

VOLUME 23 • NUMBER 12

DECEMBER 2017

www.aspbs.com/science

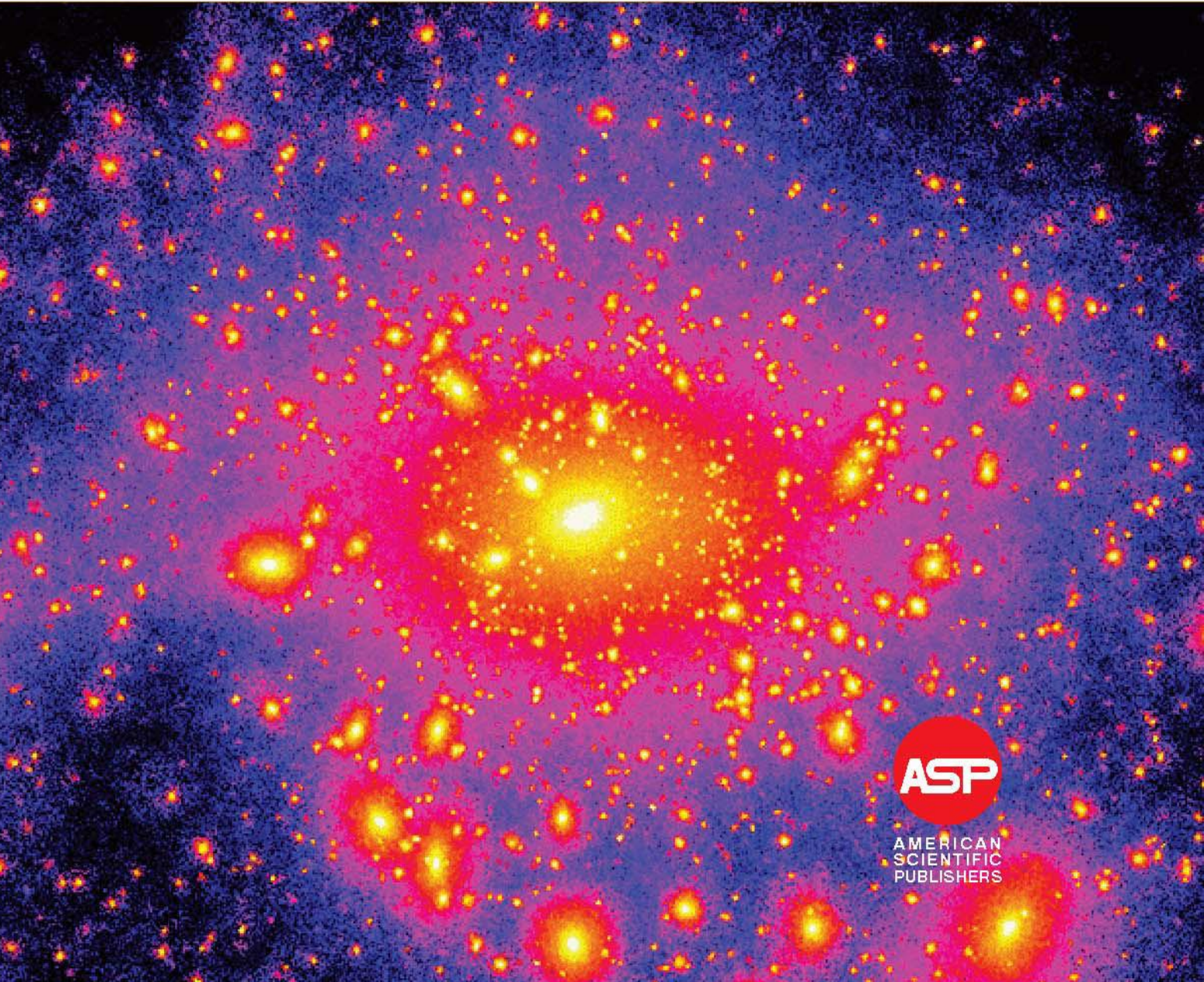
Advanced

SCIENCE

A Journal Dedicated to All Aspects
of Scientific Research

LETTERS

Editor-in-Chief: Hari Singh Nalwa, USA



AMERICAN
SCIENTIFIC
PUBLISHERS

Aims and Scope
Editorial Board
Instructions for Authors
Contact Information
Subscription Information
Copyright Transfer Agreement
Indexed/Abstracted
Cover Library
Contents

Advanced Science Letters

ISSN: 1936-6612 (Print): EISSN: 1936-7317 (Online)
 Copyright © 2000-2021 American Scientific Publishers. All Rights Reserved.



Aims and Scope

ADVANCED SCIENCE LETTERS is a multidisciplinary peer-reviewed journal with a very wide-ranging coverage, consolidates fundamental and applied research activities by publishing proceedings from international scientific, technical and medical conferences in all areas of (1) Physical Sciences, (2) Engineering, (3) Biological Sciences/Health Sciences, (4) Medicine, (5) Computer and Information Sciences, (6) Mathematical Sciences, (7) Agriculture Science and Engineering, (8) Geosciences, and (9) Energy/Fuels/Environmental / Green Science and Engineering, and (10) Education, Social Sciences and Public Policies. This journal does not publish general research articles by individual authors.

NOTE: This journal is solely focused on special issues from conference proceedings and does not publish general research articles by individual authors.

RESEARCH TOPICS COVERED (but not limited to):

ADVANCED SCIENCE LETTERS deals with Adhesion Science and Technology, Aeronautics Engineering, Aerosol Science and Technology, Aerospace Engineering, Agriculture Engineering, Agriculture Sciences, Anthropology, Astronomical Sciences, Biochemical engineering, Biochemistry, Bioengineering, Bioinformatics, Biological Sciences, Biomedical Engineering, Biomedical Sciences, Biotechnology, Botany, Ceramic Science and Engineering, Cereal Chemistry, Chemical Biology, Chemical Engineering, Chemical Engineering, Chemistry, Civil Engineering, Clinical Sciences, Colloid Science, Communication Science, Composites Science, Computer Science, Engineering and Technology, Dairy Science, Device Engineering, Drug Discovery, Earthquake Science, Ecological Sciences, Educational Sciences, Electrical Engineering, Electronics Engineering, Energy Science and Technology, Environmental Engineering, Environmental Sciences, Enzyme Science and Engineering, Food Science, Forestry, Fuel Science, Genetics, Geosciences, Health Sciences, Hydrology, Information Technology, Interface Science, Life Sciences, Lubrication Science, Manufacturing Science, Engineering and Technology, Marine Science, Materials Science, Mathematical Sciences, Mechanical Engineering, Medicinal Chemistry, Medicinal Science, Membrane Science, Metallurgical Science and Engineering, Meteorology, Microbiology, Minerals Science, Nanoscience, Nanotechnology, Nanoengineering, Nanomedicine, Nanobiology, Neuroscience, Nutrition Science, Oceanography, Optical Engineering, Optical Sciences, Paleontology, Paper Science, Petroleum Science, Petrology, Pharmaceutical Sciences, Pharmacology, Physics, Plant Sciences, Plasma Science and Technology, Polymer Engineering, Polymer Science, Polymer Technology, Powder Technology, Seismology, Sol-Gel Science, Supramolecular Science, Surface Science, Toxicology, Vacuum Science and Technology, Virology, Waste Management, Water Science, Wood Science and Technology, Zoology, Educational Aspects in all these Research Areas, and Selected Conference Special issues on Education, Social Sciences, Public Policies at the discretion of Editor-in-Chief.

READERSHIP

The journal is intended for a very broad audience working in all fields of (1) Physical Sciences, (2) Biological Sciences, (3) Mathematical Sciences, (4) Engineering, (5) Computer and Information Sciences, and (6) Geosciences, etc.

EDITOR-IN-CHIEF

Professor Ahmad Umar
 Department of Chemistry, College of Science and Arts
 Promising Centre for Sensors and Electronic Devices (PCSED)
 Najran University, P.O. Box: 1988, Najran 11001, Kingdom of Saudi Arabia
 Phone: +966-534-574-597
 Fax: +966-7-5442-135
 Email: advsci.asp@gmail.com

ASIAN EDITOR

Dr. Katsuhiko Ariga, PhD
 Advanced Materials Laboratory
 National Institute for Materials Science
 1-1 Namiki, Tsukuba, Ibaraki 305-0044, JAPAN

Website: www.aspbs.com/science

Referee's Report

Please prepare and submit Reviewer's Report to appropriate Associate Editors accordingly.

Subscription

American Scientific Publishers
 26650 The Old Road, Suite 208
 Valencia, California 91381-0751, USA
 Tel. (661) 799-7200
 Fax: (661) 799-7230
 Email: order@aspbs.com

Annual Subscription Rates (Print Edition) for 2008

Personal: US\$ 200 (Domestic) / US\$250 (Foreign Countries)
 Institutional: US\$ 500 (Domestic) / US\$ 600 (Foreign Countries)
 Postage and handling: add \$30 for USA and \$50 for foreign countries

Web Edition

ADVANCED SCIENCE LETTERS will be available via internet. For subscription rates to Web Edition, please contact publisher.

Book for Review

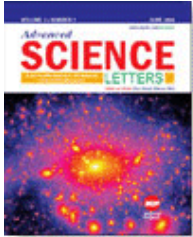
Publications should be sent the Editorial Office.

Advertising

American Scientific Publishers
 26650 The Old Road, Suite 208
 Valencia, California 91381-0751, USA
 Tel. (661) 799-7200
 Fax: (661) 799-7230
 Email: order@aspbs.com

Advanced Science Letters

ISSN 1936-6612 (Print)
Ceased publication in 2019



ADVANCED SCIENCE LETTERS is an international peer-reviewed journal with a very wide-ranging coverage, consolidates research activities in all areas of (1) Physical Sciences, (2) Biological Sciences, (3) Mathematical Sciences, (4) Engineering, (5) Computer and Information Sciences, and (6) Geosciences to publish original short communications, full research papers and timely brief (mini) reviews with authors photo and biography encompassing the basic and applied research and current developments in educational aspects of these scientific areas.

