Biochar from Rice Husk Biomass](#)

Bidayatul Armynah, Atika, Zuryati Djafar, Wahyu H Piarah and Dahlang Tahir.....256

[Solar Pond Potential as A New Renewable Energy in South Sulawesi](#)

Nur Fadliah Baso, Indar Chaerah Gunadin and Yusran.....264

[The Habitat of Yellow Mouth Turban *Turbo Chrysostomus*, Linnaeus, 1758](#)

E Soekendarsi.....272

[Status of Suspended Particulate Matters Pollution at Traditional Markets in Makassar City](#)

Sri Suryani and Fahrunnisa.....278

[Distribution of Escherichia Coli as Soil Pollutant around Antang Landfills](#)

Andi Artiningsih, Hazairin Zubair, A.M. Imran and Sri Widodo.....283

[The Effect of Deflector Angle in Savonius Water Turbine with Horizontal Axis on the Power Output of Water Flow in Pipe](#)

Ari Prasetyo, Budi Kristiawan, Dominicus Danardono and Syamsul Hadi.....288

[Effect of Blade Curvature Angle of Savonius Horizontal Axis Water Turbine to the Power Generation](#)

Taufan Apha Sanditya, Ari Prasetyo, Budi Kristiawan and Syamsul Hadi.....293

Geophysics

[Determination Hypocentre and Focal Mechanism Earthquake of Oct 31, 2016 in Bone, South Sulawesi](#)

Muhammad Altin Massinai and Muhammad Fawzy Ismullah M.....298

[Shallow Depth Study Using Gravity & Magnetics Data in Central Java - Yogyakarta](#)

Muhammad Fawzy Ismullah M, Muhammad Altin Massinai and Maria.....303

[Ore Reserve Estimation of Saprolite Nickel Using Inverse Distance Method in PIT Block 3A Banggai Area Central Sulawesi](#)

Muhammad Khaidir Noor.....312

[Coal Layer Identification using Electrical Resistivity Imaging Method in Sinjai Area South Sulawesi](#)

Andi Ilham Samanlangi.....318

[Upwelling Dynamic Based on Satellite and INDESO Data in the Flores Sea](#)

Reski Kurniawan, D. A. Suriamihardja and Alimuddin Hamzah Assegaf.....323

[Earthquake Macro-zonation Based Peak Ground Acceleration, Modified Mercalli Intensity, And Type of Rocks around Matano Fault](#)

Muh Karnaen, D A Suriamihardja, A Maulana and A Jaya.....335

[Response of Gravity, Magnetic, and Geoelectrical Resistivity Methods on Ngeni Southern Blitar Mineralization Zone](#)

Sunaryo.....341

[Preliminary Result of Earthquake Source Parameters the Mw 3.4 at 23:22:47 IWST, August 21, 2004, Centre Java, Indonesia Based on MERAMEX Project](#)

Y A Laksono, K S Brotopuspito, W Suryanto, Widodo, R A Wardah and I Rudianto.....350

[Microtremor Study of Site Effect for Disaster Mitigation and Geotechnical Purpose](#)

Sabrianto Aswad, Muh. Altin Massinai and Syamsuddin.....356

[Earthquake Hazard Analysis Use Vs30 Data In Palu](#)

Muhammad Rusydi, Rustan Efendi, Sandra and Rahmawati.....363

Material Science

[Determination of Binding Energy For Cu and Cu₂O Based X-Ray Diffraction Spectrum](#)

Heryanto, Bualkar Abdullah and Dahlang Tahir.....373

[Dye sensitized solar cell \(DSSC\) with natural dyes extracted from *Jatropha* leaves and purple *Chrysanthemum* flowers as sensitizer](#)

Dahlang Tahir, Wilda Satriani, P L Gareso and B Abdullah.....378

[Modifying Of Particle Boards From Rice Husk and Pinus Merkusii Sawdust And Using Soybean Waste Waters Based Adhesive.](#)

Indah Raya, Nurfika Ramdani, Abd. Karim and Musrizal Muin.....385

[Adsorption of Pb²⁺ on Thiol-functionalized Mesoporous Silica, SH-MCM-48](#)

