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Organized by
Politeknik Negeri Padang and Politeknik Ibrahim Sultan
Padang, West Sumatera - INDONESIA, 13-15 October 2017
Assalamu’alaykum wrwb,

Welcome to Padang!

Dear authors and all participants of International Conference of Applied Science on Engineering, Business, Linguistics, and Information Technology (ICo-ASCNITech) 2017 to be held in Kyriad Bumiminang Hotel in Padang, Sumatera Barat-Indonesia on 13-15 October 2017.

This annual event is organized by Politeknik Negeri Padang (Indonesia) and Politeknik Ibrahim Sultan (Malaysia). About 200 titles by more than 350 authors are registered to this prestigious conference from more than 30 local and international higher education institution as well as research bodies. This is a great opportunities to share information of applied research, technology and innovation among researchers and academicians, students, government, industries and other stakeholders. Hopefully this wonderful agenda would considerably contribute to Indonesia economic competitiveness as well as other countries which are the theme of this conference, “Fostering global economic competitiveness through innovation in applied science and technology”.

Best Regards,

Assoc. Prof. Gusri Yaldi, PhD
Chairman of ICo-ASCNITech 2017
Assalamu’alaykum wrwb,

Politeknik Negeri Padang is pleased to conduct the International Conference of Applied Science on Engineering, Business, Linguistics, and Information Technology (ICo-ASCNITech) 2017. As a leading higher vocational educational institution in Indonesia, Politeknik Negeri Padang must develop its international reputation to achieve long term vision as the best higher vocational education in South Eastern Asia by 2025. This international event is part of our strategic plans toward that vision which also to strengthen our cooperation with international universities like Politeknik Ibrahim Sultan, Malaysia.

We would like to warmly welcome all authors and participants to Padang city. Meeting with other researchers and academician from different universities, countries and cultures during the conference is of course a valuable experience toward your future career. As our special guests, we recommend you to try an internationally famous and delicious cuisine from Padang called “Rendang”. We hope you enjoy your stay while in Padang and good luck with your presentations.

Warm Regards,

Aidil Zamri, ST., MT.
Director of Politeknik Negeri Padang
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DESIGN AND SELECTION OF CONTROL FOR VACUUM DISTILLATION UNIT

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Abstract

This study describes the selection of controllers in the vacuum distillation unit (VDU) between a model predictive control (MPC) and a proportional-integral (PI) controller by comparing the integral square error (ISE) values. Controlled variables in this study are feed flow rate, feed temperature, top-stage pressure, condenser level, bottom-stage temperature, LVGO (light vacuum gas oil), MVGO (medium vacuum gas oil), and HVGO (heavy vacuum gas oil) flow rate. As a result, control performance improvements occurred as using MPC compared to PI controllers, when testing a set-point change, of feed flow rate control, feed temperature, top-stage pressure, bottom-stage temperature and flow rate of LVGO, MVGO, and HVGO, respectively, 34\%, 75\%, 60\%, 98\%, 22\%, 68\% and 80\%. Only on condenser level control PI performs much better than the MPC. So PI controller is used for level condenser control. While for the test of disturbance rejection, by changing feed flow rate by 10\%, there is improvement of control performance using MPC compared to PI controller on feed temperature control, top-stage pressure, bottom-stage temperature and flow rate LVGO, MVGO and HVGO 83\%, \%, 70\%, 60\%, 93\% and 72\%, respectively. For very large disturbance tests (+ 50\% of the feed flow rate), the percentage of error of feed temperature, top-stage pressure, condenser level, bottom-stage temperature, flow rate LVGO, MVGO and HVGO were 6\% 5.5\%, 6\%, 5.5\%, 0.3\%, 0.7\%, and 1.6\% respectively.

Keywords: vacuum distillation unit, model predictive control, proportional-integral, set point tracking, disturbance rejection
DESIGN AND CONTROL OF GAS LIFT SYSTEM DUE TO WELL DEPLETION WITH LEVELIZED COST ANALYSIS

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Abstract

Gas lift is required to lift the gas on wells that depleted. In the field of X wells located in the offshore area, the necessary gas lift pressure is 1700 psig to maintain the total gas production by up to 11 MMSCFD, whereas the current well pressure is 650 psig. To raise the necessary gas lift pressure, compressor systems are applied. The objective of this research was to select one of two types of compressors (centrifugal and reciprocating) based on their economics. Proportional-Integral (PI) and Proportional-Integral-Derivative (PID) controller is applied and tuned by open loop Ziegler-Nichols (ZN) and closed loop Tyreus-Luyben (TL) method. Integral of Squared Error (ISE) controller performance criteria is applied for controller’s performance evaluation. This thesis will also analyze the dynamic design process with levelized cost method. The result is open loop ZN tuning has a smaller ISE up to 99.33% on a centrifugal compressor configuration and 98.65% for reciprocating compressor configuration than TL method. Reciprocating compressor configuration with a PID controller and ZN tuning able to reduce 22.96% of energy, compared with the centrifugal compressor configuration and tuning PI controller TL tuning.