Publisher: American Scientific Publishers

[More about this publication?](#)

Volume 23, Number 12, December 2017

 Contents

 Supplementary Data

research-article

Selected Peer-Reviewed Articles from the First International Joint Conference on Science and Technology (IJCST 2016), Bali, Indonesia, 12– 13 October, 2016
pp. 11635-11636(2)

Authors: *Bayuseno, A. P; Jamari; Atweh, Bill; Schmahl, Wolfgang W; Zhang, Sheng*

Land Requirement for Food in Ngawi Regency

pp. 11637-11640(4)

Author: *Sutedjo, Agus*

Spasio-Temporal Variability of the Vegetation Cover Density in the Gunungsewu Karst Landscape Based on Landsat 8 OLI Data

pp. 11641-11644(4)

Author: *Budiyanto, Eko*

Juridical Issues of Foreign Labor in Asean Economic Community Era

pp. 11645-11648(4)

Author: *Nugroho, Arinto*

Media to Counter Radicalization: A Case Study at Islamic (Boarding) Schools

pp. 11649-11653(5)

Author: *Tsuroyya*

Social and Personal Factors to Become Elementary Teacher

pp. 11654-11657(4)

Authors: *Tandyonomanu, Danang; Tsuroyya; Dharmawan, Awang*

The Study of the Factors That Influence the Community to Survive Living in the Disaster Area

pp. 11658-11661(4)

Authors: *Zain, Ita Mardiani; Sulistinah; Prasetya, Drianda Immanuel*

Development of Tourism in Kediri Regency Destination as the Local and National

pp. 11662-11665(4)

Authors: *Murtini, Sri; Sudaryono, L*

Democratic Society in the Local Wisdom: Citizen Participatory Activity in the Environmental Movement

pp. 11666-11669(4)

Author: *Sari, Maya Mustika Kartika*

Increasing the Productivity of Chips Manufacturers Through Utilization of Chip Raw Materials Chopper and Oil Drying Machine

pp. 11670-11673(4)

Author: *Prasetya, Sukma Perdana*

Jokowi's Political Branding for the Victory of the President

pp. 11674-11677(4)

Author: *Fauzi, Agus Machfud*

The Carrying Capacity Ratio (CCR) Analysis of Meteoric Water Resources at the Middle East Java Region

pp. 11678-11682(5)

Author: *Hariyanto, Bambang*

Social Media and Spiritual Content: A Descriptive Analysis of Facebook and SalingSapa.com

pp. 11683-11686(4)

Author: *Setianingrum, Vinda Maya*

Behavior of Bonek Supporters in the Perspective Subculture of Violence

pp. 11687-11691(5)

Author: *Setyowati, Rr. Nanik*

Strengthening Educational Function of Family Welfare Empowerment
Movement: Educational Aids on Gender for Democracy
pp. 11692-11696(5)
Author: *Jatiningsih, Oksiana*

Revitalization of Traditional Market Based on *Deliberative* Democracy
Concept
pp. 11697-11701(5)
Author: *Prastyawan, Agus*

Building Students' Multicultural Values Through Citizenship Education to
Create a Democratic Society
pp. 11702-11705(4)
Authors: *Suyanto, Totok; Setyowati, Rr. Nanik; Pramono, Made*

Role of Organization Culture Performance for Primary School Teachers
pp. 11706-11709(4)
Author: *Suharningsih*

Effective Self-Management Affect the Performance of Teacher Primary
School
pp. 11710-11714(5)
Author: *Murtedjo*

Religion Spirit to the Development of Modern Science; Synergies Between
Reason and Revelation
pp. 11715-11718(4)
Author: *Yani, M. Turhan*

Mediation Over Disputes Between Indigenous People and Industrial
Plantation Forest Businessmen in Indonesia
pp. 11719-11722(4)
Authors: *Tamsil; Wardhana, Mahendra*

Legal Protection of Traditional Knowledge, Recognition and Certainty of
Property Protection of Traditional Knowledge of Indigenous Peoples
pp. 11723-11726(4)
Authors: *Susilowati, Indri Fogar; Hermono, Budi*

Legal Protection for Victims of Bullying in the Learning Process in Terms of
Epistemology
pp. 11727-11730(4)
Authors: *Hikmah, Nurul; Astuti, Pudji*

Rethinking on Criminalizing of Defamation (Evaluation of Criminal Policy)
pp. 11731-11734(4)
Authors: *Rusdiana, Emmilia; Astuti, Pudji*

Manuscript Controversy Issue Boekhandel Tan Khoen Swie Kediri (Historical Studies)

pp. 11735-11738(4)

Authors: *Wisnu; Alrianingrum, Septina; Artono*

Messianic Figures in the Late Period of Majapahit: An Anthropological Approach in Historical Archaeology Issues

pp. 11739-11743(5)

Authors: *Pamungkas, Y. Hanan; Trilaksana, Agus; Sumarno*

Existence of Nation: Indonesian Football in Melbourne Olympics 1956

pp. 11744-11747(4)

Authors: *Aji, Rojil Nugroho Bayu; Hermawan, Eko Satriya; Riyadi*

Needs-Based Poverty Reduction in Rural Areas

pp. 11748-11752(5)

Author: *Harianto, Sugeng*

An Intercultural Communication Dereliction and Prejudice: A Case Study in Sampang District, Madura, Indonesia

pp. 11753-11757(5)

Author: *Dharmawan, Awang*

Developing Learning History as Emancipatory Education

pp. 11758-11761(4)

Author: *Suprijono, Agus*

Construction and Strategies for Strengthening the Value of Integrity for Students to Build a Culture Dignity and Competitively in Universitas Negeri Surabaya

pp. 11762-11765(4)

Authors: *Sarmini; Prasetyo, Ketut*

The Role of Family in Gender Equality Building

pp. 11766-11769(4)

Author: *Listyaningsih*

The Meaning of Coffee Shop for the Young People in Aceh

pp. 11770-11775(6)

Authors: *Sarmini; Ridwan; Basriani, Ani Wakidah; Nadiroh, Ulin*

Nationalism Construction in the Young People in Surabaya East Java

pp. 11776-11780(5)

Authors: *Sarmini; Warsono*

The Roles of Parents in Building Family Harmony in Early Marriage Couple in Madura

pp. 11781-11786(6)

Authors: *Sarmini; Majid, Abdul; Hasanah, Syarifah; Nadiroh, Ulin; Widiawati, Hestin Sri*

Developing Strategy for Rice Milling Unit Selection Process Using Analytical Hierarchy Process (AHP) Method: A Case of Agroindustry in Indonesia

pp. 11787-11792(6)

Authors: *Suryaningrat, I. B; Fianeka, Angela*

Quality Characteristics of Natural Edamame Jam Without Preservative Ingredient as Supplementary of Emergency Food

pp. 11793-11796(4)

Authors: *Nurhayati, Nurhayati; Alfian, Ahmad Rizky*

Savory Salt Production by Enzymatic Hydrolysis from Low Economic Value of Freshwater Fishes and Saltwater Fishes

pp. 11797-11799(3)

Authors: *Witono, Yuli; Taruna, Iwan; Windrati, Wiwik Siti; Azkiyah, Lailatul; Yoshino, Tomoyuki; Nurani, Ria Dewi*

Superiority of Two Stage Anaerobic Fixed Bed Reactors in Handling Organic Shock Loads

pp. 11800-11803(4)

Authors: *Budiastuti, Herawati; Widyabudiningsih, Dewi; Kurnia, Dianty Rosirda Dewi; Rahayu, Endang Sri*

Heat Integration Between HVU and FCCU to Improve Energy Saving

pp. 11804-11809(6)

Authors: *Santi, Sintha Soraya; Renanto; Altway, Ali*

Characterization of IR Spectra and Molecular Weight of the Products on Modified Ring Opening Polymerization of Poly Lactid Acid

pp. 11810-11814(5)

Authors: *Meliana, Yenny; Ibnusantosa, Gatot; Haryono, Agus*

Characterization of Emulsion System on Mimba Oil as Organic Insecticide Using Surfactants Based on Vegetable Oil

pp. 11815-11818(4)

Authors: *Savitri; Meliana, Yenny*

Synthesis and Characterization of Palm Oil and Polyethylene Glycol Based Polymeric Surfactants

pp. 11819-11823(5)

Authors: *Irawan, Yan; Juliana, Ika; Adilina, Indri Badria*

Economic Analysis and Development Strategies for Leading Products in Sampang District
pp. 11824-11827(4)

Authors: Fauzi, Akhmad; Kustini; Santoso, Bowo; Mulyadi, Edy

Effect of Pressure on the Supercritical CO₂ Extraction of *Asiaticoside* from *Centella asiatica*

pp. 11828-11833(6)

Authors: Sondari, Dewi; Irawadi, Tun Tedja; Setyaningsih, Dwi; Tursiloadi, Silvester

Alkoxy Groups of Sulfonated Natural Oil-Based Surfactant to Reduce Oil-Water Interfacial Tension for Chemical Flooding

pp. 11834-11837(4)

Authors: Alli, Yani F; Usman; Brioletty, Letty

Risk Allocation for Low-Cost Apartment Program Implementation in the Surabaya Metropolitan Area

pp. 11838-11842(5)

Authors: Muntoha, M; Soemitro, Ria A. A; Rachmawati, Farida

The Effect of Detention Time and Plant Density to the Effectivity of Constructed Wetland as Wastewater Treatment Innovation in Small Industry of Cassava Chips

pp. 11843-11847(5)

Authors: Rahmadyanti, Erina; Witjaksono, Andre Dwijanto; Hartono, Ulil

The Influence of Organizational Culture and Job Satisfaction on Organizational Citizenship Behavior (OCB) with Organizational Commitment as Intervening Variable at PT. Cartenz Indonesia in Solo City-Indonesia

pp. 11848-11852(5)

Authors: Utami, Wiji; Farida, Lilik; Azalia, Nadia; Lutfi, Muhammad

Developing a Harmony Ethnic Plurality in Pohuwato Society in Public Administration Perspective

pp. 11853-11856(4)

Authors: Sastro, Wantu; Yoan, Tamu

Optimizing Product Mix Using Linear Programming: A Case Study of 'Kopi Sembilan'

pp. 11857-11862(6)

Authors: Witjaksono, Andre Dwijanto; Rahmadyanti, Erina; Nugrohoseno, Dwiarko

Land Use Prospects and Challenges on Intermodal Terminal, Juanda International Airport

pp. 11863-11866(4)

Authors: Pattisina, Amanda Ristriana; Susanti, Anita; Widayanti, Ari

The Use of Fuzzy Logic in Developing Competitiveness Strategy Toward
Small and Medium Enterprises (Grocery)

pp. 11867-11873(7)

Authors: *Alimudin, Arasy; Soebandi; Falani, Achmad Zakki; Setiawan, Eman; Arifin, Bustomi*

School Counseling Services Information System Optimization in Multi-Level
School at Surabaya

pp. 11874-11878(5)

Authors: *Limanto, Susana; Andre; Absari, Dhiani Tresna; Setyawan, Sholeh Hadi*

Classification of Lung Disease Syndromes in Traditional Chinese Medicine
Based on Learning Vector Quantization

pp. 11879-11883(5)

Authors: *Buditjahjanto, I. G. P. Asto; Rochmawati, Naim; Peni, R. Hapsari*

The Ammoniation—A Way for Evolving the Rural Areas, Madura Island,
Indonesia

pp. 11884-11888(5)

Authors: *Teguh, Soedarto; Soemartono; Zuhri, Syaifuddin; Rining, Ertien*

Computer Utilization as a Balanced Opponent in Dam-Dam-An

pp. 11889-11891(3)

Authors: *Purnomo, Setiawan Wibowo; Limanto, Susana; Widiasri, Monica*

Beef Weight Prediction System Based on Image Processing in Order to
Increase Livestock Productivity

pp. 11892-11896(5)

Authors: *Anifah, Lilik; Nurhayati; Haryanto; Harimurti, Rina; Qoiriah, Anita; Ekohariadi*

Effect of PWM Signal on Hydrogen Production Using Hoffman Voltmeter
Methods

pp. 11897-11901(5)

