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Table of contents

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+ Open abstract   ▤ View article   📄 PDF

OPEN ACCESS   011002

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+ Open abstract   ▤ View article   📄 PDF

Chemical physics and physical chemistry

OPEN ACCESS   012001

Temperature Effects on Plasma Li-heparin and Transaminase Activity in Children Blood with Tetralogy of Fallot

F Fadhilah, I Rahmawati, N Anggraeni and S A Riyadi

+ Open abstract   ▤ View article   📄 PDF

OPEN ACCESS   012002

Optimization of Polyethylene Glycol Concentration as an Agglutination Potentiator for Examination of Blood Types of Dry Blood Sample

R Handriani, G M Warouw and A Oktari

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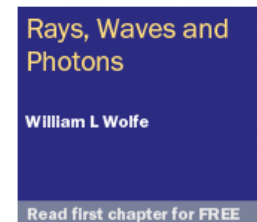**OPEN ACCESS**   012003

Stability Test of Colouring Agent from Pericarpium of Red Dragon Fruit (*Hylocereus Polyrhizus*) Extract in Laboratory Diagnostic of Intestinal Nematode Eggs Preparation

H. Syafrullah, Y. Supriatin, E. Yuliani and N. Aurora

+ Open abstract   ▤ View article   📄 PDF

OPEN ACCESS   012004

Evaluation of Roselle (*Hibiscus sabdariffa* L.) Calyx Extract Stability for Intestinal Nematode Egg Staining

N Vanawati, A Oktari and TY Febriani

+ Open abstract   View article   PDF

OPEN ACCESS   012005

Differences of Bio (Chemical) Characterization of Garlic and Black garlic on Antibacterial and Antioxidant Activities

Lia Siti Halimah and Khomaini Hasan

+ Open abstract   View article   PDF

OPEN ACCESS   012006

The Relationship of Self-Efficacy with Adherence in Restricting Fluid Intake in Middle Adult Hemodialysis Patients

N Gartika, E Setiawati and Y Hidayat

+ Open abstract   View article   PDF

OPEN ACCESS   012007

Optimum Combination of Alphamangostin-Dihydroartemisinin in Vitro as Antimalaria

S Tjahjani, D Syafruddin and R Tjokropranoto

+ Open abstract   View article   PDF

OPEN ACCESS   012008

The variation of ethanol concentration and kombucha characterization on several incubation periods

Nisa Ihsani, Nelis Hernahadini and Muhammad Fauzi

+ Open abstract   View article   PDF

OPEN ACCESS   012009

Antioxidant Activity Of 70% Ethanol Extract Combination Of Kemangi Leaf (Ocimum Americanum Linn) and Binahong Leaf (Anredera cordifolia (Ten.) Steenis) Using DPPH

Herson Cahaya Himawan, Achmad Fauzi Isa and Dena Sapira Wiharja

+ Open abstract   View article   PDF

OPEN ACCESS   012010

Analysis of Drug Effectiveness and Efficiency of Use of Amlodipine-Captopril Combination Compared to Amlodipine-Valsartan in the X Hospital Patients of Bogor

Ferry Effendi, Sri Septiani and Leny Fitri Lubis

+ Open abstract   View article   PDF

OPEN ACCESS   012011

The Best Pasteurization Method in Reducing the Amount of Bacteria in Cow's Milk on People Dairy Farm

E N Nawangsih, I I Rahmat, L S Halimah and D N Hidayat

+ Open abstract   View article   PDF

OPEN ACCESS   012012

Comparison of Drug Induced Hepatotoxicity Incident of Fixed-Dose Combination and Separate Formulations Regimen for Pulmonary Tuberculosis Treatment in Hospital Sukabumi

Silvi Nurafni, Novita Sari and Feni Mulyani

+ Open abstract   View article   PDF

OPEN ACCESS   012013

Antioxidant Activities from Two Varieties of Pear Peel Extracts using DPPH and CUPRAC

Methods

V M Patricia and F N Syaputri

Simplex Lattice Design Analysis for Optimizing the *Sangketan* Extract (*Achyranthes aspera*) production

Zaenal Fanani, Endang Setyowati and Ria Etikasari

+ Open abstract　　　📄 View article　　　📄 PDF

　　　　　　　　　　　　　　　　　012023

Effect of Boiling Time on Content of The Total Flavonoid of Kitolod (*Isotoma longiflora* (L.) C. Presl.)

Muchson Arrosyid, Choiril Hana Mustofa, Sutaryono and Alifiasri Praptiwi Rohmah

+ Open abstract　　　📄 View article　　　📄 PDF

　　　　　　　　　　　　　　　　　012024

Test of Antibacterial Activity 70% Ethanol Extract of Seeds Black Pepper (*Piper Nigrum* L) Against Bacteria *Escherichia Coli* Atcc 25922

Arina Zulfah Primananda, Laksmi Anggun and Rika Murhayati

+ Open abstract　　　📄 View article　　　📄 PDF

　　　　　　　　　　　　　　　　　012025

Test Of Analgesic And Antiinflamation Effect Of Ethanol 70% Extract Red Gedi Leaves (Abelmoschus manihot (L.) Medik.) From Palu On White Rat (Rattus novergicus)

A Nur and B Tjiroso

+ Open abstract　　　📄 View article　　　📄 PDF

　　　　　　　　　　　　　　　　　012026

In Vitro Evaluation of The Inhibitory Power of *Trichoderma harzianum* Against Pathogens that Cause Anthracnose in Chili

Sutarman, A Miftahurrohmat, IR Nurmalasari and AE Prihatinnigrum

+ Open abstract　　　📄 View article　　　📄 PDF

　　　　　　　　　　　　　　　　　012027

Stomata as a Differentiator of Nepenthes Type in North Sumatera

Nurmaini Ginting, Melvariani Syari Batubara, Abubakar, Muhammad Darwis and Fatma Suryani Harahap

+ Open abstract　　　📄 View article　　　📄 PDF

　　　　　　　　　　　　　　　　　012028

Isolation Bacteria Producing α-Amylase from Black Soldier Fly larvae (*Hermetia illucens*) L.