Keywords: Control System, Centrifugal Compressor, Surge, Reciprocating
APPLICATION OF DIJKSTRA ALGORITHM FOR TSUNAMI EVACUATION PROCESS IN THE CITY OF PADANG

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Abstract

Tsunami evacuation process using the shortest path acted as evacuation line for individuals leads to a congestion at a certain point. Therefore, in the evacuation process, the optional path which is modified from the shortest path is required. In this paper, the street network of the city of Padang is converted into a connected and weighted graph, and the optional path is determined by using a Dijkstra algorithm with the travel-time constraints. The simulation for the tsunami evacuation process is performed for the case in the south part of sub district of North Padang. From the simulation results we obtain an estimated capacity of shelters and evacuation routes which can be used in the re-evaluation of the disaster mitigation strategies.

Keywords : Dijkstra algorithm, shortest path, evacuation routes

CRITICAL REVIEW ON WAQF EXPERIENCES: LESSONS FROM MUSLIM AND NON-MUSLIM COUNTRIES

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Abstract

Purpose - The purpose of this paper is to critically assess current practices in waqf institution based on Middle East, Asia and some selected non-Muslim countries experience. Muslims countries have their own ways of managing waqf. Some ways are similar to one another and some are different.

Methodology - The methodology used in this study is in depth review analysis of the literature of waqf practices in various countries. The paper could conclude that differences of waqf institution based on legal factors, historic of establishment and current implementation.

Findings - The paper identifies, that the objective establishment of waqf institution is benefit to the society and development of country.

Limitations - This paper is based on critical analysis review of the waqf experiences literature review in selected countries. Future research might integrate this review with empirical methodology. There is a limit number of countries waqf experiences have been included in this study, future research might include more experiences. In term of the implications of findings, it hopes that the findings give more comprehensive and cross countries picture of waqf experience and practice. Which is, it will assist the related waqf regulators in the evaluation process of waqf management practices and determine best practice as well set up a benchmark waqf management practices.

Keywords : Practices Waqf Institution, Muslim Countries, Non Muslim Countries
THE DOMINANT ASPECTS OF WOMEN TOURIST FORCE TO VISIT TOURISM DESTINATION OF PADANG CITY

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Abstract

For a tourist destination, the desires factor for a return visit from the tourists is very important for the improvement of profits or for the promotion and planning of the development of the destination. Factor of desire to a return visit can be influenced by the experience obtained by tourists at the time of the previous visit (memorable tourist experience). While force by the facilities and attractions of the respective tourist attraction, the desires of a return visit can also be encouraged by the subjective factors of the tourists, the subjective factors may differ based on the background of the gender of tourists. This article explores the results of research to explore the memorable tourist experience of female tourists to the tourist attraction in the Padang City. Dimensions tourist experience include: Hedonism, Novelty, Local Culture experience, refreshment, meaningfulness, Involvement, Knowledge, adverse feeling from 100 samples of female travelers foreign and domestic was assessed by using a scale Likers, then analyzed by factor analysis. The sample is selected by using accidental sample techniques. The result is known there are five factors or the dominant experiences remembered by women tourists when it comes to Padang tourist destination. The experience also influenced their decision to visit again.

Keywords: memorable tourist experience, women, factor analysis
MODEL OF EDUCATION AND TRAINING ON ENTREPRENEURSHIP OF CREATIVE INDUSTRIES BASED ON NEEDS AND TRIPLE HELIX TRADITIONAL FOODS

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Abstract

This research aims to produce model of education and training based on traditional food-based creative industries and triple helix. So far there has been no research related to the education and training model for the traditional food industry based on the needs and triple helix that can be used as a national pilot, whereas Indonesia is known as one of the countries of tourism visit that is the diverse traditional culinary tourism. The design is linked to the design of the training, the design of the training form and the design of the material. The model design to be studied in terms of training is preparation, prelamping, training and post training. Each of these models, will be designed based on the needs, the traditional food creative industry, and the triple helix. The sampling technique was done by purposive non random sampling method. Data were collected by survey technique, questionnaire, participation action research, FGD with community and interview method. The result obtained is that there has been an effective form of training design and training materials for the traditional food industry in order to support the achievement of the vision of Indonesia creative 2025 and make the traditional food industry able to compete with other franchise food in Indonesia and the world.