Authors: *Martorningsih, Wahyuni; Alfanz, Rocky; Akbar, M. A; Laksmono, Joddy Arya; Meliana, Yenny*

Determining Optimal Toolpath Strategy in the Manufacture of Insole Shoe
Orthotic Made from Eva Foam Rubber for Diabetes Patients

pp. 11902-11909(8)

Authors: *Bawono, B; Anggoro, P. W; Anthony, A. A; Jamari, J; Bayuseno, A. P*

Optimization of Manufacturing Process Parameters for the Product of ISO-
Diabetes Patients with High Risk Classes

pp. 11910-11917(8)

Authors: *Anggoro, P. W; Bawono, B; Wibowo, J; Jamari, J; Bayuseno, A. P*

Comparison of the Effect of Texturing Modes and Boundary Slip on Tribological Performance of Journal Bearing

pp. 11918-11921(4)

Authors: *Tauviquirrahman, Mohammad; Kurniawan, Bayu; Ismail, Rifky; Susilowati; Jamari*

Design of Shadow Trainer Equipment to Measure the Agility of Badminton Player

pp. 11922-11927(6)

Authors: *Budijono, Agung Prijo; Pudjjuniarto*

Syariah-Based Contract Farming as a Socio-Business Model: Experience of Local Phenomena

pp. 11928-11932(5)

Authors: *Hendrarini, Hamidah; Sumartono*

The Model "Orientasi IPA" to Improve the Critical Thinking Skills of Senior High School Students

pp. 11933-11937(5)

Authors: *Jatmiko, Budi; Supardi, Zainul Arifin Imam; Rosyid*

The Effectiveness of Different Diluent Media as the Storage Medium for Human Sperm: To Maintain Its Quality

pp. 11938-11942(5)

Authors: *Isnawati; Tjandrakirana; Ducha, Nur*

Implementation of Science Character Values with Green Chemistry Insight Integrated on Basic Chemistry Course by Using Project Based Learning

pp. 11943-11947(5)

Authors: *Mitarlis; Yonata, Bertha; Hidayah, Rusly*

Qualitative Study of Antibacterial Activity of Chitosan-ZnO/Al₂O₃ Nanocomposites

pp. 11948-11951(4)

Authors: *Maharani, Dina Kartika; Hidayah, Rusly; Khasanah, Lailatul*

Product and Process Performance Improvement of Candidate Physics Teachers by Implementation of an Integrated Learning Strategy

pp. 11952-11955(4)

Authors: *Dwikoranto; Madlazim; Hariyono, Eko; Sari, Dyah Permata*

The Effect of Combine Between Dietary Protein Level Variation and Laserpuncture Induction on Catfish (*Clarias* sp) Oocyte Development

pp. 11956-11961(6)

Authors: *Hariani, Dyah; Purnama, Erlis R; Kusuma, Pungky Slamet Wisnu*

The Formulation of Biopesticide Combination (*SpltMNPV* Virus, *Beauveria bassiana* and Neem Seed (*Azadirachta indica* A. Juss.) as Biocontrol Agents Against Soybean Pest

pp. 11962-11966(5)

Authors: *Ratnasari, Evie; Asri, Mahanani Tri; Winarsih*

Learning Model of the Basic Physics to Improve Concept Understanding and Critical Thinking Skills

pp. 11967-11971(5)

Authors: *Achmadi, Hainur Rasid; Jatmiko, Budi; Wasis*

Effectiveness of Ruminant Feed Formula from the Fermented Water Hyacinth (*Eichhornia crassipes*) to Produce the High Level Protein of Goat Meat

pp. 11972-11975(4)

Authors: *Fitrihidajati, Herlina; Ratnasari, Isnawati Evie*

Building the Design of Blended Learning in Web Lite-Based and Industrial Visits Inorganic Chemical Course

pp. 11976-11981(6)

Authors: *Dwiningsih, Kusumawati; Sukarmin; Muchlis*

The Role of Yacon Fructooligosaccharides on the Bile Acids Binding and Bile Salt Hydrolase Activities

pp. 11982-11985(4)

Authors: *Yuanita, Leny; Wikandari, Prima Retno; Sabtiawan, Wahyu Budi*

Earthquake Broadband-Noise Experiments: Spectrogram and Spectral Analysis for Hydrocarbon Reservoir Detection

pp. 11986-11990(5)

Authors: *Madlazim; Prastowo, Tjipto*

Some Convergence Theorems on δ -Denjoy Integral

pp. 11991-11994(4)

Author: *Manuharawati*

Developing Teacher's Guidebook for Implementing Authentic Assessment in Learning Mathematics Using Scientific Approach

pp. 11995-12001(7)

Author: *Masriyah*

Synthesis of Nano SiO₂ Powders from Lusi with Continuous Method

pp. 12002-12006(5)

Authors: *Munasir; Pribadi, A. J. Hairin; Supardi, Z. A. Imam; Zainuri, Moch; Triwikantoro; Darminto*

Effect Egg Yolk in CEP Extender for Sperm Capacitation of Bull During Storage at Temperature 4–5 °C

pp. 12007-12011(5)

Authors: *Ducha, Nur; Susilawati, Trinil; Aulanni'am; Wahyuningsih, Sri*

A Comparative Study of PCA, FFT and Wavelet as Feature Extraction for Gamelan Tones Recognition

pp. 12012-12015(4)

Authors: *Wintarti, Atik; Imah, Elly Matul; Winarko, Joko*

Analysis of Cypermethrin Using an Electrode Solid Copper Amalgams Developed as a Working Electrode in Differential Pulse Voltammetry Compared with Gas Chromatography Methods

pp. 12016-12019(4)

Authors: *Setiarso, Pirim; Sanjaya, I. Gusti Made*

Yeast Hydrolysate Enzymatic (YHE) as Degradation Result Using Pineapple's Bromelain as Preparation Material of Microbiology Culture Media

pp. 12020-12024(5)

Authors: *Agustini, Rudiana; Adiprahara, Mirwa*

Characterization of Mesoporous NaZSM-5 and K₃PO₄/NaZSM-5 from Adsorption and Desorption Isotherms

pp. 12025-12028(4)

Authors: *Samik; Ediati, Ratna; Prasetyoko, Didik*

Promoting Pre-Service Chemistry Teachers' Environmental Value Orientation and Creative Thinking Skill Through the Implementation of Green Chemistry Laboratory Learning

pp. 12029-12032(4)

Authors: *Poedjiastoeti, Sri; Suyono; Yonata, Bertha; Wahyuningsih, Arini Siti*

Nest Development of Two Type Edible Nest in Gresik. East Java

pp. 12033-12036(4)

Authors: *Kuntjoro, Sunu; Vitasari, Ayu*

Three Component Seismogram Analysis: A Case Study of the $M = 7.7$ South Java, Indonesia Earthquake on July 17, 2006 and Changes in Coulomb Stress and Seismicity Rate

pp. 12037-12042(6)

Authors: *Supardiyono; Nugraha, Andri Dian; Madlazim; Santosa, Bagus Jaya*

Experimental Design Skills Improvement in Earth and Space Sciences Learning by Implementing Four Question Strategy

pp. 12043-12046(4)

Authors: *Supriyono; Madlazim*

Formulating Variation of Strategy for Reducing Burden of Chemistry Students' Misconceptions Based on Conceptual Change Strategy and Individual Characteristic

pp. 12047-12053(7)

Authors: *Suyono; Masriyah; Muchlis*

Content of Heavy Metals (Pb, Cd, and Se) on Agricultural Land Contaminated Hot Mud Porong and the Impact on Safety of Agricultural Product

pp. 12054-12057(4)

Authors: *Purnomo, Tarzan; Soegiyanto*

Reasoning Processes of Prospective Teachers in Proving Theorem Regarding Differences in Mathematical Ability

pp. 12058-12063(6)

Authors: *Susanah; Budayasa, I. Ketut; Siswono, Tatag Yuli Eko; Budiarto, Mega Teguh*

Rapid Determination of Earthquake Magnitude Using Measurements of the Dominant Period of P-Waves Observed at Local Stations in North Sulawesi

pp. 12064-12067(4)

Authors: *Prastowo, Tjipto; Puspitasari, Dyah Ayu; Ngkoimani, La Ode; Safiuddin, La Ode*

Cognitive Process Analysis of PISA, TIMSS, and UN Science Items Based on Revised Bloom Taxonomy

pp. 12068-12072(5)

Authors: *Wasis; Sukarmin; Prastiwi, Muji Sri*

The Specific Species Pattern of Earthworms in Contaminated Area with Heavy Metals

pp. 12073-12078(6)

Authors: *Budijastuti, Widowati; Hariyanto, Sucipto; Soegianto, Agoes*

Development of Business Competencies Based on Entrepreneurship in the Area of Urban Sprawl

pp. 12079-12083(5)

Authors: *Aryaningsih, Ni Nyoman; Arsana, Made. Marsa; Irianto, Ketut*

The Power of Hybrid Value Integration in Sustainable Tourism Development the Case of Tourism in Bali

pp. 12084-12088(5)

Authors: *Budarma, I. Ketut; Erawati, Ni Made Rai*

Knowledge Management System as Transfer Media in Balinese Handicraft SMEs

pp. 12089-12093(5)

Authors: *Sentana, I. Wayan Budi; Yuniastari, Ni Luh Ayu Kartika*

Approach Temperature of Heating Process in Double Tube Heat Exchanger with Al₂O₃-Water Nanofluid

pp. 12094-12097(4)

Authors: *Anakottapary, Daud Simon; Wibolo, Ahmad; Sunu, Putu Wijaya; Rajendra, I. Made*

Developing Green Tourism Model: A Case Study of "Cultic" at Belimbing Village, Bali-Indonesia

pp. 12098-12102(5)

Authors: *Santosa, I. Dewa M. C; Astawa, I. Putu; Waisnawa, IN. G. Suta; Astawa, I. Putu M; Temaja, I. Wayan; Sudiajeng, Lilik*

Preferred E-Marketing Methods in Travel Bureau Operation: In Support to Community-Based Tourism

pp. 12103-12108(6)

Authors: *Ernawati, Ni Made; Sudarmini, Ni Made*

Negotiating Between Authenticity and Change in Community-Based Tourism: Evidence from Bali

pp. 12109-12115(7)

Authors: *Ernawati, Ni Made; Murni, Ni Gst Nym Suci; Jendra, Wayan*

The Benefits of Improved Aspects of Human Physiology in the Learning Process

pp. 12116-12120(5)

Authors: *Widana, I. Ketut; Sudiarta, I. Ketut*

Development of Practice Set of Fares and Ticketing 3 Subject Based on Simulation with Abacus/Sabre Emulator

pp. 12121-12126(6)

Authors: *Budiasa, I. Made; Suparta, I. Ketut*

Effect of Pragmatic-Based Learning Model on Students' Pragmatic Competence

pp. 12127-12131(5)

Authors: *Widanta, I. Made Rai Jaya; Budiarsa, Made; Simpen, I. Wayan; Netra, I. Made*

Android Based Face Recognition System Using PCA and Eigen Face

pp. 12132-12135(4)