Luthfia Hastiani Muharram, Nelis Hernahadini and Muhammad Fauzi

+ Open abstract　　　📄 View article　　　📄 PDF

　　　　　　　　　　　　　　　　　012029

Improving plastic degradation by increasing the thermostability of a whole cell biocatalyst with LC-cutinase activity

Maelita Ramdani Moeis and Muhammad Farhan Maulana

+ Open abstract　　　📄 View article　　　📄 PDF

　　　　　　　　　　　　　　　　　012030

Method validation of As, Cd, Cr, Cu, Mn, Ni, Se, and Zn metals in Citarum River sediment using Inductively Coupled Plasma – Optical Emission Spectroscopy (ICP-OES)

T A Koesmawati, S Tanuwidjaja and A Nurachman

+ Open abstract　　　📄 View article　　　📄 PDF

　　　　　　　　　　　　　　　　　012031

The Use of Ethanol as an Alternative Solvent to Replace 2-Propanol in the Determination of Total Acid Number in Lubricant by Potentiometric Titration

E Yuliani and W Permana

+ Open abstract   📄 View article   📄 PDF

012032

The Proportion of Moringa and Cassava Leaves on the Chemical and Sensory Properties of Chicken Nuggets

S A Prayitno and A R Rahim

+ Open abstract   📄 View article   📄 PDF

012033

Antioxidant Activity and Total Phenolic Compounds of Arabica and Robusta Coffee at Different Roasting Levels

Umar Hafidz Asy'ari Hasbullah and dan Rini Umiyati

+ Open abstract   📄 View article   📄 PDF

012034

Optimization Process In The Synthesis of Stannous Chloride ($SnCl_2$) by Redox Method In The Context of Downstream Tin Derivative Product

Nurul Wulandari, A S Wismogroho, W B Widayatno, M I Amal and D Y Kusuma

+ Open abstract   📄 View article   📄 PDF

012035

Analysis Of Organoleptic And Coliform Value In Fresh Mackerel (*Rastrelliger* Sp.) Fish In Tpi Sorong City

Sukmawati Sukmawati, Iksan Badaruddin, Nurul Kusuma Dewi, Nurbaity Situmorang, Mahfut Mahfut and Fery Mustapa

+ Open abstract   📄 View article   📄 PDF

Computational science

012036

The Change of Fruit Supply Chain in Response to Covid-19 Pandemic in West Java, Indonesia (Case Study of Anto Wijaya Fruit)

Agustina Widi, Erin Diana Sari and Siti Jahroh

+ Open abstract   📄 View article   📄 PDF

012037

Business Development Strategy Through Value Creation Analysis in Automotive E-Commerce Platform (Case Study: XYZ Platform)

Maria Jacklyn Brilyani Putri Patty, Popong Nurhayati and Fuad Wahdan Muhibuddin

+ Open abstract   📄 View article   📄 PDF

012038

Proposed a New Sustainable CSR Model Canvas for Effectiveness and Evaluation of Current CSR Programs (Case Study: PD PAL Jaya)

Aqira Pakuanzahra, Noer Azam Achsani and Asadudin Abdullah

+ Open abstract   📄 View article   📄 PDF

012039

Re-Food: Digital Platform-based Innovation Solutions for National Food Waste Problems

Rafi Yoga Pramana, Achmad Fadillah and Arief Daryanto

+ Open abstract   📄 View article   📄 PDF

Computer Science

012040

Hybrid Algorithm as alternative method for optimization, a combination Genetic Algorithm and Particle Swarm Optimization

Taufan Mahardhika

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012041

On the numerical solution of Burgers-Fisher equation by the Strang Splitting Method

D. A. Hamzah and M. C. Aprianto

+ Open abstract   📄 View article   📕 PDF

012042

Implementation of Mathematics Learning-Assisted Cabri 3D Software to Improve Spatial Ability of High School Students on Three Dimensional Geometry

R Yuliardi, A Mahpudin and A Rosyid

+ Open abstract   📄 View article   📕 PDF

012043

Lean Six Sigma Analyst in Packing House Lembang Agriculture Incubation Center (LAIC)

Afferdhy Ariffien, Irayanti Adriant and Juli Amirah Nasution

+ Open abstract   📄 View article   📕 PDF

012044

Analysis of Raw Material Inventory Planning Considering Uncertainty Demands (Case Study: Model Q with Back Order at PT. X)

Nurlaela Kumala Dewi, Irayanti Andriant and Julia Loren

+ Open abstract   📄 View article   📕 PDF

012045

Eclectic approach as idea of *e-educounseling* preliminary system model

Jumail, M F Noordin, N M Ibrahim, R Mujastuti and R D Risanty

+ Open abstract   📄 View article   📕 PDF

012046

Natural partial order on semigroup partial linear transformation with restricted range

A I A Himayati and M A Prasetyanto

+ Open abstract   📄 View article   📕 PDF

012047

The comparison of accuracy between naïve bayes clasifier and c4.5 algorithm in classifying toddler nutrition status based on anthropometry index

A Ridwan and T N Sari

+ Open abstract   📄 View article   📕 PDF

012048

Comparison of NB and NB-PSO to determine level of vehicles sales

I Romli, E Pusnawati, M Jaenal and A Siswandi

+ Open abstract   📄 View article   📕 PDF

012049

Analysis of contrast limited adaptive histogram equalization (CLAHE) parameters on finger knuckle print identification

F M Hana and I D Maulida

+ Open abstract   📄 View article   📄 PDF

Transforming the Baitul Maal Wal Tamwil Business Model through the Patform Design Model