Keywords : Training Model, Creative Industries of Traditional Food, Triple Helix

EFFECT OF IMPREGNATOR COMPOUNDS ON HETEROGENEOUS CATALYSTS FOR INCREASED ESTHER CONTENT

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Abstract

Biodiesel is produced using heterogeneuos catalysts. Heterogeneous catalysts will simplify the biodiesel production process due of its nature to prevents the soap forming reaction at the end of the process. Biodiesel is a non-petroleum chelating fuel derived from transesterification of triglycerides and esterification free fatty acids using low molecular weight alcohols. The heterogeneous catalyst was synthesized by KI / KIO₃ impregnation method by varying the concentration of 5%, 10%, 15% impregnation solution and the calcination process. The optimum condition was obtained in the KIO₃ impregnation solution and the 15% impregnating concentration with a 79,15% ester concent. Thus, 79,2129% of ester conversion showed using GC was confirmed. The biodiesel characteristics obtained were 0,880 gr/ml density

Keywords : Biodiesel, Heterogeneous, Impregnation, Catalyst
QUADCOPTER CAPABILITY DEVELOPMENT FOR ADDITIONAL LOW VOLTAGE DISTRIBUTION NETWORK LOCATION TRACKING

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Abstract

This research proposes the development of a quadcopter prototype control, to support the location survey of the addition of a low voltage power system network. The addition of a residential location in an area will lead to increased demand for new power lines. In addition to the one million-house program launched by the Republic of Indonesia’s current government, of course, will further increase the demand for additional new electrical connections. One of the preliminary work to do the addition of power grid is location survey. Location survey is done by direct measurement with a meter of a wheel or by using GPS. The use of the meter and GPS requires the surveyor to search directly for each location path to which new network connections will be installed. This will increase the cost of planning and spend a longer time. Utilizing quadcopter as a measuring instrument and depiction of new network location path will facilitate surveyor in drawing location map and situation picture. To keep track of maps and pictures of new network situations and old network replacements can be done with the help of quadcopter. The problem is that by using a professional quad copter the price is still very high and if using the usual quadcopter limited ability such as easily hit by the building or trees in addition to the limitation of the tracking and coordinates the shooting of the aerial photographs. For this reason, this study developed the control of a quadcopter into a quadcopter specific that is capable of tracking the coordinates and aerial photographs. The aircraft developed its capability with the help of ultrasonic sensors to avoid impacts on the walls of buildings or other trees, GPS placement to track the coordinates and placement of cameras to take aerial photographs. It is expected that this aircraft can be marketed with banderol no more than one million rupiahs or under 750 US dollars. Such a price is expected to be reached by local service provider contractors to own the aircraft. To set the coordination of the quadcopter work on location mapping it needs to be represented by a specific control system algorithm so that the results of this plane tracking can be stored directly on a computer or laptop system.

Keywords: quadcopter, ultrasonic proximity sensor, location survey
UTILIZATION OF E-GOVERNMENT WEBSITE OF WEST SUMATERA PROVINCIAL GOVERNMENT TO ACHIEVE HIGH E-GOVERNMENT DEVELOPMENT INDEX (EGDI) - UNITED NATIONS

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Abstract

E-Government Website is one of instruments in electronic-based government implementation in order to improve the public service quality effectively and efficiently. The government has been released the National Strategy Policy and Development of e-Government through President Instruction No. 3 of 2003 which is the framework for all the technical policy e-Government operations. In more and more countries across the world it is becoming required for government and other public service websites to be based on standards and follow accessibility guidelines. Unfortunately, many web agencies do not seem to be interested in building high-quality websites, using best practices, or making sure the sites they build are accessible to all. Web standards do not equal accessibility, but using web standards is an integral part of building an accessible website, and the validation results usually indicate if any effort at all has been spent on making a site accessible.

Keywords: E-government, Website, Internet, EGDI, E-Government Development Index

EVALUATION OF THIN-LAYER DRYING KINETICS MODELS FOR SHORTBODIED MACKEREL FISH DURING DRYING PROCESS USING HYBRID TUNNEL DRYER

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Abstract

Drying is one of the process of preservation of fishery products that can be used to overcome the problem of losses when the fish over supply. The drying process can be conducted using various types of dryers. Fish drying kinetic is very useful in designing and optimizing the use of dryers. The purpose of the research was to develop a mathematical model to predict the drying kinetics of shortbodied mackerel fish. The drying process used a tunnel type dryer with LPG gas source and air velocity 3.59 m/s. This research used several mathematical models to explain the drying kinetics of shortbodied mackerel fish. All the values of R2 and RMSE obtained from the model were compared. The results showed that the Middilli model obtained value of R2 0.993 and RMSE 0.15. This was the best model which could be applied to predict the moisture content of shortbodied mackerel fish during drying process.