Authors: *Astawa, I. Nyoman Gede Arya; Sunaya, I. Gusti Agung Made; Bawa, I. Gusti Ngurah Bagus Catur*

Strength Analysis of Seririt Market Building Structure After the Fire

pp. 12136-12140(5)

Authors: *Suasira, I. Wayan; Santiana, I. Made Anom; Lokantara, W. D; Yasa, I. Made Tapa; Wibawa, I. Gede Sastra*

The Influence of Quantum Writing Method on Academic Writing Skill

pp. 12141-12146(6)

Authors: *Adnyana, Ida Bagus Artha; Putra, Kadek Dwi Cahaya*

Strategic Information Systems Planning at Bali State Polytechnic Using Ward and Peppard Framework

pp. 12147-12151(5)

Authors: *Dewi, Kadek Cahya; Suprpto, Putu Adi*

The Prediction of Transitive Derivative Verbs -kan and -i Suffixs in Indonesian (Linguistic Typology Study)

pp. 12152-12155(4)

Authors: *Darlina, Lien; Artawa, Ketut*

Recharge Wells Innovation for Domestic Rainwater Harvesting

pp. 12156-12160(5)

Authors: *Sudajeng, Lilik; Wiraga, I. Wayan; Parwita, I. Gusti Lanang; Mudhina, Made*

Assessment and Evaluation on the Aquifer in Denpasar City

pp. 12161-12167(7)

Authors: *Sudajeng, Lilik; Mudina, Made; Sudiarsa, Made; Tapayasa, Made; Suparta, Wayan*

The Application of Interactive Multimedia Technologies in the Development of Instructional Media for Practice of Mechanical Technology

pp. 12168-12171(4)

Authors: *Rajendra, I. Made; Arsani, Ida Ayu Anom; Sudana, I. Made*

Social and Speech Community of Central Java Indonesia

pp. 12172-12176(5)

Authors: *Wajdi, Majid; Subiyanto, Paulus*

Corporate Social Responsibility Based on Tri Hita Karana: The Implementation in the Hotel Industry

pp. 12177-12181(5)

Authors: *Dewi, Nyoman Indah Kusuma; Mataram, I. Gusti Agung Bagus; Siwantara, I. Wayan*

Ergonomic Chair Design for Nursing Mothers to Increase Motivation of Exclusive Breastfeeding

pp. 12182-12185(4)

Authors: *Sutapa, I. Nyoman; Santiana, I. Made Anom; Yusuf, M; Lokantara, W. D*

Text Processing Application for Indonesian Documents

pp. 12186-12189(4)

Authors: *Prihatini, Putu Manik; Suryawan, I. Ketut*

Experimental Investigations of Heat Transfer Enhancement in a Double Tube Heat Exchanger with Rectangular Grooved
pp. 12190-12193(4)

Authors: *Sunu, Putu Wijaya; Sutarna, I. Nyoman; Arsawan, I. Made*

The Characteristics of Pressure Drop in a Grooved Annulus of Double Pipe Heat Exchanger

pp. 12194-12197(4)

Authors: *Sunu, Putu Wijaya; Rasta, I. Made*

Social Influence and Energy Conservation: Using Obedience to Authority to Promote Air Conditioning Energy Saving

pp. 12198-12201(4)

Authors: *Santika, Wayan G; Sudiarta, I. Ketut Gede; Widiantara, I. Made*

The Role of Condenser Approach Temperature on Energy Conservation of Water Cooled Chiller

pp. 12202-12205(4)

Authors: *Suamir, I. Nyoman; Baliarta, I. Nyoman Gede; Arsana, Made Ery; Temaja, I. Wayan*

Waste Heat Recovery from Central AC System for Hot Water Supply; A Case Study for Hotel Building Application in Indonesia

pp. 12206-12210(5)

Authors: *Suamir, I. Nyoman; Ardita, I. Nengah; Wirajati, I. Gusti Agung Bagus*

Marginalization of Local Community in Tourism Area of Nusa Dua Bali

pp. 12211-12214(4)

Authors: *Murni, N. G. N. Suci; Astawa, I. Putu; Budarma, I. K*

Partnership Strategy for Competing Globally

pp. 12215-12219(5)

Authors: *Sukartini, Ni Wayan; Lasmini, Ni Ketut; Sudarmini, Ni Made*

The Empowerment Model of the Underdeveloped Regions Society Through the Innovation of Cattle-Fattening

pp. 12220-12222(3)

Authors: *Teguh, Soedarto; Zuhri, Syaifuddin; Soemartono; Rining, Ertien*

Isolation and Analysis of Sucrose Synthase (SUS) Gene Fragment Originated from "Kopyor" Coconut Mutant

pp. 12223-12226(4)

Authors: *Sukendah; Volkaerd, Hugo; Sudarsono*

Hay and Silage: Two Effective Ways of Animal Feed Ingredients Preservation for the Underdeveloped Rural Societies

pp. 12227-12230(4)

Authors: *Teguh, Soedarto; Zuhri, Syaifuddin; Soemartono; Rining, Ertien*

Influence of Citric Acid on Struvite Precipitation

pp. 12231-12234(4)

Authors: *Perwitasari, Dyah Suci; Jamari, J; Muryanto, Stefanus; Bayuseno, Athanasius P*

Hydrolysis of Cellulose from Bamboo with Biology Process Using Enzyme

pp. 12235-12238(4)

Authors: *Ketut, Sari Ni; Nico, Yonathan; Tika, Lestari; Dira, Ernawati*

The Effect of Heating Temperature at the Bleaching Process of Palm Oil to the Color's Absorption of Activated-Based Trass Rock

pp. 12239-12242(4)

Authors: *Widodo, Laurentius Urip; Sukirmiyadi; Wahyusi, Kindriari Nurma*

Scale Formation of Barium Sulfate in the Piping Flow System: Mineralogy and Morphology Evaluation

pp. 12243-12246(4)

Authors: *Karaman, N; Jamari, J; Bayuseno, A. P; Muryanto, S*

Formation and Controlling of Struvite Crystals Using a Novel-Vertical Reactor: Study on Purity and Morphology Variation

pp. 12247-12251(5)

Authors: *Edahwati, L; Sutiyono, S; Muryanto, S; Jamari, J; Bayuseno, A. P*

A Chemical Effectivity Study on Removal of Ions Seawater Mg^{2+} , K^+ , Ca^{2+} and SO_4^{2-}

pp. 12252-12255(4)

Authors: *Pujiastuti, Caecillia; Ngatilah, Yustina; Sumada, Ketut; Muljani, Srie*

Gas Purification in Coal Pyrolysis Used the Catalyst $Ca(OH)_2:CH_3ONa$

pp. 12256-12258(3)

Authors: *Sukamto; Samanhudi, Didi; Sunardi; Siswati, Nana Dyah*

Characterization of Zeolite as an Adsorbent for Capturing CO_2

pp. 12259-12262(4)

Authors: *Utami, Isni; Redjeki, Sri; Astuti, Dwi Hery; Triana, Nurul Widji*

Use of Upflow Fluidized Bed Reactor (FBR) for Recovery Phosphorus from Waste-Water Through Struvite Precipitation

pp. 12263-12267(5)

Authors: *Sutiyono; Edahwati, L; Muryanto, S; Jamari, J; Bayuseno, A. P*

Antibacterial Activity of *Leucaena leucocephala* Extracts on Growth of *Escherichia coli*

pp. 12268-12271(4)

Authors: *Rosida, D. F; Djajati, S; Nilamayu, Z. A; Rosida*

Physical Characteristics of Fish Bone Gelatin Extracted Acid

pp. 12272-12275(4)

Authors: *Hapsari, N; Rosida, D. F; Djajati, S; Aviskarahman, A; Dewati, R; Sudaryati*

Identification of Pedada Fibers by Fourier Transform Infrared

Spectrophotometer (FTIR)

pp. 12276-12278(3)

Authors: *Jariyah; Widjanarko, Simon Bambang; Yunianta; Estiasih, Teti*

The Search of Meaning of Today's *Alun-Alun* Malang (Through Pierce's Semiotic Reading)

pp. 12279-12285(7)

Authors: *Susanti, Wiwik Dwi; Agustin, Dyan*

The Sense of Place of Home Based Enterprises at the Metal *Kampung* of Pandean

pp. 12286-12289(4)

Authors: *Safeyah, Muchlisiniyati; Elviana, Eva; Sutejo, Aris*

Design Study of Shared Kitchen with Social Interaction in Vertical Housing

pp. 12290-12294(5)

Authors: *Agustin, Dyan; Susanti, Wiwik Dwi*

Road Damage Analysis of Kalianak Road Surabaya

pp. 12295-12299(5)

Authors: *Ibnu, Sholichin; Nugroho, Utomo*

Optimization of the Used of Public Open Space in Low Income Residential Areas

pp. 12300-12303(4)

Authors: *Elviana, Eva; Suryani, Sri; Susanti, Wiwik Dwi*

Orientation Optimization of Flat Building in Humid Tropical Climate: Case Study on UPN Veteran East Java's Apartment

pp. 12304-12308(5)

Authors: *Subiyantoro, Heru; Winarto, Erwin Djuni*

Information System Audit Based on Customer Perspective 4

pp. 12309-12312(4)

Authors: *Mukaromah, Siti; Pribadi, Apol*

Analysis of Cocoa Production in Smallholder Plantations to Increase Productivity Using System Dynamics Approach

pp. 12313-12317(5)

Authors: *Ithriah, Syurfah Ayu; Suryani, Erma; Muhandis, Isnaini*

Comparison of Production Glucose from Starch and Cellulose Using
Delignification and Hydrolysis Process

pp. 12318-12321(4)

Authors: *Ketut, Sari Ni; Pudjiastuti, C; Sumada, Ketut*

Comparative Analysis Using Cavitation and No-Cavitation Models for
Lubricated Journal Bearing: A Study Case of Effect of Radial Velocity

pp. 12322-12324(3)

Authors: *Susilowati, S; Ichsan, Brain Choirul; Tauviqirrahman, Mohammad; Jamari; Bayseno, A. P; Muchammad*

Geometrical Analysis of Artificial Rough Surfaces: Mathematical and CAD
Model

pp. 12325-12329(5)

Authors: *Kartini; Sipayung, G. A; Saputra, E; Ismail, R; Jamari, J; Bayuseno, A. P*

Building Accountability in Religious Organization Through Accounting
Changes

pp. 12330-12332(3)

Authors: *Yuhertiana, Indrawati; Budiwitjaksono, Gideon Setyo; Hendarti, Ignatia Martha*

Identification of Chlorophyll-A Distribution Using Landsat 8 in Madura

pp. 12333-12335(3)

Authors: *Nahari, Rosida Vivin; Alfita, Riza*

Health of Dental and Mouth Based on Forward Chaining Method

pp. 12336-12339(4)

Authors: *Syakur, Muhammad Ali; Anamisa, Devie Rosa*

Forecasting Application for Simpati Telkomsel Card Using Backpropagation
(Case Study in Bangkalan Madura-Indonesia)

pp. 12340-12343(4)