Fitri Nur Latifah, Masruchin, Bayu Wardhana, Eris Dwi Retno and Lela Monika

+ Open abstract   📄 View article   📄 PDF

The Role of Electronic Customer Relationship Management (E-CRM) In Improving Service Quality

Ahmad Zaelani Adnan, Agus Rahayu, Heny Hendrayati and Ramayani Yusuf

+ Open abstract   📄 View article   📄 PDF

Analysis of the Impact of using Syariah Bonds (Sukuk) and Conventional Bonds on Stock Returns for Investors in Indonesia: Study of Manufacturing Companies Listed on the IDX in the year 2015-2017

I. Dian Rahmawati, N. Qudus.SN and R Dian Pertiwi

+ Open abstract   📄 View article   📄 PDF

Analysis of Competitive Strategy to Create Sustainable Competitive Advantages Seen From the Nine Factor Model and Bacos Treacy Model

Nur Hayati, Evan Jaelani, Dani Sopian and Intan Pramesti Dewi

+ Open abstract   📄 View article   📄 PDF

Natural Disaster Mitigation Management in the case of Mount Tangkuban Parahu Eruption in West Java

Iis Dewi Fitriani, Wandy Zulkarnaen and Agus Bagianto

+ Open abstract   📄 View article   📄 PDF

Viral Marketing Strategies through Social Media of Interesting Visitor (Case Study Cafes Instagramable in Bandung)

Ulfa Yuniati, Nora Meilinda Hardi and Intan Primasari

+ Open abstract   📄 View article   📄 PDF

Computerized Text Analysis on Self-Description Text to Get Student's Prevailing, Confidence, and Drives

TA Syah, A Nurhayaty and S Apriyanto

+ Open abstract   📄 View article   📄 PDF

On The Locating Rainbow Connection Number of A Graph

Ariestha Widyastuty Bustan, A.N.M. Salman and Pritta Etriana Putri

+ Open abstract   📄 View article   📄 PDF

Wireless Scoreboard Technology Architecture for Athlete Performance Data Warehouse at

Wireless Scoreboard Technology Architecture for Athlete Performance Data Warehouse at Multiple Table Sports Games

Estiyan Dwipriyoko, Widjajani, Wahyu Purnama Sari and Mujiarto

+ Open abstract   🗎 View article   📄 PDF

012068

Design and Implementation of Computer Based Test (CBT) in vocational education

Raimon Efendi, Lido Sabda Lesmana, Firmansyah Putra, Efri Yandani and Ratih Agustin Wulandari

+ Open abstract   🗏 View article   📄 PDF

012069

Implementation of Natural Language Processing in Seller-bot for SMEs

Sutadi Triputra and Firas Atqiya

+ Open abstract   🗏 View article   📄 PDF

012070

Edge Detection to Make Drawing Sketch using Laplacian Operator and Gabor Wavelet for Learning Devices

Samsir, Firman Edi, Kalvin Ginting, Srie Hartati, Sondang and R A Purba

+ Open abstract   🗏 View article   📄 PDF

012071

Usage Behavior on Digital Wallet: Perspective of the Theory of Unification of Acceptance and Use of Technology Models

Sukaris Sukaris, Wiki Renedi, Maulidyah Amalina Rizqi and Budiyono Pristyadi

+ Open abstract   🗏 View article   📄 PDF

012072

M-Bonk Based E-Participation in Street Infrastructure Development

Totok Wahyu Abadi, Wahyu Pratama Putra, Ilmi Usrotin Choiriyah and B A. Riyadh Umar

+ Open abstract   🗏 View article   📄 PDF

012073

Diction on the Tantan Application: A Semantic Study

Nina, Yulia Adiningsih, Yusuf Heriyanto and Musaljon

+ Open abstract   🗏 View article   📄 PDF

012074

PPDB Online As Innovation of Education Services

Lailul Mursyidah, Isnaini Rodiyah and Hafidz A'inur Ramadhan

+ Open abstract   🗏 View article   📄 PDF

012075

The Development of Teaching Material For Popular Writing Based On Creative Industry Using M-Learning For College Students of Faculty of Language and Literature

Siti Ansoriyah

+ Open abstract   🗏 View article   📄 PDF

012076

Estimation of Biresponse Multipredictor Model using Local Linear Estimator in Case of Scholastic Aptitude and Islamic Tests Modeling

Nidhomuddin, N Chamidah and A Kurniawan

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012077

Modelling Scholastic Aptitude Test of State Islamic Colleges in Indonesia using Least Square Spline Estimator in Longitudinal Semiparametric Regression

M Setyawati, N Chamidah and A Kurniawan

+ Open abstract   📄 View article   📄 PDF

Education and communication

OPEN ACCESS   012078

Student Perceptions of Online Quiz as a Supporting Tool in Learning Chinese

Xuc Lin and Mariana

+ Open abstract   📄 View article   📄 PDF

OPEN ACCESS   012079

Utilization of ICT-Based Learning Media in Local History Learning

Bahri, Humaedi, Rizal, Mahfud M. Gamar, Misnah and Andi Dewi Riang Tati

+ Open abstract   📄 View article   📄 PDF

OPEN ACCESS   012080

Design of Megalite Site As a Source of Learning for Youtube Multimedia Based Students

Nuraedah and Misnah

+ Open abstract   📄 View article   📄 PDF

OPEN ACCESS   012081

The Effect of Massively Multiplayer Online Game on Player Behaviour

Runik Machfiroh, Aris Rahmansyah and Arief Budiman

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OPEN ACCESS   012082

Introduction of traditional lebak musical instruments through aplikasi android for early childhood

Eka Setiawati, Dentik Karyaningsih, SuciAprilyati Ruiyat, Hadi Sutiawan, Iman Sampurna and Eneng Sri Susilawati