Keywords: Drying kinetic, Mathematical model, Shortbodied mackerel
EXPERIMENTAL STUDY ON POROUS CONCRETE REGARDING TO ITS AGGREGATES VARIATIONS OF COMPOSITIONS, SHAPES, AND TYPES FOR SIDEWALK APPLICATION

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Abstract

Infrastructure growth is accompanied by decreasing water catchment and open space areas. It has caused surface water runoff which causing urban flooding. Research on pavement materials needs to develop a porous material that can drain water properly, and met the specifications of pavement materials, for sidewalk application or parking area. This research was conducted to develop a porous concrete mix design for sidewalk application with variations on types and shapes of aggregates. The results of this research is expected to provide a porous concrete mix design which met the technical specifications related to the compressive strength of the material. The method used on this experimental research is to develop specimens material that refers to ACI 522R-10 Standard and ASTM C33 Standard. Aggregate variations used are flat, sharp and crushed stone. There are 9 variations of compositions, shapes, and types of aggregates by adding admixture substance on these specimens. Results of this research has shown that 50% no. 8 sized (ASTM C33) crushed stone and 50% sharp aggregates sized <1cm, provided 12.816 MPa for compressive strength value, 20.3% for porosity value and 0.46 cm/s for permeability value. This mix design can be applied for sidewalk application, because the compressive strength values meet the specifications.

Keywords: Porous Concrete, Mix Design, Aggregates, Compressive Strength, Permeability, Sidewalk Application
CONCEPTUAL DESIGN OF PEDESTRIAN OVERPASSES BRIDGE FOR VERTICAL EVACUATION FROM TSUNAMI (POBET) IN PADANG CITY – WEST SUMATRA

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Abstract

Padang City, the most populated city in West Sumatra, is considered to have one of the world’s highest tsunami risks due to its high and close offshore thrust-fault seismic hazard, its flat terrain, and its dense population, which is mostly distributed along the coast. Current preparation for a tsunami in Padang focuses on developing early warning systems, planning evacuation routes, conducting evacuation drills, and educating the public about its tsunami risk. These are necessary, but insufficient, steps. The natural warning in Padang—strong earthquake shaking that lasts over a minute—will be the first and best indicator that a tsunami is likely to strike. It is estimated that even if evacuation begins immediately after the earthquake shaking stops, more than 100,000 inhabitants of Padang will be unable to reach high ground in less than 30 minutes—the expected time between the end of the earthquake shaking and the arrival of the tsunami wave at the shore. Based on Evaluation of Tsunami Evacuation Infrastructure for Padang, West Sumatra, Indonesia (Veronica, et.al: 2011) concluded, based upon extensive fieldwork, that Padang’s existing tsunami evacuation capacity is grossly inadequate, and that tsunami evacuation structures are essential to protect the people of Padang. To maximize their impact and effectiveness, those tsunami evacuation structures should be locally-appropriate, feasible to build and maintain, and easy to replicate. The M7.6 earthquake that struck Padang on September 30, 2009 confirmed this critical need for tsunami evacuation infrastructure. Although the earthquake did not generate a tsunami, it did cause the collapse of many buildings that had previously been identified as satisfactory evacuation structures. The earthquake also triggered massive traffic jams, stranding people in harm’s way and demonstrating why Padang needs structures that enable more people to evacuate-in-place. Finally, it needs to design new structures to accommodate people to evacuate immediately in place. Pedestrian Overpasses Bridge for Vertical Evacuation from Tsunami (POBET) will work effectively for evacuees who get traffic jam during the tsunami inundated elapsed critical hours. The most reason for POBET need to be design is a prototype for the government to combine pedestrian overpasses bridge with vertical evacuation from tsunami. These evacuation infrastructures consider about less for land use, easy to reach, compatible for any infrastructure purposes. Rely on budget and planning, POBET would design with a smallest amount budget and effortless construction process. It can be replicate by the local government to build in any place in Padang City.

Keywords: Tsunami risk, Vertical Evacuation, Bridge, Infrastructure
E-TOUR GUIDE DI KABUPATEN KEPULAUAN MENTAWAI BERBASIS GEOGRAPHIC INFORMATION SYSTEM DAN LOCATION BASE SERVICE

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Abstract

Mentawai Islands District is one of the areas that have tourism potential spread in Mentawai Islands District. But the potential of this tourism has not been widely known by the wider community. One of the obstacles is the lack of information about the location of tourism. Therefore, E-Tour Guide website in Mentawai Islands is required to use Location Based Service (LBS) and Geographic Information System (GIS) which will help and simplify the user side wherever they are to obtain information and local government of Mentawai Islands District from Side of regional promotion. LBS and GIS can be one of the main tools that are interactive, because with the LBS and GIS will be described to detect the location of the object with the technology positioning system used is Cell-ID derived from the Base Transceiver Station position and the location of tourism in the real conditions in Map form. The process needs to make the website to be more interesting and conveyed information quickly, accurately and efficiently. With the E-Tour Guide in the Mentawai Islands District can display services that react to changes in position entities and information on tourism levels of the Mentawai Islands Regency in the form of photo galleries, tourism descriptions, tourism communication contacts and routes and distance to the nearest tourist sites.