Authors: *Rochman, Eka Mala Sari; Rachmad, Aeri*

Voice Recognition Application by Using Fisher's Linear Discriminant Analysis
(FLDA) Feature Extraction

pp. 12344-12348(5)

Authors: *Rachmad, Aeri; Anamisa, Devie Rosa; Bintari, Novia Putri*

Face Recognition Based on Gender Using a Modified Method of 2D-Linear
Discriminant Analysis

pp. 12349-12353(5)

Authors: *Damayanti, Fitri; Setiawan, Wahyudi; Herawati, Sri; Rachmad, Aeri*

Generation of Frequent Itemset Using Fuzzy Weighted Tree with Cosine
Similarity

pp. 12354-12358(5)

Author: *Satoto, Budi Dwi*

Lung Cancer Nodule Location Diagnoses Using Linear Vector Quantization
Based on Morphology Process

pp. 12359-12361(3)

Authors: *Haryanto; Ibadillah, Achmad Fiqhi; Aji, Kunto; Rusimamto, Puput Wanarti; Anifah, Lilik*

Information Technology Governance: A Cross Comparison in Public and
Private Sectors

pp. 12362-12366(5)

Author: *Agustiono, Wahyudi*

Integration in Electronic Data Interchange for Environments E-Commerce
Application

pp. 12367-12371(5)

Authors: *Khotimah, Bain Khusnul; Pramudita, Yoga Dwitya; Syakur, Muhammad Ali*

An Ergonomic Intervention Model by Sampling Inspection and Personal
Protective Equipment in SMEs Batik Madura

pp. 12372-12376(5)

Authors: *Agustina, Fitri; Ansori, Nachnul; Yuliatin*

Scheduling of the Certification Process with the Selection of Employees to
Minimize the Completion Time Using Differential Evolution Algorithm

pp. 12377-12380(4)

Authors: *Anna, IkaDeefi; Tamam, Badrud*

Decision Making of Warehouse Location Selection Using Brown-Gibson
Model

pp. 12381-12384(4)

Authors: *Basuki, Ari; Cahyani, Andharini Dwi*

Influence of Knowledge Transfer Effectiveness on Enterprise Resource
Planning System Success in Indonesian Medium-Sized Enterprises

pp. 12385-12388(4)

Author: *Cahyadi, Indra*

Modeling of Air Polluter Standard Index Based on Geographically Weighted
Regression Approach Using Adaptive Bandwidth

pp. 12389-12392(4)

Authors: *Winarso, Kuku; Yasin, Hasbi*

Vehicle Routing Problem Settlement for Supply Chain Network of Batik SMEs
in Pamekasan District Area

pp. 12393-12395(3)

Author: *Akhmad, Sabarudin*

Design Controller Blade Pitch Angle Wind Turbine Using Hybrid Differential Evolution Algorithm-Particle Swarm Optimization
pp. 12396-12399(4)

Authors: *Ulum, Miftachul; Setiadi, Herlambang; Lastomo, Dwi*

Android Base Mobile Banking Security Systems Using the 13 CODIS Deoxyribonucleic Acid (DNA) Verification

pp. 12400-12404(5)

Authors: *Rahmawati, Diana; Melfazen, Oktriza; Umam, Khairul*

Enhancement of Forecasting Value with Quadratic Equation Method on Computer Network Performance

pp. 12405-12408(4)

Authors: *Ubaidillah, Achmad; Kholida, S. Ida*

Feature Extraction and Classification Method for Identification of Batik Cloth

pp. 12409-12412(4)

Author: *Mulaab*

Crude Oil Price Forecasting Using Ensemble Empirical Mode Decomposition and Generalized Regression Neural Networks

pp. 12413-12416(4)

Authors: *Herawati, Sri; Latif, M*

The Control of Home Appliances Using Voice Command Based on Speech Recognition

pp. 12417-12419(3)

Authors: *Latif, M; Dafid, Achmad; Widyaningrum, Vivi Tri; Romadhon, Ahmad Sahru; Wahyuni, Sri*

Pattern Recognition Letters and Numbers Handwriting by Using Backpropagation and Genetic Algorithms Methods

pp. 12420-12423(4)

Authors: *Romadhon, Ahmad Sahru; Budiarto, Hairil*

Determining Best Congestion Threshold Value on Congestion Avoidance Ad Hoc on Demand Distance Vector Reliable Delivery Routing Protocol

pp. 12424-12427(4)

Authors: *Khozaimi, Ach; Suzanti, Ika Oktavia*

Design of Badminton Matches Statistics Center for Monitoring Badminton Players Performances

pp. 12428-12431(4)

Authors: *Putro, Sigit Susanto; Pramudita, Yoga Dwitya*

Optimalization of Detection and Navigation Smart Bin Robot Using Camera

pp. 12432-12436(5)

Author: *Umam, Faikul*

Design of Risk Assessment for Small and Medium Sized Enterprises of Batik Madura

pp. 12437-12439(3)

Author: *Utami, Issa Dyah*

Selected Peer-Reviewed Articles from the International Conference on Health, Pharmacy and Medicine (ICHPM2017), Johor Bahru, Malaysia, 26–27 October, 2017

pp. 12440-12442(3)

Authors: *Perwitasari, Dyah Aryani; Harimurti, Sabtanti; Kusumawati, Wiwik; Da'i, Muhammad; Setiawan, Didik; Nurulita, Nunuk Aries; Hidayat, Abdul Azis Alimul*

Antimicrobial Activity of Lime Juice (*Citrus aurantifolia*) Against *Propionibacterium acnes* and *Staphylococcus epidermidis*

pp. 12443-12446(4)

Authors: *Aini, Nur; Permatasani, Bella; Khasanah, Umi; Sukmawati, Anita*

Determination of Captopril in Rat Plasma by LC-MS/MS in Presence of Apigenin

pp. 12447-12450(4)

Authors: *Siska; Suyatna, Franciscus D; Mun'im, Abdul; Bahtiar, Anton; Priyanto*

Effect of Temulawak (*Curcuma xanthorrhiza* Roxb.) Extract on the MDA Levels and GPx Activity in the Brains of Trimethyltin Induced Dementia Model Rats

pp. 12451-12454(4)

Authors: *Yuliani, Sapto; Prasetya, Didik Yuni; Bachri, Moch. Saiful*

The Effect of Inoculum Concentration on the Growth Profile and Antibacterial Activity of Actinomycete (A6K) Isolates

pp. 12455-12458(4)

Authors: *Ningsih, Ika Maylani; Sulistyan, Nanik*

Diabetes Distress Scale and Treatment Outcome: Perspectives of Clinical and Psychometric Outcome in Diabetic Patients

pp. 12459-12463(5)

Authors: *Perwitasari, Dyah Aryani; Yulistika, Mentari; Faridah, Imaniar Noor; Kulle, Yusuf*

Perception, HbA1c and the Quality of Life of Diabetes Mellitus (T2DM) Patients at RSUD Abdul Azis Singkawang

pp. 12464-12468(5)

Authors: *Faridah, Imaniar Noor; Masyithah, Nurul; Perwitasari, Dyah Aryani*

Risk Factors for Multidrug Resistant (MDR) in Tuberculosis Patients at Public Hospitals in Indonesia

pp. 12469-12473(5)

Authors: *Karuniawati, Hidayah; Sudjono, Tanti Azizah; Utami, Harningtyas Nindya; Pangastuti, Rengganis Ajeng*

The Direct Medical Cost of Diabetes Mellitus Type 2 Therapy on Inpatients of Hospital X Indonesia

pp. 12474-12477(4)

Authors: *Baroroh, Faridah; Urfiyya, Qarriy 'Aina*

Nigella Sativa (Black Seeds) Oil Adjuvant Therapy Decrease on SGOT Activity in Patients at Risk of Metabolic Syndrome Receiving Standard Therapy

pp. 12478-12481(4)

Authors: *Darmawan, Endang; Akrom; Fajar, Desi Reski*

Cost Effectiveness Analysis of Type-2 Antidiabetic Drugs in PKU Muhammadiyah Yogyakarta Hospital, Indonesia

pp. 12482-12485(4)

Authors: *Pertiwi, P; Setiawan, D; Perwitasari, D. A*

Characterization of Chitosan Nanoparticle Containing Combination Doxorubicin and Curcumin Analogue

pp. 12486-12488(3)

Authors: *Sukmawati, Anita; Da'i, Muhammad; Yuliani, Ratna; Anggraeni, Safitri N; Wahyuningsih, Diah*

Antioxidant Effect of Purple Yam Lipstick

pp. 12489-12492(4)

Authors: *Kusuma, Anjar Mahardian; Susmiyatun; Hapsari, Indri*

The Extract of Yellow Pumpkins Seed (*Cucurbita moschata*) Induces Morphological Change in Endometrial Glands of Ovariectomized Rats

pp. 12493-12497(5)

Authors: *Wahyuni, Alfaina; Tasminatun, Sri*

Optimization of Anti-Cancer Gamavuton-0 Synthesis Using Box Behnken Experimental Design

pp. 12498-12501(4)

Authors: *Harimurti, Sabtanti; Widada, Hari; Kadarinah, Sri; Hadi, Ismanurrahman; Wijaya, Didy Putra; Komarudin; Rifai, Maulana Akbar*

Preparation and Antioxidant Activity of Cosmeceutical Creams Containing *Spirulina platensis* and Zinc Oxide Nanoparticles

pp. 12502-12505(4)

Authors: *Wikantyasning, Erindyah Retno; Da'i, Muhammad; Santosa, Agung Beny; Zhelsiana, Devy Anwar*

Effect of Increasing Concentrations of Tween 80 and Sorbitol as Surfactants and Cosurfactants Against the Physical Stability Properties of Palm Oil Microemulsion

pp. 12506-12509(4)

Authors: *Yati, Kori; Amalia, Anisa; Puspasari, Deby*

Effect of Lecithin's Concentration of Entrapment Vitamin E Acetate Liposomes Using Thin Layers Hydration Method

pp. 12510-12513(4)

Authors: *Widayanti, Ari; Elfiyani, Rahmah; Lestari, Dewi*

Anti-Inflammatory Activity of Cream Type O/W with Concentration Variation of Essential Oils of Clove (*Syzygium aromaticum*)

pp. 12514-12517(4)

Authors: *Sugihartini, Nining; Haque, Aina Fatkhil; Yuwono, Tedjo*

Correlation Between Nurses' Job Satisfaction and Motivation, and Nurses' Performance in Indonesia: A Cross Sectional Study in Soewandi Hospital

pp. 12518-12520(3)

Authors: *Hidayat, Abdul Aziz Alimul; Sukadiono; Agustin, Ratna; Ningsih, Ike Sugiarti*

Objective Structure Clinical Examination (OSCE) Based Teaching Material Development

pp. 12521-12523(3)

Authors: *Uliyah, Musrifatul; Hidayat, Abdul Aziz Alimul*

Residential Area as a Contributing Factor to Basal Cell Carcinoma Incidence in Madura Island, Indonesia

pp. 12524-12527(4)