+ Open abstract   📄 View article   📄 PDF

OPEN ACCESS   012083

The improvement of Chemistry Learning Outcomes of MAN 1 Cirebon City Student On the Material Structure of the Atom-Based Qurani Students Worksheet (LKPD)

Dewiantika Azizah, Evi Fidawati and Aliet Noorhayati Sutisno

+ Open abstract   📄 View article   📄 PDF

OPEN ACCESS   012084

The Development of Video Learning Based on Videoscrieb Application For Social Science inPrimary School

Usmaedi, Dede Kurnia Adiputra, Tjut Afrida, Ade Eka Anggraini, Puji Siswanto, Aan Subhan Pamungkas, Deri Hendriawan and Dentik Karyaningsih

+ Open abstract   📄 View article   📄 PDF

OPEN ACCESS   012085

Implementation of Examles Non Examples in the Development Site Material in of *Megalithic* Lore Lindu Central Sulawesi for Student of Tadulako University, Indonesia

Misnah, Hamlan Andi Baso Malla, Bau Ratu and Bahri

+ Open abstract   📄 View article   📄 PDF

OPEN ACCESS   012086

Development of Vocational Learning Video Based on Local account in PKN Learning in Elementary School

Elementary School

Dede Kurnia Adiputra, Dentik Karyaningsih, Suci Aprilyati Ruiyat, Yadi Heryadi, Iman Sampurna and Elih Solihatulmillah

+ Open abstract   📄 View article   📕 PDF

     012087

Learning Materials Based On Digital Art Student Creativity in Universitas Muhammadiyah Tapanuli Selatan

Rizky Ariaji, Ahmad Husein Nasution, Andes Fuady Dharma Harahap, Abubakar, Sahlan Tuah, Darwis and Lelya Hilda

+ Open abstract   📄 View article   📕 PDF

     012088

Benefits of Using Mobile Apps as a Support for Mandarin Language Learning

Jureynolds, Theresia and Y Ying

+ Open abstract   📄 View article   📕 PDF

     012089

Mandarin M-Comic Application Design in Supporting Mandarin Vocabulary Learning

Jureynolds, Y Ying and K Rosalin

+ Open abstract   📄 View article   📕 PDF

     012090

Comic Strip Project in the M-Comic Application for Mandarin Vocabulary Learning

Jureynolds, K Rosalin and Y Ying

+ Open abstract   📄 View article   📕 PDF

     012091

Critical Multiliteration: An Alternative Learning Model for Developing Metacognition Skills in Elementary School Students

A Hendriani, Y Tri Herlambang, E Rohayati, Ernalis and D Setiawan

+ Open abstract   📄 View article   📕 PDF

     012092

The Effectiveness of Multiliteration Learning Models in Increasing Ecological Literacy of Primary School Students

Dede Margo Irianto, Yusuf Tri Herlambang, Hana Yunansah, Tita Mulyati and Dadan Setiawan

+ Open abstract   📄 View article   📕 PDF

     012093

The Implementation of the Amora Learning Model to Improve Students' Digital Literacy Skill of Indonesia University of Education

Ocih Setiasih, Wawan Setiawardani, Nandi, Rusman and Sandi Budi Iriawan

+ Open abstract   📄 View article   📕 PDF

     012094

Improve Mathematics Pedagogical Content Knowledge and Verbal Communication Skills through Cooperative Learning Type Jigsaw

Mahmudin Sudin, CecepMaman Hermawan, Okta Rosfiani, Wahyuliana Ristiawati and Saifatul Hasanah

+ Open abstract   📄 View article   📕 PDF

     012095

Teacher's Efforts to Enhance Students' Competence in Madrasah Ibtidaiyah in Science Skills and Academic Achievement

Academic Achievement

Aep Saepuloh, Okta Rosfiani, CecepMaman Hermawan, Sutiawati and Mita Apriyana

+ Open abstract   📄 View article   📄 PDF

         012096

Collaboration on Involvement in Improving Science Learning Outcomes through Group Investigation

Okta Rosfiani, Cecep Maman Hermawan, Siti Maisaroh, Labib Romannada, Nur Fadillah Mawartika and Anwar Ilmar Ramadhan

+ Open abstract   📄 View article   📄 PDF

         012097

Needs Analysis of Web-Based Performance Asessment of Network Administration Learning to Improve HOTS Competence

Ambiyar, Raimon Efendi, Waskito, Nur Zamalia Afifa and Ratih Agustin Wulandari

+ Open abstract   📄 View article   📄 PDF

         012098

The Role of the Teacher to Construct Teaching and Learning Activities Creating a Freedom to Learn (Action Research Study)

Martiman Suaizisiwa Sarumaha

+ Open abstract   📄 View article   📄 PDF

         012099

Application of Web Based Learning to Measure Students Learning Interest

Selvy Sulyanah, Fitria Nur Hasanah and Rahmania Sri Untari

+ Open abstract   📄 View article   📄 PDF

         012100

Improving Students' Creativity Through Sharing and Jumping Task in Mathematics Lesson Study Activity

N Fauziyah, S Asari, U Ma'rifah, S Uchtiawati and A Husniati

+ Open abstract   📄 View article   📄 PDF

         012101

Profile of Metacognition Skill of Students with Dependent Field Cognitive Style in Solving HOT Problems in Science

N Shofiyah, M Zannah and F E Wulandari

+ Open abstract   📄 View article   📄 PDF

         012102

An Analysis of Teacher Candidates Scientific Literacy through Nature of Science (NoS) in Inquiry-Based Learning

F Wulandari, E Setiyawati and F Su'udiyah

+ Open abstract   📄 View article   📄 PDF

         012103

Need Analysis for Development of Web-Based Flipped Classroom Learning Models in Vocational Education