Keywords: Tourism, E-Tour Guide, Location Base Station (BTS), Geographic Information system (GIS)
APPLICATION ON GENERATING DATA PATTERN OF CAR'S ENGINE COMBUSTION WITH EXHAUST GAS BASE

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Abstract

The exhaust of motor vehicle contain elements and compounds that indicate combustion conditions in the engine combustion chamber including the condition of internal combustion engine and external combustion engine. The concentration of elements and compounds that are dominant in determining the engine combustion conditions on exhaust emissions are Hydrocarbon (HC), Carbon Monoxide (CO), Carbon Dioxide (CO2) and Oxygen (O2). Elements and compounds contained in exhaust emissions can be detected by a sensors that sensitive to several levels of these elements and compounds. The result of analog data obtained on the sensor at time domain is converted to frequency domain through Fast Fourier Transform (FFT) method. Furthermore, normalization of the spectrum and unique data collection obtained to form data patterns that characterizes the combustion conditions of the machine. This study aims to make the system to be able to display the form of data pattern category of combustion engine car fuel gasoline with carburetor system through the detection of exhaust emissions. This system consists of a multi sensor gas as an input component, and a signal processing system using Field Programmable Gate Array logic (FPGA) MyRIO module production National Instrument. Trials were conducted on a number of car-fueled carburetor system cars with different brands, manufacturers and years of manufacture. Test results in the form of sensor response to the levels and elements of the exhaust gas and detection patterns of data displayed in the form of graphs of data categories burning machine. The results of the data pattern detection indicate a perfect burning category of 83.33%, and indication of incomplete combustion category pattern of 90%

Keywords: exhaust, sensor, pattern
WATER LEVEL CONTROL USING FUZZY LOGIC METHOD ON FISH POND

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Abstract

The discharge of pond water is greatly affected on the growth of fish seeds so that the water flow arrangement is needed to produce more fish and reduce the mortality of the fish. To set the open-closed water gate system needed a good setting so that the desired water discharge can be achieved. System settings with Fuzzy Logic method is used to set the big or small instead of the pool water gate. The input of fuzzy logic is error. The obtained error is the desired height ratio with the readable height of the level sensor. In addition to errors, the other input is a delta error where the delta error is the difference between the current errors with the previous one sampling error. Setting the size or size of this water gate is controlled by a microcontroller with the output of a DC motor. The average error of water level reading to sensor readings is 9\%. Response control to achieve setting point value average of 7.1 minutes.

Keywords : 

DEVELOPING DAIRY CATTLE INFORMATION SYSTEM FOR LIVESTOCK FARMS IN INDONESIA

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Abstract

The dairy cattle farms system in Indonesia is done traditionally with individual ownership. Each group of dairy cattle farmers in a village forms a simple farm. Livestock centers in Indonesia are under the control of the district government. There are many centers of farms scattered throughout the territory of Indonesia. Each province has several districts. The location of dispersed farms has resulted in difficulties for the district government to collect livestock data (recording) which is still done manually. Livestock records include: identity, ownership, health, maintenance, selection, and productivity. The purpose of this research is to build the Information System of Dairy Cattle based on android. The benefit of this research is to make it easier for the district government to records, because farmers can records themselves at any time through smartphones. Information systems are built using object-oriented methods that include: initial, elaboration, construction, and transition phases. The system is built has 8 databases, namely: livestock, birth, buying and selling, information, death, visum, health, and expenditure. This system has been successfully built and can be downloaded for free through google playstore.

Keywords : dairy cattle information system, livestock record, farm center, android, object oriented method
DESIGN MONITORING SYSTEM FOR EFFECTS OF LONG-TERM SITTING BASE INTERNET OF THING

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Abstract

Workers spent more than two-thirds of their working hours sitting behind their desk. Almost all of them never put attention to good sitting position and caused health problems for themselves such as increasing the risk of hemorrhoids, heart disease, diabetes, obesity, joints damage, muscles and posture. The workers are not aware into account how long they had been sitting. Thus, one way to avoid health problems caused by long-term sitting is using a device which monitors body temperature, heart and muscle. This study explains the designing of prototype and monitoring system of long term sitting with temperature and muscle parameter. Parameter result will be sent to database server and can be accessed through internet. The system hardware consist of sensor module, signal processing module and node client module. Ethernet shield W5100 applied to connection between IoT gateway and internet in node client. DHT11 module applied as temperature sensor and muscle sensor to detect the muscle reaction. This design has tested to Politeknik Negeri Padang employee. The result shows weight of body influence the increasing of temperature. The functional testing using web interface success to display the sensor result in real time. Node client hardware can read and process data output sensor, thus send the data to internet with sending time delay average is 63,5 second.