P Taba, R D P Mustafa, L M Ramang and A H Kasim.....395

[Selectivity of \$\beta\$ -Sitosterol Imprinted Polymers as Adsorbent](#)

St Fauziah, Nunuk Hariani Soekamto, Paulina Taba and Muh Bachri Amran.....404

[Optical and Structural Characterization of ZnO/TiO₂ Bilayer Thin Films Grown by Sol-Gel Spin Coating](#)

P.L. Gareso, Musfitasari and Eko Juarlin.....412

[Innovated Conceptual Design of Loading Unloading Tool for Livestock at the Port](#)

Achmad Mustakim and Firmanto Hadi.....418

[*Piper Ornatum* and *Piper Betle* as Organic Dyes for TiO₂ and SnO₂ Dye Sensitized Solar Cells](#)

Azwar Hayat, A. Erwin E. Putra, Novriany Amaliyah, Shuzi Hayase and Shyam. S. Pandey.....426

[The Isolation of Nanofibre Cellulose from Oil Palm Empty Fruit Bunch Via Steam Explosion and Hydrolysis with HCl 10%](#)

S Gea, Z Zulfahmi, D Yunus, A Andriyani and Y A Hutapea.....432

[The Effect of Synthesis Temperature on Physical and Magnetic Properties of Manganese Ferrite \(MnFe₂O₄\) based on Natural Iron Sand](#)

E A Setiadi, Rahmat, S Simbolon, M Yunus, C Kurniawan, A P Tetuko, S Zelviani, Rahmaniah and P Sebayang.....440

Mathematics

[Edge Antimagic Total Labeling on Two Copies of Path](#)

Nurdin, A M Abrar, A R M Bhayangkara, Muliani, A U Samsir and M R An Nahdi.....446

[A Kinetic Modelling of Enzyme Inhibitions in the Central Metabolism of Yeast Cells](#)

Kasbawati, A Kalondeng, N Aris, N Erawaty and M I Azis.....452

[On Super Edge-magic Total Labeling of Modified Watermill Graph](#)

Nurdin, T S Ungko, J Gormantara, A Abdullah, S Aulyah and Nikita.....462

[Some Properties of Fixed Point for Contraction Mappings in Quasi ab-metric Space](#)

Budi Nurwahyu, Asriadi Nasrun and Naimah Aris.....471

[Stability and Optimal Harvesting of Modified Leslie-Gower Predator-Prey Model](#)

S Toaha and M I Azis.....477

[Irregular Assignment of Series Parallel Networks](#)

Nurdin.....485

[Prediction of Tidal Elevations and Barotropic Currents in the Gulf of Bone](#)

Rika Purnamasari, Agustinus Ribal and Jeffry Kusuma.....498

[A boundary element method with analytical integration for deformation of inhomogeneous elastic materials](#)

Moh. Ivan Azis, Syamsuddin Toaha, Mawardi Bahri and Nirwan Ilyas.....507

[The Ramsey Numbers for Star Versus Wheel of Even Order](#)

Hasmawati, P Nur Rohmah Oktaviani and Loeky Haryanto.....516

[Flattening Property and the Existence of Global Attractors in Banach Space](#)

Naimah Aris, Sitti Maharani, Massalesse Jusmawati and Budi Nurwahyu.....522

[On some examples of pollutant transport problems solved numerically using the boundary element method](#)

Moh. Ivan Azis, Kasbawati, Amiruddin Haddade and Sri Astuti Thamrin.....529

Physics

[Source to Skin Distance \(SSD\) Characteristics from Varian CX Linear Accelerator](#)

Wira Bahari Nurdin, Aji Purnomo and Syamsir Dewang.....536

[Evaluation of Energy Dose and Output Power Optimum of Diode's Laser of 450 nm and 650 nm in Photoantimicrobial Mechanisms Against Inhibition of C. Albicans Biofilm Cells](#)

S Dewi-Astuty, Suhariningsih, S Dyah-Astuti and A Baktir.....541

[Study of Image Quality, Radiation Dose and Low Contrast Resolution from MSCT Head by Using Low Tube Voltage](#)