Ambiyar, Raimon Efendi, Waskito, Iffah Rojiyyah and Ratih Agustin Wulandari

+ Open abstract   📄 View article   📄 PDF

         012104

Error analysis and its causal factors in solving mathematical literacy problems in terms of habits

of mind

N Ratnaningsih and E Hidayat

+ Open abstract   📄 View article   📕 PDF

              012105

Effectiveness of the News Text Classification Test Using the Naïve Bayes' Classification Text Mining Method

Yi Ying, T N Mursitama, Shidarta and Lohansen

+ Open abstract   📄 View article   📕 PDF

              012106

The Advantages of Pleco and Google Translate Applications in Assisting Mandarin Language Learning

Yi Ying, Theresia and Vivi Febriana

+ Open abstract   📄 View article   📕 PDF

              012107

The Role of the Mandamonic Games in Supporting Mandarin Learning at Elementry School

Yi Ying, PM Susilo, FR Mei and T Rahardjanti

+ Open abstract   📄 View article   📕 PDF

              012108

Representation of Student's Creative Thinking Skills: Case Studies on Basic Biology Course

Ipah Budi Minarti and Lissa

+ Open abstract   📄 View article   📕 PDF

              012109

Mathematical Proficiency Profile of Prospective Mathematics Teacher Students

I Gunawan, L Nurhayati, Widjajani and Budi Hendrawan

+ Open abstract   📄 View article   📕 PDF

              012110

The Effectiveness of the Learning Cycle Model (5E and 7E) in Learning to Build Flat Side Sides Viewed From Student Self-Eficacy

W R Puspita and F Fardillah

+ Open abstract   📄 View article   📕 PDF

              012111

Mathematical creative thinking process of the students: an analysis of Wallas stages and personality types

N Ratnaningsih

+ Open abstract   📄 View article   📕 PDF

              012112

Creative Play and Learning in Natural Environment to Develop Creative-Ecoliteracy in Elementary School Students

Neni Maulidah, Sunanih, Rahman and Nana Supriatna

+ Open abstract   📄 View article   📕 PDF

              012113

Multidimentional Item Respose Utilization for Validating Mathematics National Examination in Indonesia

J Arlinwibowo, I Achyani and G Kurniadi

+ Open abstract   View article   PDF

012114

Symbol Sense of Mathematics Students in Solving Algebra Problems

Ariati Dwi Prasetya Rini, Saddam Hussen, Herlina Hidayati and Anwar Muttaqien

+ Open abstract   View article   PDF

012115

Effectiveness of Website-Based Smart Seminar Application on Islamic Learning (Case Study at Raharja University)

Abdul Hamid, Arribathi, Suwarto, Ita Erliyani, Saryani and Haris

+ Open abstract   View article   PDF

012116

Comparison of Mathematic Communication Ability Through Problem Based Learning And Guided Discovery

W Wandari and F Fardillah

+ Open abstract   View article   PDF

012117

Classification of Student's Mathematical Reflective Thinking in Calculus Class

R L Ariany, T T Widiastuti, A L R Jauhari and F Fardillah

+ Open abstract   View article   PDF

012118

Profile of Students' Statistical Reasoning Capabilities in Introductory Social Statistics Courses

A L R Jauhari, R L Ariany, F Fardillah and A Ayu

+ Open abstract   View article   PDF

012119

Increasing Independence of Cerebral Palsy Children using Virtual Reality based on Mlearning

Muhaimin Hasanudin, Abdul Hamid Arribathi, Indrianto, Khozin Yuliana and Dedy Prasetya Kristiadi

+ Open abstract   View article   PDF

012120

Service Provider Information System in Technopreneurship Learning for MSMEs

Muhaimin Hasanudin, Khozin Yuliana, Ahmad Roihan, Abdul Hamid Arribathi and Haris

+ Open abstract   View article   PDF

012121

Mathematical Design Study of Drainage And Dewatering Strategies: Integrated System For Water Management in Open-Pit Mining

D. Rosarina, F. Fardillah and Y. G. Wibowo

+ Open abstract   View article   PDF

012122

Analysis The Ability of Thinking Abstractly of Mathematics And Self-Efficacy Through Tpack

Moh. Nurhadi and Darhim

+ Open abstract   View article   PDF

012123

Analysis of Students Mathematics Reasoning Ability in View of Mathematical Problem Solving Ability

Ability

Depi Setialesmana, Aep Sunendar and Lutfi Katresna

+ Open abstract   🗐 View article   📕 PDF

OPEN ACCESS   012124

Digital Geoshapes Learning Media In Supporting Mathematics Education II PGSD

Mohamad Hariyono, Ernayanti Nur Widhi and Nuhyal Ulia

+ Open abstract   🗐 View article   📕 PDF

OPEN ACCESS   012125

Student Responses During Online Learning in the Covid-19 Pandemic Period

Ahmad, Hasnawati, Mulyadi, M Apriyanto, A Oklianda, D D Putra and A Warmi

+ Open abstract   🗐 View article   📕 PDF

OPEN ACCESS   012126

Statistical Literacy Analysis of Pre-Service Elementary Teachers Education

D S Nahdi, M G Jatisunda, U Cahyaningsih, Y D Kurino, E Juliar and W Bilda

+ Open abstract   🗐 View article   📕 PDF

OPEN ACCESS   012127

The Effect Of Realistic Mathematics Education On Elementary Students' Critical Thinking Skills

Ujiati Cahyaningsih and Dede Salim Nahdi

+ Open abstract   🗐 View article   📕 PDF

OPEN ACCESS   012128

Effectiveness of Puppet Media in Improving Speaking Skills of Elementary School Students

D S Saputra, Y Yuliati and B Febriyanto

+ Open abstract   🗐 View article   📕 PDF

OPEN ACCESS   012129

Assessing didactic mathematical knowledge for teaching geometry transformation

A Nurdiana, M J Tanod and A G Adirakasiwi

+ Open abstract   🗐 View article   📕 PDF

OPEN ACCESS   012130

Teaching STEM through play in kindergarten: analysis towards pre-service early childhood teachers preparing the lesson plan