Keywords: Longterm sitting, Database server, IoT, Monitoring, Muscle sensor, Temperature sensor
LAND SUITABILITY AND CARRYING CAPACITY OF MARINE TOURISM IN PIEH ISLAND DISTRICT, WEST SUMATRA

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Abstract

Pieh Island located within the Waters Conservation Area in Padang Pariaman District, West Sumatra, has a utilization zone allocated for the development of marine tourism. The utilization zone located in the eastern part of the island is planned for coastal tourism development, snorkeling and diving tourism, but until now there has not been any land suitability and carrying capacity for the marine tourism development. Therefore this study aims to determine the land suitability and carrying capacity for allotment of the three types of marine tourism that will be developed in the utilization zone in Pieh Island waters conservation area. The study was conducted from May to September 2016, at three established observation stations. The data obtained from the three stations are then analyzed to obtain land suitability and carrying capacity for coastal tourism, snorkeling and diving. The results show that land suitability for coastal tourism is 0.53 ha, 11.19 ha of snorkeling tourism and 9.37 ha dive tourism. The carrying capacity of the area for coastal tourism is 354 people / day, the carrying capacity of the area for snorkeling activities is 448 persons / day, and the carrying capacity of the utilization zone for diving tourism is 375 persons / day.

Keywords: Pieh Island, Land Suitability, Carrying Capacity

DEVELOPMENT OF EMPLOYEE INFORMATION SYSTEM WEB-BASED ON MAN 1 PADANG

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Abstract

Information Systems serve as a tool for managing palayanan in the organization to be more accurate, effective and efficient. In MAN 1 Padang TU Head is still difficult to manage employee data because there is no database management that can store, process, and maintain the integrity of personnel data. To improve the service in MAN 1 Padang is in need Civil Service Information System-based web that is able to manage personnel services, from employee data input process, employee leave process, employee mutation process and employee retirement process are mutually integrated as a whole. This design is implemented with PHP programming language with MySQL database and CodeIgniter framework. In the system design involved Use Case diagrams, Activity diagrams, Context Diagrams, flowmap, Normalization and Entity Relationship Diagram. This system involves 3 users ie Employee, Admin, and Principal. The three levels of registered users have a private account to enter into the system ie username and password for the admin and principal while the employee enters by using NIP and Password with MD5 encryption. This personnel information system produces web-based applications that can help Administrative Officers in improving the effectiveness and efficiency in the implementation of personnel management activities as well as displaying actual information in the form of employee data reports, employee pension information, history of employee mutation and employee leave history.

Keywords: Human Resources Information System, MySQL database, CodeIgniter framework
DESIGN OF AUTOMATIC LOADS USAGE DISCONNECTED CONTROL CIRCUIT FROM THE BATTERY SUPPLIED BY SOLAR CELL

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Abstract

A Solar Power Plant produce electricity in the form of direct current. These current flow can be used directly to the loads. Another utilization way of the direct current flow is by storing the electrical energy in the battery. The output of this battery is connected to the direct current loads or even to inverter in getting alternate current. In simple words, battery gets electrical input from solar cell and gives electrical output to the loads. This process is called charge and recharge the battery. A battery controlled Unit circuit can solve the charge and recharge process in the day time. But, how about at night time? Using loads continuously can effect recharge battery flowing out very fast. If this occurs at night, charging process will never be there. To avoid the damage of battery caused by electrical current withdrawal from loads, the loads should be disconnect from battery immediately. The mechanism of this can be applied manually or automatically. Automatic way is the best term. This paper aim to create the circuit controlling loads usage disconnected automatically in the battery which is supplied by solar cell. The result of this research is designing the automatic circuit by using relay.

Keywords: Automatic,Disconnected, Load usage, Battery, Relay, Solar cell

LINEAR PROGRAMMING APPLICATIONS: RESOURCES AND OPERATIONAL COST OPTIMIZATION OF MICROHYDRO POWER SOUTH SOLOK, WEST SUMATERA

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Abstract

This paper examines the optimization of the procurement of microhydro power plants in Sangir Subdistrict, South Solok District, at West Sumatera. This area is a remote area with a difficult topography, a small population, and has not been reached by electricity from State Electricity Company. This microhydro power plant utilizes the Batang Sangir River as a source of turbine driving power. The limitations of non-governmental funding, technical limitations, and the distance of two rivers from residential areas require that field surveys and optimal calculations be carried out. This study uses linear programming to optimize operational costs and select the most suitable river resources, with Pom for Windows software. Based on the linear programming calculations, this study decided that the optimal project to be implemented are Batang Aro, Batang Sangir and Batang Liki, while the Batang Belangir cannot be funded in the same year.