Author: *Primadina, Nova*

Comparison of Energy, Protein, and Iodine Intake of Women of Childbearing Age with Euthyroidism and Hyperthyroidism in Endemic Iodine Deficiency Area

pp. 12528-12531(4)

Authors: *Mutalazimah; Asyanti, Setia*

The Relationship Between Dietary Knowledge and Glycemic Control in Patient with Diabetes Type 2: A Community-Based, Cross-Sectional Study

pp. 12532-12535(4)

Authors: *Rosyid, Fahrur Nur; Supratman; Prasetyo, Tomy Adi; Astutik, Desiana Dwi; Nurseto, Kinasih Bayu; Widyaningtyas, Uswatun Hasanah*

Relationship Between Social Support and Health-Related Quality of Life of Hypertensive Women in Indonesia

pp. 12536-12539(4)

Authors: *Supratman; Rosyid, Fahrur Nur; Prasetyo, Tomy Ady*

Social Support Approach: Development of Nursing Holistic Care Model in Surabaya

pp. 12540-12545(6)

Authors: *Festi, Pipit; Tamsuri, Anas*

Faster Learning Organization (FLO) Model of Transform Strategy Group to Enhance Holistic Nurses Skills

pp. 12546-12549(4)

Author: *Mundakir*

Factors Associated with the Nurse Compliance in Nursing Round Implementation at Siti Khodjijah Hospital

pp. 12550-12554(5)

Authors: *Nasrullah, Dede; Rejeki, Sri; Handayani, Fitria*

The Influence of Audiovisual Media with Dick and Carey Model of Learning Skill Subject on Student's Learning Achievement in the Faculty of Medicine

pp. 12555-12558(4)

Author: *Triastuti, N. Juni*

Modification of the Psychiatric Emergency Patient Acuity Tool Within a Triage System in an Emergency Unit

pp. 12559-12562(4)

Authors: *Pratiwi, Arum; Jadmiko, Arief Wahyudi; Widodo, Arif*

Level of Family Knowledge on Diabetes Mellitus Diet in Yogyakarta

pp. 12563-12567(5)

Authors: *Haris, Fahni; Nugraheni, Aulia Ayu*

Correlation Between Incentives and Nurses' Job Satisfaction in Indonesia: A Cross Sectional Study in Surabaya Husada Utama Hospital

pp. 12568-12570(3)

Authors: *Sukadiono; Agustin, Ratna; Hidayat, Abdul Aziz Alimul; Hanif, Annisah Ulfa*

The Correlation Between Infant Temperament and Sleep Quality of Postpartum Mother in Primary Health Care Prambanan and Jogonalan Klaten Indonesia

pp. 12571-12574(4)

Authors: *Astuti, Yuni; Rachmawati, Imami Nur; Rahma, Hayuni*

The Innovation of Artrihpi Irrigation Wound Cleansing for Decreasing Bacterial Load in the Treatment Diabetic Foot Ulcers: Randomized Controlled Trial

pp. 12575-12579(5)

Authors: *Sutrisno, Resti Yulianti; Gayatri, Dewi; Waluyo, Agung*

The Correlation Between Demographic Data of *Kaders'* to Health Locus of Control Score and the Opinion About Mental Health Services in Indonesia
pp. 12580-12583(4)

Authors: *Wardaningsih, Shanti; Kageyama, Takayuki*

The Effect of Waste Management Training on Entrepreneurship Motivation
pp. 12584-12588(5)

Authors: *Mulasari, Surahma Asti; Tentama, Fatwa*

Validation of the Breast Cancer Awareness Scale Indonesian (BCAS-I) in Yogyakarta, Indonesia

pp. 12589-12593(5)

Authors: *Solikhah, Solikhah; Sangruangake, Monthida; Promthet, Supanee; Hurst, Cameron P*

Professional Behavior Learning by Trigger Film, Self-Reflection and Expert Panel in Medical Education

pp. 12594-12598(5)

Authors: *Kusumawati, Wiwik; Prihatiningsih, Titi S; Rahayu, Gandes R; Sastrowijoto, Soenarto*

Cognitive Therapy Model to Control the Blood Sugar Level for Diabetic Patients in a Community

pp. 12599-12602(4)

Authors: *Muhlisin, A; Pratiwi, Arum; Nurambarwati, Winarsih*

Validity and Reliability of Caring Instrument for Emergency Department; Gadar Caring Scale (GCS-46)

pp. 12603-12606(4)

Author: *Suroso, Jebul*

Empowerment Model of Breastfeeding Mothers in Exclusive Breast Milk Program in Yogyakarta Indonesia

pp. 12607-12612(6)

Authors: *Mufdlilah; Sutisna, Endang; Subijanto, A. A; Akhyar, Muhammad*

The Effectiveness of Walking Exercise and Yoga Training Effect Comparison to Increase Expiration Peak Toward Sleep Quality for COPD (Respiratory) Patients in Respiratory Hospital West Sumatera

pp. 12613-12615(3)

Authors: *Zuriati; Suriya, Melti; Ananda, Yuanita; Achyiar, Novrianti*

College Students' Motivation and Willingness to Pay for Smoking Cessation Services

pp. 12616-12618(3)

Authors: *Dewi, Arlina; Sugiyo, Dianita*

The Effect of the Foot Care Education Program on Knowledge and Self-Efficacy Among Family of Diabetes Mellitus Patients in PKU Muhammadiyah Gamping Yogyakarta Indonesia

pp. 12619-12622(4)

Authors: *Primanda, Yanuar; Putra, Puput Bayu; Soleman, Sitti Rahma; Arba, Wiwi Melianita*

Perceptions of Indonesian Practical Nurses Towards Nursing Competence: A Qualitative Study

pp. 12623-12626(4)

Authors: *Arofiati, Fitri; Nuntaboot, Khanitta*

Positive Spiritual Value of Elderly Diabetics in "Rumah Peduli Diabetes Mellitus"

pp. 12627-12630(4)

Authors: *Binoriang, Dinasti Pudang; Rekawati, Ety; Wiarsih, Wiwin*

Family Support Toward Adherence of Pregnant Woman to Consume Fe Tablets in Puskesmas Gamping 2, Yogyakarta

pp. 12631-12635(5)

Authors: *Indriastuti, Nur Azizah; Alifah, Rizqi Nur*

Exploratory Factor Analysis of the Diabetes Self-Efficacy Scale Among Type 2 Diabetes Mellitus in Thailand

pp. 12636-12640(5)

Authors: *Sangruangake, Monthida; Solikhah, Solikhah; Jirapornkul, Chananya; Hurst, Cameron*

Parental Behavior Based on Parent Knowledge to Give Information About Reproduction Health to Teenagers

pp. 12641-12644(4)

Authors: *Puspita, Dewi; Papatungan, Lisyah Bonita*

The Increased Knowledge of Handwashing on Elementary School Students Due to Education About Handwashing with Donkey Bridge

pp. 12645-12647(3)

Authors: *Kusbaryanto; Rasikhah*

The Impact of Hardiness and Social Support on Work Stress

pp. 12648-12651(4)

Authors: *Tentama, Fatwa; Swastiningsih, Nurfitri; Subardjo*

Differences in Response of *Staphylococcus aureus* Protein to Serum IgG and Secretion of Uterine Cervical s-IgA from Fertile and Infertile Couples Women with Non-Specific Vaginitis

pp. 12652-12655(4)

Authors: *Anas, Muhammad; Aulanni'am, Aulanni'am; Wiyasa, I. Wayan Arsana; Sardjono, Teguh Wahyu; Sumarno*

Gentle Introduction of Generalizability Theory Analysis in OSCE Using EduG
for Medical Educators

pp. 12656-12659(4)

Author: *Setyonugroho, Winny*

Comparison of Root Mean Square of Successive Differences (RMSSD)
Among Adolescent Smokers and Nonsmokers in Yogyakarta

pp. 12660-12664(5)

Author: *Risdiana, Nurvita*

Spatial Memory in Adulthood Rat with Prenatal Hypoxia-Ischaemia

pp. 12665-12669(5)

Authors: *Indriawati, Ratna; Aswin, Soedjono; Partadiredja, Ginus; Susilowati, Rina*

Selected Peer-Reviewed Articles from the 2017 International Conference on
Big Data, IoT, and Cloud Computing (BIC 2017), Jeju, South Korea, 22–24
August, 2017

pp. 12670-12672(3)

Authors: *Yi, Gangman; Kim, Byoungwook*

Construction of Smart Exercise Guide Information System for Supporting
Rehabilitation Training Program

pp. 12673-12677(5)

Authors: *Jeong, Chang Won; Seang, Lypengleang; Joo, Su Chong*

Anti-Plagiarism Systems for Korean Alphabets

pp. 12678-12682(5)

Authors: *Kim, Chae-Reen; Park, JinSoo; Park, Doo-Soon*

Experimental Results of Zooming Speed and Zooming Pattern for IPTV
UI/UX

pp. 12683-12688(6)

Author: *Lee, Samuel Sangkon*

Designing Private LPWAN Gateway

pp. 12689-12692(4)

Author: *Hwang, Kwang-il*

Indexing and Search for a Large Fuzzy Database

pp. 12693-12696(4)

Author: *Cha, Guang-Ho*

Secret Web Browser Structural Designs for Web Service Capsulation

pp. 12697-12702(6)

Authors: *Oh, Changhyun; Kim, Mansik; Jun, Moon-Seog; Kang, Jungho*

A Study on the Design of the System for Security Risk Assessment of the Works for Prevention of Money Laundering at Financial Institutes

pp. 12703-12707(5)

Authors: *Kim, Pilljung; Kim, EunJoo; Park, JaePyo*

A Study on the Derivation of Performance Measurement Items of Public Application Through Survey

pp. 12708-12711(4)

Authors: *Kim, Pilljung; Kim, EunJoo; Park, JaePyo*

Human Action Recognition Using Reproducing Kernel Hilbert Space for Product Manifold of Symmetric Positive Definite Matrices and K-NN Method

pp. 12712-12716(5)

Authors: *Cho, Wanhyun; Kim, Sangkyoon; Park, Soonyoung*

A Regression Analysis for the Prediction of the Food Supply in Livestock

pp. 12717-12720(4)

Authors: *Sivamani, Saraswathi; Shin, Changsun; Park, Jangwoo; Cho, Kyungryong; Cho, Yongyun*

DRM Market System for Media Service Platform Supporting Multi-DRM in Cloud Environment

pp. 12721-12724(4)

Authors: *Cho, Dueckyouun; Hwang, Seogchan; Jeong, Gunho*

Suggestion SSL-VPN for Traffic Signal Control System

pp. 12725-12728(4)

Authors: *Wi, Hansaem; Jang, Chan-Kuk; Lee, Jae-Hoon; Yi, Okyeon*

Proposal of Piecewise Key Management Design Considering Capability of Underwater Communication Nodes

pp. 12729-12733(5)

Authors: *Kim, Hyunki; Lee, Jaehoon; Yi, Okyeon*

Light Source Difference Image for Retrieving 3D Models

pp. 12734-12737(4)

Authors: *Han, Sungjun; Kim, Yongbae; Kim, Jongweon*

Proposal for Pricing Adequacy Evaluation of Public Information System Projects in Lowest-Price Bidding

pp. 12738-12742(5)