A Rasyid, M K Sugandi, A A Gaffar, M G Jatisunda, E Santoso and D S Nahdi

+ Open abstract   🗐 View article   📕 PDF

OPEN ACCESS   012131

IbisPaint X Apps in Creating Collaborative 3D Learning media of Pop-Up and Movable Books

C Hasanudin, N Mayasari, K Saddhono and R A Prabowo

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Electrical Energy Alternative of Magnetic Field Around Wire of Power Line

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Electrical Energy Alternative of Magnetic Field Around Wire of Power Line

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Abstract. The electricity crisis can hamper various community or industrial activities. Meanwhile, the magnetic field with a high field strength around the wire and along the power line wire that is passed through a large electric current can be used as a new source of electricity with considerable power. For this reason, efforts are needed to utilize the magnetic field to offer an energy crisis solution. This research applies the magnet-electric law to the toroid core transformer to become a power plant. The simulation is carried out on a toroid transformer with an outer diameter of 11cm, 2.5cm thick, 9cm long which is mounted on a 27A current; 220V or 380V 3Ø. The result can be to turn on a 5W-160V or 10W-65V incandescent or 7W-200V LHE lamps. The value of 27A on the wire does not change due to the utilization of the magnetic field around the electric wire. From the analysis of a linear approach to power lines with larger currents up to several kA, a power of several kW can be generated at 220V. To get more power at a voltage of 220V required more toroidal transformers placed along the power line.

1. Introduction

Background of the crisis of electrical energy and electrical energy supply increasingly unable to meet consumers' needs. Their electric power transmission system that uses low voltage, medium or extra high voltage with large electric currents cause the magnetic field around the wire channel high power. Electric current in the wire line electric power it is alternating (ac) which will produce a magnetic flux varies with time can generate the induced voltage in accordance with Faraday's law. The emergence of the pros and cons about the dangers of electro magnetic field radiation in the vicinity of high-voltage wires and extra high,[1]. This study intends to utilize magnetic fields that exist on the power line of low voltage or medium voltage as a source of electrical energy, designing a piece of equipment that can tap magnetic flux that surrounds the wire transmission with the goal of making a power plant alternative based magnetic field is in the range of the transmission line that can generate a voltage of 220 V as a power supply for the public electricity supply in these locations, as well as changing views of people about the dangers of electromagnetic field radiation.[4][8]

2. Electromagnetic Fields In Surroundings Wire Channel Power

2.1 Basic Electromagnetic

Based on Maxwell's laws and Flemming around electrical wires that electrified will arise surrounding the magnetic field is along the wire and the wire with a magnetic field pattern as in figure 1. The first law of Maxwell say that; "Integral circumference of the magnetic field strength is proportional to the electric current that is on extents terlingkup the circumference of a circle".[1][2]

$$\oint_l H.dl = \int_A J.dA \tag{1}$$

dimana : H = Magnetic field intensity (A-t / m)
             dl = the smallest unit of path length circular
             J = electric current density   (A/m^2)
             dA = The smallest area of the magnetic field
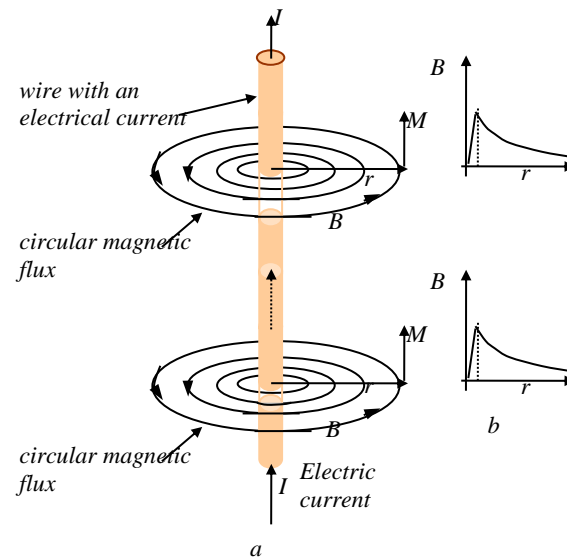
Figure 1,   a. Magnetic field on electric a wire or powerr line .
                 b. Density of the magnetic flux with respect to the radius

Another form of equation 1, a direct relationship with a magnetic field intensity H in a circular path length $l = 2.\pi.r$, can be written as

$$2.\pi.r.H = N.i \tag{2}$$

In single channel wire or a single wire coil that is $N = 1$, then the magnetic field strength at the point M as far r from the center point of the wire isr from the center point of the wire is

$$H = \frac{.N.i}{2.\pi.r} = \frac{1}{2.\pi.r} \tag{3}$$

If the electricity power lines were installed a toroid is then based on the law of ampere circle where wire line electric current is the primary winding of transformer toroid with the number of winding N_1 is 1 (one) winding wire through which the current i of the electricity power lines is considered as a

source of magnetic current or known as forced magnetomoti (mmf) has a direct relationship with a strong magnetic field H in a circular path length $l = 2.\pi.r$, can be written as [3][4]

$$2.\pi.r.H = N_1.i_1 \qquad atau$$

$$H = \frac{.N_1.i_1}{2.\pi.r} = \frac{1}{2.\pi.r} \tag{4}$$

Based on law induction voltage of Faraday's, the voltage induction generated at the primary side of the transformer toroid in the general form is [1][6][9]

$$e_1 = N_1.\frac{d\phi}{dt} \tag{5}$$

or $\qquad e_1 = \mu_o.\mu_r.H_1.A.N_1.Cos\omega t \tag{6}$

by ignoring the loss factor and the other, then in the same may as on the primary side, the induced voltage is generated in the secondary side of the transformer toroid in the general form is, [6][9]

$$e_2 = N_2.\frac{d\phi}{dt} \tag{7}$$

or $\qquad e_2 = \mu_o.\mu_r.H_2.A.N_2.Cos\omega t \tag{8}$

When loads such as incandescent lamps, with a rated power P_2^*, and the voltage V_2^*, lamp resistance is

$$R_B = \frac{(V_2^*)^2}{P_2^*} \tag{9}$$

The load current on the secondary side of the transformer is

$$I_2 = \frac{V_2}{R_B} = \frac{V_2.P_2^*}{(V_2^*)^2} \tag{10}$$

If the ratio of toroid winding and primary power line is

$$N_2.\frac{V_2.P_2^*}{(V_2^*)^2}.k = N_1.I_1 \tag{11}$$

where: $\qquad V_2$ is the voltage that occurs at the secondary side in a state burdened