Keywords: Linear Programming, Microhydro, Resource Optimization, Operational Cost
DETECTION TRAFFIC DENSITY WITH BACKGROUND SUBTRACTOR ON HSV COLORS SPACE AND GLCM METHOD

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Abstract
Traffic congestion is often caused by vehicle buildups due to ignorance of motorists regarding information on the road conditions on the route. So it is necessary to monitor the traffic condition. In the application of the traffic condition monitoring system has limitations on the positioning of the camera so as to affect the quality of the captured image. The use of the Background subtractor method of the HSV colors space and cropping image and the use of characteristic extraction methods based on glcm value can distinguish the traffic density conditions.

Keywords: Traffic congestion, Background subtraction, HSV colors space, GLCM value, Traffic density.

THE STUDY OF COMBUSTION TECHNOLOGIES OF THE BIOMASS AS AN ALTERNATIVE ENERGY TO SUBSTITUTE THE FOSSIL FUEL

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Abstract
The substitution of biomass energy to replace the fossil fuel energy is still waiting for its application in daily life due to the enormous potential of biomass energy around us. Moreover, the using of biomass as energy is expected to be environmentally friendly and more economical. Currently, biomass is not popular as a fuel because it is inefficient and not easy to use. What kind of biomass technology is most effective and efficient to use need to be answered soon as possible. This research was conducted with literature study by the comparative method. This study discusses the use of biomass as a solid fuel and focuses on combustion technology. The result is that the efficient combustion technology of solid fuels can be reach by increasing the heating value of the fuel by adding a material that has higher heating value such as the polymer.

Keywords: combustion, efficient, heating value, biomass
WAVE AND CURRENT HYDRODYNAMIC STUDY
AT BATANG AIR DINGIN RIVER MOUTH, PADANG

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Abstract

Batang Air Dingin estuary was located in Koto Tangah Sub-district of Padang City and facing to Indian Ocean. Problem that many encountered in the estuary was the occurrence of sedimentation due to changes in the flow pattern as the influence of the hydro-oceanographic components of rivers and sea at the mouth. Mathematical modeling was conducted to obtaining the current and wave patterns in Batang Air Dingin river mouth. Initial wave height was obtained from hindcasting for 10 years of wind data using the SMB method. Tidal height, current velocity, bathymetry depth contour and existing river cross profile are obtained from the measurements. The RMA2 and STWAVE modules of the SMS 8.1 software was used with validation to results performed on the measured current velocity at the specified location. Wave height forecasting obtained was around between 3.18 - 5.2 meters and 1.13 - 5.12 meters for each the region of wave generated area. Refraction coefficient is obtained between 0.40 - 0.48 and 0.13 and 0.51 with significant direction of waves coming from the west. The result of current velocity validation getting good value with mean of root mean square = 0.067 and 0.051 for each observation location.

Keywords: Hydrodynamic Study, Batang Air Dingin River Mouth, Mathematical Modeling
PENGARUH CORPORATE GOVERNANCE YANG TERDIRI DARI DEWAN DIREKSI, KOMISARIS INDEPENDEN, KOMITE AUDIT, KEPEMILIKAN INSTITUSIONAL, KEPEMILIKAN MANAJERIAL TERHADAP TAX AVOIDANCE

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Abstract

This study aims to examine the effect of corporate governance consisting of boards of directors, independent commissioners, audit committees, institutional ownership, managerial ownership of tax avoidance. The population used in this study is a manufacturing company listed on the Indonesia Stock Exchange during 2011-2016 in a row. While data used in this research is secondary data and sample selection by using purposive sampling method. There are 672 samples that meet the criteria as the research sample. The method of analysis used to test the hypothesis in this study using panel data regression analysis. The results showed that the board of directors had a positive effect and audit committee had a negative effect on tax avoidance. However, independent commissioner variables, institutional ownership and managerial ownership have no effect on tax avoidance. The results of this study indicate that tax avoidance is influenced by the board of directors and audit committee.

Keywords: corporate governance, boards of directors, independent commissioners, audit committees, institutional ownership, managerial ownership, tax avoidance, Book tax differences

THE USE OF DZIKRA ALGORITHM IN DETERMINING THE SHORTEST PATH OF SMALL AND MEDIUM INDUSTRY LOCATION IN PADANG CITY

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Abstract

This article aims to determine the shortest path of a small and medium industry location in the city of Padang by using the dzikra algorithm. The dzikra algorithm can determine the shortest path of a vertex by giving the weight of each edge or arc on the graph. This shortest path determination app is created using android-based smartphones.