Author: *Kim, Seunghee*

Design of a Low Complexity PHY for Close Proximity Point-to-Point Communication at 60 GHz Band

pp. 12743-12747(5)

Authors: *Lee, Jae Seung; Kim, Young-Hoon; Lee, Hoo Sung; Lee, Moon-Sik*

The Collaboration System of a Drone and Ground Vehicles Using QR Code
Detection

pp. 12748-12751(4)

Authors: *Pak, Myeong-Suk; Beck, Jong-Hwan; Kim, Sang-Hoon*

ECDH-Based 3PAKE Protocol for Secure Smart Home Service

pp. 12752-12756(5)

Authors: *Lee, Dae-Hwi; Lee, Im-Yeong*

WSKE: A Web-Scale Spatial Knowledge Extractor

pp. 12757-12761(5)

Authors: *Lee, S; Kim, I*

Measurement of Sleep Data Using Kinect V2 and Thermovision Camera

pp. 12762-12768(7)

Authors: *Seo, Kwi-Bin; Kim, Sung-Yeup; Hong, Min*

Customized Recommendation System Based on Rule Matrix in SaaS
Aggregation Service Platform

pp. 12769-12774(6)

Authors: *Cui, Yun; Kim, Myoungjin; Jung, Jongjin; Kwon, Khongmin; Kim, Baul; Ra, Ilkyeun; Lee, Hanku*

Predicting Flu-Rate Using Big Data Analytics Based on Social Data and
Weather Conditions

pp. 12775-12779(5)

Authors: *Verma, Shikha; Park, Younghee; Kim, Mihui*

Design and Implementation of NAND Simulator for Bit Error Rate Model

pp. 12780-12784(5)

Authors: *Kim, Kijin; Lim, Seung-Ho*

Detection of Malfunction of Gas Sensor Using Principal Component Analysis

pp. 12785-12787(3)

Authors: *Yoon, Ki-Su; Lee, Seoung-Hyeon; Lee, Jae-Pil; Lee, Jae-Kwang*

Effective Identification of Essential Proteins Based on Genetic Algorithm

pp. 12788-12792(5)

Authors: *Liu, Wei; Wu, Qiangmei; Wang, Jin; Chen, Ling*

An Efficient Partially Blind Signature from Pairing for IoT Environment

pp. 12793-12796(4)

Authors: *Lim, Kyung-Soo; Lee, Daewon*

A Robust Deep Learning Based Fault Diagnosis of Rotary Machine Bearings

pp. 12797-12801(5)

Authors: *Sohaib, Muhammad; Kim, Jong-Myong*

A Study on User Modeling Based on Consumer Behavior Pattern by
Consumption Region

pp. 12802-12806(5)

Authors: *Kim, Jinah; Moon, Nammeee*

Towards the Development of Tele-Rehabilitation System Based on Virtual
Reality Environment and Cloud Service

pp. 12807-12811(5)

Authors: *Cha, Y. R; Kim, J. Y; Gu, W. H; Lee, S. A; Jung, B. K*

A Study on the Performance and Influence of Patent Development Strategy
in ICT Convergence Technology Using the Big Data

pp. 12812-12817(6)

Authors: *Cho, Kyeong-Rae; Cho, Su-Been*

Study on Personal Information Leak Detection Based on Machine Learning

pp. 12818-12821(4)

Authors: *Lee, Sangdo; Woo, Hanchul; Shin, Yongtae*

System Providing Air Pollution Information Using LED Sculpture

pp. 12822-12825(4)

Authors: *Lee, Hyunwoo; Yoo, Jihoon; Shin, Dongil; Shin, Dongkyoo*

Self-Organizable Flying Agent Control Architecture for Unmanned Aerial
Vehicles

pp. 12826-12830(5)

Author: *Yeom, Kiwon*

Anti-Inflammatory Effects for Mobile Electronic Patient Charts Using
Numerical Modeling of IoT

pp. 12831-12834(4)

Authors: *Lee, Deok Gyu; Lee, In-Chul*

Design and Implementation of an Application with File Encryption for Cloud
Storage

pp. 12835-12838(4)

Authors: *Sohn, Minseok; Won, Yoojae*

Enhancement of Forecasting Value with Quadratic Equation Method on Computer Network Performance

by s Ida Kholida 2

Submission date: 21-Nov-2020 12:16PM (UTC+0700)

Submission ID: 1453084181

File name: Paper_UTM026_IJCST2016_Ubaidillah.docx (345.42K)

Word count: 2517

Character count: 13332



All rights reserved Vol. XXXXXXXXX
Printed in the United States of America

Copyright © 2016 American Scientific Publishers Advanced Science Letters

Enhancement of Forecasting Value with Quadratic Equation Method on Computer Network Performance

Achmad Ubaidillah^{1*}, S. Ida Kholida²

¹Telecommunication of Electrical Engineering Departement, University of Trunojoyo Madura, Kamal, Bangkalan, East Java, Indonesia
²Physics Education, Madura Islamic University, Pamekasan, Madura, East Java, Indonesia

Quadratic equation formula is suitable to be used as forecasting method on computer network performance because they have similar characteristic especially in the form of graph. The performance of this forecasting can be enhanced with wide possibility. This paper proposes to enhance the forecasting value of quadratic equation method of computer network performance especially by choosing the most appropriate input values that optimize and enhance the forecast accuracy. The result of this research shows that the choosing input value with the lowest up and the highest down value (M2) produces the best and the most optimal forecasting value with error standard deviation 80. While the choosing input value with random up and down value (M1) produces error standard deviation 370, the highest up and the lowest down value (M3) produces error standard deviation 227, and the mean of up and down value (M4) produces error standard deviation 230.

Keywords : Enhancement Forecasting value, Computer Network Performance, Quadratic Equation

1. INTRODUCTION

Computer network is widely used by almost all people from all level in the world. It gives challenge to the computer network service provider in giving best service to the subscribers. So the computer network service provider has to maintain the performance of it by planning, observing and evaluating continually. It becomes very important especially to face the increasing of computer network users with still serves the reliable network to them¹. The research activities of planning, observing and evaluating the network performance are widely done and published at many journal. For example, the research of Nasri S.¹² that makes QoS metric model especially based on total delay and packet loss as metrics with Calculus Theory approach on chip modeling architecture. The research of Dhobale J.V., et. al.^{4,5,6} makes simulation of computer network performance using OMNET++ with data packet size, data rate and number of clients per server as metrics and then makes analysis and evaluation from it.

Beside doing observation and evaluation, the maintenance efforts of good computer network performance can be applied by improving or optimizing and forecasting the network performance. In improving and optimizing the network performance, the research of Cheng W., et. al.¹³ proposes some recommendations of network performance improvement based on QoS changes. Ar Reyouchi E.M., et. al.⁷ proposes to improve end to end delay of network management system using network coding. In forecasting network performance, the research of Cortez P., et. al.¹⁰ makes forecasting of the multi-scale internet traffic using Neural Network, ARIMA and Holt Winter, while the research of Hoong P.K., et. al.¹¹ uses ARMA to forecast network traffic.

Other advance step to plan good computer network performance is how to improve and enhance the forecast result⁹. There are many ways to improve and enhance forecast result and forecast accuracy, for example improving the input data³. The research of Leau Y.B. and Manickam S.¹⁴ proposes to enhance prediction capability of Grey Verhulst model using enhanced adaptive Grey Verhulst prediction model in incoming network security situation.

In the same mindset with that description, this research was started from Ubaidillah A., et. al.¹ that proposes to forecast the computer network performance using Linear and Multi Linear Regression Method. The main problem of the research is the linearity of forecast result. While computer network performance has non-linear characteristic of graph. In other word, it is not appropriate to use linear forecasting for computer network performance that has parabolic characteristic. The research of Ubaidillah A. and Kholida I.² proposes to improve the minus side of the earlier research¹. It uses Quadratic Equation to forecast computer network

performance. The main reason is both of them has same parabolic characteristic of graph. As the advance next step, forecast result can be enhanced especially it's accuracy. One of the ways to enhance the forecast result and accuracy is improving it's input data. This research proposes to enhance it by choosing the most appropriate input values that optimize and enhance the forecast accuracy.

2. FORECASTING METHOD WITH QUADRATIC EQUATION FORMULA

There are many methods that that can be used as forecasting method. Generally, they are linear and non-linear method. The linear method is appropriate to be used in linear cases or cases that the output value increases as the increasing of the input value. While non-linear method is appropriate to be used in non-linear cases. Quadratic Equation Formula is included into non-linear forecasting method because it produces parabolic graph.

The main formula of Quadratic Equations⁸,

$$y = ax^2 + bx + c \quad (1)$$

There are some steps to make (1) to become forecast formula. The first, take 3 points coordinate (x1,y1), (x2,y2) and (x3,y3), where (x1,y1) is sample of coordinate before peak value, (x2,y2) is sample of coordinate at peak value and (x3,y3) is sample of coordinate after peak value. Then, obtain 3 equations in a, b and c by making substitution the 3 samples to (1). Compute the 3 equations with elimination and substitution method to obtain the values of a, b and c. Obtain a new Quadratic Equation with a, b and c, then it can be used as forecasting method.

Error calculations of this paper are RMSE (Root Mean Square Error) that is implemented as standard deviation of the error.

$$MSE = \left[\frac{\sum_{i=1}^n e_i^2}{n-2} \right] \quad (2)$$

$$Se = \sqrt{MSE} \quad (3)$$

MSE : Mean Square Error

Se : Unbiased of error standard deviation

3. METHODOLOGY

This paper is the next research of Ubaidillah A. and Kholida I.². It means, the forecast data that will be computed in this research is from it. The data that will be computed is taken from simulation result of bottle neck computer network performance as shown in figure-1. The simulation result graph is shown in figure-2, and figure-3. The computer network performance of simulation result is depicted as a relationship between number of sent packet as input data to throughput at node 3 as output data and it is shown in table-1.