$\qquad\qquad I_1$ is current on the primary in a state burdened

Then, if we want to determine how much power the load (lights) can be supplied with a voltage V_2 equal to the rated voltage of 220 volt lights, then the equation is

$$P_2^* = \frac{N_1.I_1.(V_2^*)^2}{N_2.V_2.k} = \frac{N_1.I_1.220}{N_2.k} \tag{12}$$

It means that to supply the load with power P_2^* at a voltage of 220 volts required primary current (current on power line) that is equal to I_1,

$$V_2 = \frac{N_1.I_1(V_2^*)^2}{N_2.P_2^*.k} \tag{13}$$

3. Simulations Experiment

In this research used two kinds of toroidal sizes are: Type 1 with a core size of the outside diameter (D) 11 cm, thickness (T) of 2.54 cm, length (L) 9 cm, the maximum output voltage of 240 V, the number of windings (N_2) 250, and type 2 with size D = 9 cm, T = 2.5 cm, L = 8cm, the number of windings (N_2) 250 for comparison. See figure 3. Load the secondary form varies the 5W incandescent lamp, 10 W, 25W, 40 W, 60 W and Electronic TL 7W and 15W. [4][7]. Experiment circuits are shown in figures 2 and 3
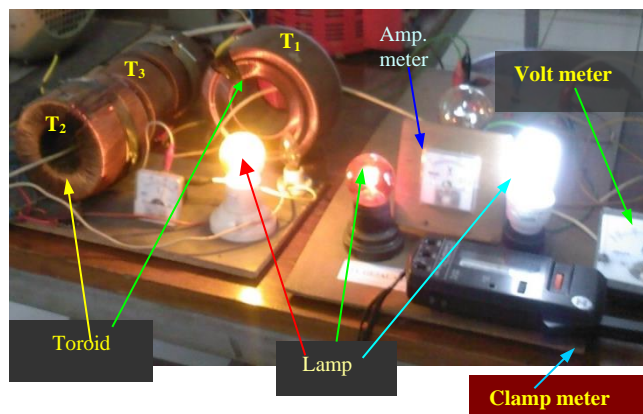
Figure. 2: Photo of circuit of Toroid system, in lab
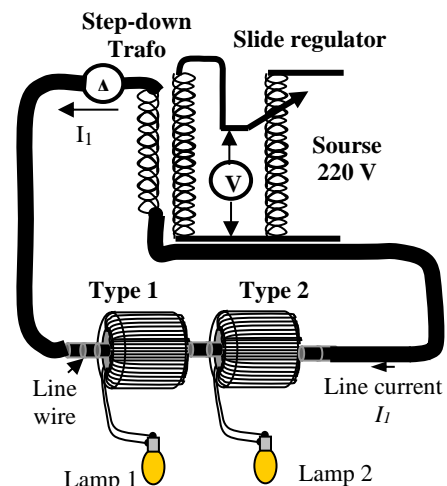
Figure. 3: The Circuits of experiments 2

3.1 Experiment 1

Experiment 1, is intended to determine the magnitude and ability of the magnetic field energy produced by electric current I1 on the cable to turn on lamps with different power sizes and voltage values generated in the lamp. Technically it is: wire lines as the main power source with a constant load in the form of 17 kW 3-phase electric motors. Using toroid type 1 and type 2 which are installed alternately on a single phase wire, that is in Figure 2. (results see tables 1 and 2).

3.2 Experiment 2

Variable of line current , is intended only to determine how much current I_1 to be flowing in the wire line electric power (on primary side) so that each lamp can light normally at a voltage of 220 V on the secondary side of the toroid.

3.3. Experiment Results

For the first experiment are shown in Table 1 and 2. And to experiment 2 are shown in Table 3. The experimental results that the primary burden in the form of three phase motors in a normal running state shown in tabel1, Toroid type 1. Load of toroida is (a) incandescent lamp as [a] and (b) Electronic TL as [b]

3.3.1. The results of the experiments 1a , with current I_1 are the value of the 3-phase motor current as a load of the primary power line, and using toroid type 2 are shown ini table 1

Tabel 1. is the result by Using Toroid type 2

Lamp (W)	Volt.of Lamp (V)	I_1 (A)	Description
5 W [a]	160	27	dim
10W [a]	60	27	dim
7W [b]	200	27	bright

3.3.2. The results of the experiments 1b , with current I_1 are the value of the motor starting current as a load of the primary power line, dan using toroid type 1 are shown ini table 2

**Table 2.** Fesults of the experiments , with current I_1 are the value of the motor current

Load Lamp (W)	I_1 (A)	V_{L1} (V)	Description
10W [a]	80	230	bright
40W [a]	80	225	bright
60W [a]	80	165	dim
15W [b]	80	>250	explode

3.3.3. The results of the experiments 2, Variable of line current , is intended only to determine how much current I_1 to be flowing in the wire line electric power (on primary side) so that each lamp can light normally at a voltage of 220 V on the secondary side of the toroid. The secondary (low voltage) short circuited with a long wire as the primary line current I_1, by using slide regulator to obtain the amount of current that can be set, see figure 3 and the results can be seen in table 3.