Jumriah, Syamsir Dewang, Bualkar Abdullah and Dahlang Tahir.....549

[Improve Image Quality of Transversal Relaxation Time PROPELLER and FLAIR on Magnetic Resonance Imaging](#)

N Rauf, D Y Alam, M Jamaluddin and B A Samad.....555

[Study of Image Quality From CT Scanner Multi-Detector by using Americans College of Radiology \(ACR\) Phantom](#)

Mulyadin, Syamsir Dewang, Bualkar Abdullah and Dahlang Tahir.....562

[Deviation Value for Conventional X-ray in Hospitals in South Sulawesi Province from 2014 to 2016](#)

Ilham Bachtiar, Bualkar Abdullah and Dahlan Tahir.....570

[Thermodynamic and Mechanic Consideration on the stability of Anti-symmetric Schaefer's equation](#)

D.A. Suriamihardja, Amiruddin and Saaduddin.....577

[Design of Oil Viscosity Sensor Based on Plastic Optical Fiber](#)

Muhammad Yunus and A. Arifin.....585

[Study on steam pressure characteristics in various types of nozzles](#)

Firman and Muhammad Anshar.....593

[Characteristic Analysis Light Intensity Sensor Based On Plastic Optical Fiber At Various Configuration](#)

A. Arifin, Lusiana, Muhammad Yunus and Syamsir Dewang.....599

[Probing critical behavior of 2D Ising ferromagnet with diluted bonds using Wang-Landau algorithm](#)

N. A. Ridha, M. F. Mustamin and T. Surungan.....605

Statistics

[The Application of Extended Cox Proportional Hazard Method for Estimating Survival Time of Breast Cancer](#)

Hartina Husain, Sri Astuti Thamrin, Sulaiha Tahir, Ahmad Mukhlisin and M Mirna Apriani.....611

[The Application Law of Large Numbers That Predicts The Amount of Actual Loss in Insurance of Life](#)

Georgina Maria Tinungki.....619

[Financial Distress Prediction using Linear Discriminant Analysis and Support Vector Machine](#)

Noviyanti Santoso and Wahyu Wibowo.....628

[Interevent Time Distribution of Renewal Point Process, Case Study: Extreme Rainfall in South Sulawesi](#)

Nurtiti Sunusi.....635

[Preliminary Study of Perception and Consumer Behaviour Towards Energy Saving for Household Appliances: A Case of Makassar](#)

Yusri Syam Akil, Saiful Mangnggenre, Sri Mawar and Kifayah Amar.....642

[On The Impact of Climate Change to Agricultural Productivity in East Java](#)

Heri Kuswanto, Mutiah Salamah, Sri Mumpuni Retnaningsih and Dedy Dwi Prastyo.....648

[Estimation of Covariance Matrix on Bi-Response Longitudinal Data Analysis with Penalized Spline Regression](#)

A Islamiyati, Fatmawati and N Chamidah.....656

[Risk evaluation on leading companies in property and real estate subsector at IDX: A Value-at-Risk with ARMAX-GARCHX approach and duration test](#)

Dedy Dwi Prastyo, Dwi Handayani, Soo-Fen Fam, Santi Puteri Rahayu, Suhartono and Ni Luh Putu Satyaning Pradnya Paramita.....663

[Spatial Random Effects Survival Models to Assess Geographical Inequalities in Dengue Fever Using Bayesian Approach: a Case Study](#)

Sri Astuti Thamrin and Irfan Taufik.....673

[Forecasting Inflow and Outflow of Money Currency in East Java Using a Hybrid Exponential Smoothing and Calendar Variation Model](#)

Ana Susanti, Suhartono, Hario Jati Setyadi, Medi Taruk, Haviluddin and Putut Pamilih Widagdo.....682

[Modified Exponential Weighted Moving Average \(EWMA\) Control Chart on Autocorrelation Data](#)

Erna Tri Herdiani, Geysa Fandrilla and Nurtiti Sunusi.....695