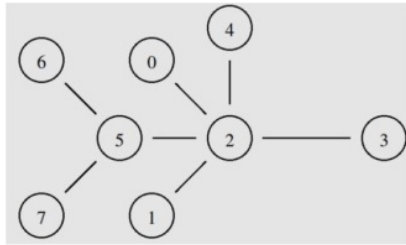


Fig-1. Simulation topology of bottle neck computer network system that is observed

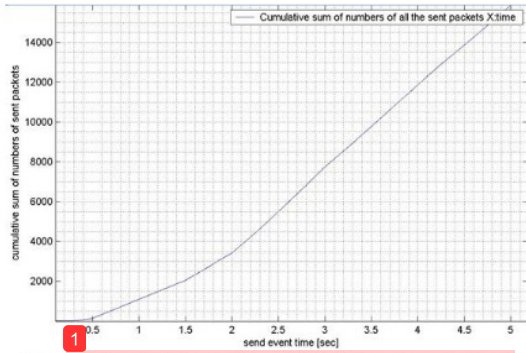


Fig-2. Graph of event time to total sent packets of simulation result

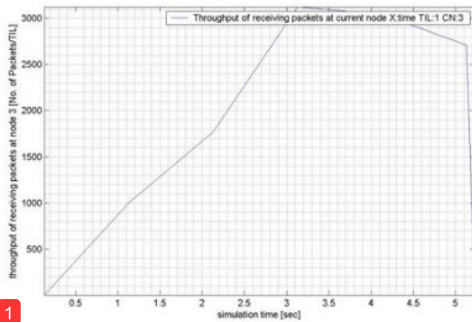


Fig-3. Graph of event time terminal throughput in node 3 of simulation result

From input and output data of table-1, 3 samples of coordinate (x,y) are chosen to be computed until a, b and c are obtained. Then they are used to form the forecasting formula of Quadratic Equation. This research proposes to enhance the forecast accuracy of Quadratic Equation method by choosing one of four rules in finding the most appropriate input values. They are :

- M1 : Random up and random down
- M2 : The lowest up and the highest down
- M3: The highest up and the lowest down
- M4 : Mean of up value and mean of down value

Table 1. Samples of network performance of the simulation and the forecasted value with Linear Regression method

Sent_Pckt (Packets)X	Throughtput (Packets/second)Y
305	370
1230	890
2215	1297
3490	1680
5510	2295
7750	2944
9726	3102
11981	3005
13833	2928
15752	2720

Then, four Quadratic Equations are obtained from the four rules, and they are used in the forecasting. The final step is to compute the error standard deviation of each forecast result. Then the most appropriate rule that can improve and enhance the forecast accuracy is known.

4. RESULT

The research computational result is shown in table-2.

Table-2. The 3 samples of chosen coordinate, Quadratic Equation and error standard deviation of each rule of choosing input value.

INPUT TYPE	(x ₁ ,y ₁)	(x ₂ ,y ₂)	(x ₃ ,y ₃)	QUADRATIC EQUATION
M1	(5510, 2295)	(9726, 3102)	(13833, 2928)	$y = -0,000031x^2 + 0,66373x - 442,5$
M2	(305, 370)	(9726, 3102)	(15752, 2720)	$y = -0,00002298x^2 + 0,5196x + 214$
M3	(7750, 2944)	(9726, 3102)	(11981, 3005)	$y = -0,00002907x^2 + 0,5879x + 133$
M4	(3417, 1579)	(9726, 3102)	(13855, 2884)	$y = -0,00002817x^2 + 0,6116x - 181$

Input type M1, M2, M3 and M4 are rules of choosing input value. M1 means the rule to choose input data with random before peak and random after peak. M2 is for the rule to choose input data with the lowest value

before peak and the highest value after peak. M3 is for the rule to choose input data with the highest value before peak and the lowest value after peak. While M4 means the rule to choose input data with the average value before peak and the average value after peak. Where (x_1, y_1) is sample of coordinate before peak value, (x_2, y_2) is sample of coordinate at peak value and (x_3, y_3) is sample of coordinate after peak value.

The column of Quadratic Equation of table-2 is quadratic equation formula that is raised from the computational result of coefficient a, b and c of each rule. Then the four quadratic equation are used in forecasting the computer network performance. And Se is the error standard deviation of forecast result.

5. DISCUSSION

The first discussion is about which rule (M1, M2, M3 or M4) that obtains the best accuracy of forecast result. The accuracy quality of forecast value in this paper is determined from the error standard deviation value of the forecast results. The decreasing of the error standard deviation value (Se) causes the forecast accuracy quality to be better. While the increasing of the error standard deviation value (Se) causes the forecast accuracy quality to be worse.

For the case of this research, M2 with the rule in choosing input data is the lowest value before peak and the highest value after peak, obtains the best accuracy of forecast value with $Se = 80$ or the lowest one if it is compared with the others. M3 with $Se = 227$ and M4 with $Se = 230$ are the second and the third in sequence. While M1 with $Se = 370$ is the worst. It can be analyzed first, because the chosen input data of M2 is extremely the lowest before peak value and extremely the highest after peak value. It means that its quadratic equation construction can cover other input data. So, it can forecast other input data automatically more accurate than the others. While the quadratic equation construction of M3 and M4 can not cover all input data, especially the lower input data before peak value and the higher input data after peak value. As the result, it causes the possibility of error greater than M2 and worse in forecast accuracy. While the forecast accuracy of M1 is the worst because its random effect of the chosen input data.

Other discussion of the research result is correlation of the coefficient a and b to error standard deviation Se. Coefficient is gain factor of variable. It means that coefficient gives direct influence to variable. Shown in table-2 that M1 obtains the smallest coefficient $a = -0,000031$ and the greatest coefficient $b = 0,66373$, and it results the greatest Se or the worst accuracy of forecast value. M2 obtains the greatest coefficient $a = -0,00002298$ and the smallest coefficient $b = 0,5196$, and it results the smallest Se or the best accuracy of forecast value. While M3 and M4 obtain coefficients a and coefficient b between M1 and M2. As the result, their forecast value

accuracy are also between M1 and M2. In other word, they are better than M1 but worse than M2. Beside that, the coefficient a of M3 is smaller than M4, but the coefficient b of M3 is also smaller than M4. So, they have almost same Se. The correlation graph of coefficient a and coefficient b to error standard deviation of the forecast value is shown by figure-4 and figure-5.

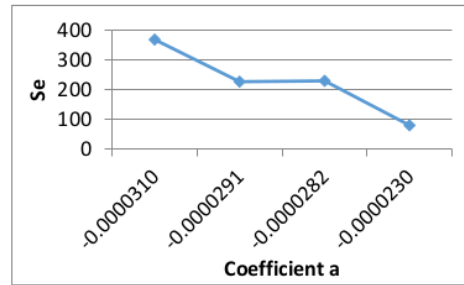


Fig-4. The correlation of coefficient a of quadratic equation for forecasting to error standard deviation of forecast value

figure-4 describes that the error standard deviation value of forecast result leans to decrease linearly as the increasing of coefficient a. As a notice, all the value of coefficient a in this paper are negative. In the opposite, if that values are positive, than it will increase as the increasing of coefficient a. While figure-5 describes that the error standard deviation value of forecast result leans to increase linearly as the increasing of coefficient b.

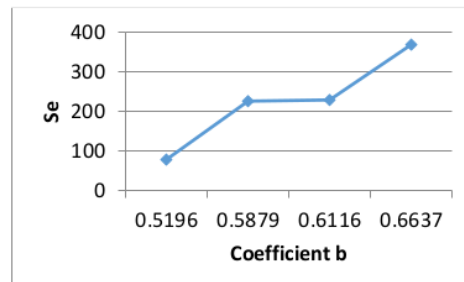


fig-5. The correlation of coefficient b of quadratic equation for forecasting to error standard deviation of forecast value

6. CONCLUSION

From the discussion, the conclusion is M2 obtains the best accuracy of forecast value because its quadratic equation construction can cover all other input data. So, it can forecast other input data automatically more accurate than M1, M3 and M4.

The second point is about correlation of coefficient a and b to error standard deviation of forecast value Se. In the case of positive value, the greater

coefficient of forecasting quadratic equation causes increasing in Se, so the Se is getting worse. while in the case of negative value, the greater coefficient of forecasting quadratic equation causes decreasing in Se and it causes the Se is getting better.

REFERENCES

- [1] Ubaidillah A., Joni K., **1**um M., Haryanto, Rahmawati D., Alfita R., (2014). Forecasting of Computer Network Performance with Linear and Multi-Linear Regresion Method, Journal FORTEI.
- [2] Ubaidillah A., Kholida I., (2016). Forecasting of Computer Network Performance with Quadratic Equation, Journal MATEC, Web of Conferences 58, 03004
- [3] Catal C., Fenerci A., Ozdemir B., Gulmez O., (2015). Improvement of Demand Forecasting Models with Special Days, International Conference on Computer Science and Computational Intelligent 59 : 262-267
- [4] Dhobale J.V., Kalyankar N.V., Khamitkar S.D., (2014). Computer Network Performance Evaluation Based on Different Data Packet Size Using OMNET++ Simulation Environment, IJARCST vol. 2, issue 2, ver. 1, ISSN: 2347-9817
- [5] Dhobale J.V., Kalyankar N.V., Khamitkar S.D., (2014). Computer Network Performance Evaluation Based on Network Scalability Using OMNET++ Simulation Environment, International Journal Advanced Networking and Application vol. 5, issue 5, ISSN: 0975-0290
- [6] Dhobale J.V., Kalyankar N.V., Khamitkar S.D., (2014). Computer Network Performance Evaluation Based on Data rate and Number of Clients Per Server Using OMNET++ Simulation Environment, GJCST-E, vol. 14, issue 3, ver. 1.0, ISSN: 0975-4172
- [7] Ar Reyouchi E.M., Ghoumid K., Ameziane K., El Mrabet O., (2013). The Improvement of End to End Delays in Network Management System Using Network Coding, IJCNC vol. 5, no. 6
- [8] Frank A.Jr., (2006). Schaum : University Mathematics (Third Edision), Erlangga
- [9] Armstrong J.S., (2005). The Forecasting Canon : Nine Generalizations to Improve Forecast Accuracy, Foresight, International Journal of Applied Forecasting, Volume 1 Issue 1
- [10] Cortez P., Rio M., Rocha M., Sousa P., (2012). Multi-Scale Internet Traffic Forecasting Using Neural Network and Time Series Methods, Expert System vol. 29, no. 2
- [11] Hoong P.K., Tan I.K.T., Keong C.Y., (2012). Bit Torrent Network Traffic Forecasting with ARMA, IJCNC vol. 4, no. 4
- [12] Nasri S., (2011). Network on Chip : A New Approach of QoS Metric Modeling Based on Calculus Theory, IJCNC vol. 3, No. 5
- [13] Sugeng W., Istiyanto J.E., Mustofa K., Ashari A., (2015). The Impact of QoS Changes Towards Network Performance, IJCNC vol. 3, no. 2, E-ISSN: 2308-9830
- [14] Leau Y.B., Manickam S., (2016). An Enhanced Adaptive Grey Verhulst Prediction Model for Network Security Situation, International Journal of Computer Science and Network Security, Vol. 16 No. 5

Enhancement of Forecasting Value with Quadratic Equation Method on Computer Network Performance

ORIGINALITY REPORT

15%

SIMILARITY INDEX

12%

INTERNET SOURCES

13%

PUBLICATIONS

1%

STUDENT PAPERS

PRIMARY SOURCES

1

www.matec-conferences.org

Internet Source

11%

2

A Ubaidillah, R Alfita, Toyyibah. "Link Power Budget and Traffict QoS Performance Analysis of Gygabit Passive Optical Network", Journal of Physics: Conference Series, 2018

Publication

2%

3

repository.ubaya.ac.id

Internet Source

1%

4

Achmad Ubaidillah, S. Ida Kholida. "Forecasting of Computer Network Performance with Quadratic Equation", MATEC Web of Conferences, 2016

Publication

1%

5

Submitted to Universitas Negeri Surabaya The State University of Surabaya

Student Paper

1%

Exclude quotes On

Exclude matches

< 15 words

Exclude bibliography On