Table 3. The results of the experiment 2, with variable line current, using the toroid type 1

Load Lamp (W)	I_1 (A)	Lamp voltage (V)	Description
40W [a]	70	220	bright
60W [a]	105	220	bright
100W [a]	175	220	bright

Thevalue of the current in table **3** above is the large excitation current is required to flow on the wires of electricity to power the lights burden toroid size or type 1 at the price of normal voltage of 220 volts It can be analyzed through the characteristic curve current wires primer I_1 and toroid load voltage V_L for some great nominal wattage of incandescent bulbs following
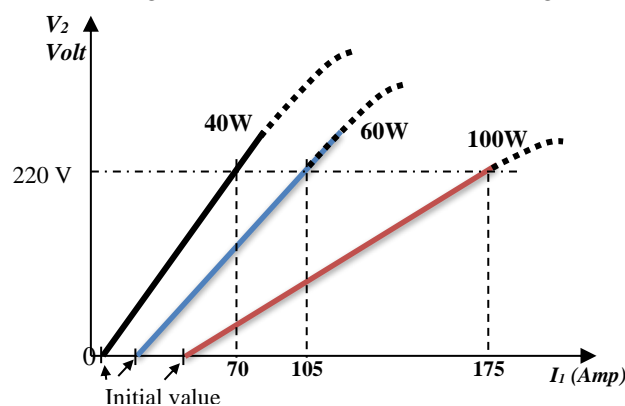
Figure 4, Curve I_1 - V_L on the value of different loads

The dashed line is the possible voltage that can occur and curved lines caused by saturation of the toroid core.   Results of experiments using toroidal type 1 (T_1), type 2 (T_2) and type 3 (T_3), using a set of images and slide regulator fig.3 single phase system as a variable voltage source, shown in table 3

4 Discussion

From table 1 with a load of secondary that incandescent lamps 5W, the light is dimmed with a voltage of 160 V, the current (I_1) 27 A, an incandescent bulb 10 W, the light is dimmed by the voltage 65 V, is still on the current (I_1) 27 A, whereas with Electronic TL 7W bulbs, lights brightly with a voltage of 200 V, and the current (I1) is still at the same value at 27 A; meaning there is no change in the current

flow in primer power line due to the load change of the toroid transformer secondaries. In table 2 with incandescent light load on the flow channel 80 A , 10 W lamps can be lit up very bright and 40 W lamps also brightly , while the 60 W lamp dimly. In table 3 with toroid transformer type 1, shows that to light a 40W incandescent lamp at a voltage of 220 V necessary flow channel 70 A, 60 W lamps need to current 105 A, and 100W lamps need current 175 A.

5. Conclusion

Alternative energy can be obtained through the use of magnetic field energy that is along the power lines using toroids. From the analysis through a linear approach that in power lines with larger currents up to hundreds of amperes can be obtained power up to several kilowatts at 220V. And the more toroids installed along the power line, the more new electrical energy will be obtained.

The greater the electric current flowing in the wire, the greater the energy produced by the magnetic field around the wire with the highest magnetic field intensity located at the nearest radius of the electric power line.[2]

6. Suggestion

Further study on power lines with larger electric currents, it is necessary to design toroidal core transformers with larger sizes. The use of more transformers to be installed in rows on long electric cables in a three-phase system, to ensure there is no influence of the use of the magnetic field along the wire line on current, voltage and power in this main power line.

References

[1]   Carlson A Bruce and Gisser David G 1981. *book Electrical Engineering concepts and Application* ed Tom Robins USA (Addison-Wesley Series in Electrical Engineering publication) vol 1, pp 627−642

[2]   John Carl T A 1988. *Engineering Electromagnetic Field and Waves* (publish by John Wiley and Son) vol 1 chapter 2 pp 78−92

[3]   Seippel Robert G 1997. *Fundamental Of Electricity Basics of Electricity, Electronics, Controls and Computers* ed copyright by American Technical Society, vol 6 2th print Chapter 7 pp 98−101 and chapter 11 pp 219−222

[4]   Leach Donald P 1976 *Basic Electric Circuit* (Coppy by John Wiley and Sons Los Altos Hills, California: New York /Chichester/Brisbane/Toronto/Singapore) vol 2 chapter 11 pp 248−291

[5]   Hidayat Rahmad, Fauzi Fachrul Rezka,Yakob Liklikwatil 2019. *Analysis of 4G Data Service Quality* (Journal of Physics: Conference Series, publishing by IOP) vol 1175 issu 1 pp 012126

[6]   Liklikwatil Yakob 2014. *Mesin Mesin Listrik* ed Herlambang Rrahmadhani and Ika Fatria Iriyanti (publisher Deepublish, Yogyakarta), vol 1, chapter 1 pp 2-4 and chapter 10 pp 198-199

[7]   EMC Test Systems, 2001. *Helmholtz Coil Manual*

[8]   Hidayat R, Liklikwatil Yakob, Setiawan Hamdani, Santoso S, Lestari Ninik Sri 2017. *Antena Cerdas untuk Mitigasi Interferensi dengan Algoritma Least Mean Square*. (Setrum: Sistem Kendali-Tenaga-Elektronika-Telekomunikasi-Komputer **vol 6**) pp.97−105

[9]   Fitzgerald A E, Kingsley Jr Charles, Umans Stephen D 1983 *Handbook on the Electric Machinery* ed T. Michael Slaughter and David A.Damstra, McGRAW-HILL International Book Company, Intrnational Student Edition (Auckland: Bogota Guetemala Hamburg Johannesburg Lisbon London Madrid Mexico New Delhi Panama Paris San Juan Sao Paulo Singapure Sydney Tokyo), vol 6, chapter 1 pp 1-37

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