Keywords: Dzikra algorithm, Edge, Graph, Android
PORTRAYING REALITY OF TAX EDUCATION IN HIGHER VOCATIONAL EDUCATION (HVE), PERSPECTIVE OF LECTURER AND COLLEGE STUDENTS

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Abstract

The purpose of this research is to explore tax education reality in accounting higher vocational education. The method used in this research is qualitative method by distributing unstructured questioner and deep interview for the respondents consist of lecturer and accounting students of Politeknik Negeri Padang. Each statement of the respondents is analyzed to justified taxation concept. The exploration result initiate that taxation itself has the spiritual values such as honesty, trust, responsibility, accountability, objective, independence, equality and fairness. These values could be implemented together in everyday life as a basic of actions and in taxation practice.

Keywords: Education, Reality, Taxation, Lecturer, Accounting Student

PENINGKATAN PRODUKTIVITAS USAHA MIKRO SALA DI PARIAMAN

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Abstract

Sala Lauak is one of the local cuisines in Pariaman, West Sumatera which is developing into various kinds of home industries like sala flour, ready fried raw sala, and ready consumed sala. The community service partners chosen are micro businesses Tepung Sala Marna which produces sala flour, and Sala Asli Piaman Ela which produces raw sala and fried sala lauak. These two businesses partners still had simple accounting and financial records management and traditional production equipment and packaging. Also, they did not have Home Food Industry (PIRT) permits. This Community service was done from March until November 2017. It aims at assisting these two partners to develop their businesses like improving the business records, increasing the product quality and quantity, and holding the Home Food Industry permit. This community service activity provided some trainings in financial records and management, some aids for production equipment and packaging, and a Home Food Industry permit.

Keywords: Sala Lauak, Micro business, Accounting, Business management, Packaging
COMPARISON OF ELECTRICAL INSTALLATION CALCULATION AT NEW DHAVE HOTEL BUILDING, PADANG, INDONESIA

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Abstract

New Dhave Hotel is located at Berok Siteba, Padang, West Sumatera, Indonesia was established to support the growth of Tourism in the city of Padang. This building consists of 4 floors where each floor has dimensions and functions of different rooms, except floors 2 and 3 that have the same dimensions and room functions. The problem that will be discussed in this research is the comparison of electric power installation requirement at New Dhave Hotel building between the calculation based on PUIL 2011 with electrical installation in the field. This study aims to determine the comparison between the calculations performed in this study with the installation of electricity in the field in order to get a better electrical installation. Electrical installation requirements that are compared in this study are the need for lighting, power requirements, delivery requirements and security needs. In the research results, there are differences in lighting needs in each room so that the power needs will be different too. The introduction used in this electrical installation is NYM cable 3 x 2.5 mm² for lighting, NYY 4 x mm² for basement floor and floor 1 panel, NYY 4 x 16 mm² cable for 2 and 3 floor panels and NYY cable 4 x 95 mm² for the main panel. The security used for each group per floor is a 1 phase MCB with different security flow ratings per group. For panels, the safeguards used are MCCB 3 x 35 A for basement floor and floor 1 panels, MCCB 3 x 63 A for floor panels 2 and 3 and MCCB 3 x 200 A for main panel. Safety on the main panel obtained on the basis of calculation, there is a difference in current rating with the safety contained in the field.

Keywords : electrical installation, electricity demand, general regulation of electrical installation
IMPROVING STUDENT REACTION TIME
THROUGH APPLICATION OF FOLIAGE PLANTS INDOORS

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Abstract

Reaction time is important for human to stay alive as well as keeping the quality of work in daily life or in sport. During a workday people may get tired, therefore their reaction speed may degrade. Keeping one’s vigilance is one key that believed can preserve reaction time. Nature can serve as source of restoring one’s vigilance. The purpose of this paper is to investigate the effect of indoor foliage plants on reaction time. A repeated measure design was used in the experiment using 6 foliage plants. Foliage plants were placed on the desk and on the floor, depending on its size. 16 subjects participated in the experiment. Three types of task were conducted during the experiment namely typing, addition and logical operation tasks. Results of this study show that reaction time was better in a room with foliage plants while people working on addition task and logical operation task. While in typing task, there is no difference between working with or without foliage plants. The results can be applied for designing a classroom, an office, or the other working places.

Keywords: reaction time, vigilance, nature, foliage plants, task, workplace

THE USE OF E-PORTFOLIO IN IMPROVING STUDENTS’ ENGLISH SKILLS

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Abstract

This research was the main research which found out the use of electronic portfolio (e-portfolio) in improving students’ English skills. A pilot study which was in purpose to find about the perception of teacher and students about the use of e-portfolio in supporting learning process had been conducted in English Department, Politeknik Negeri Padang last year. The result was that both students and teacher gave positive response to the use of this tool in learning teaching process (Aulia, Yulastri and Handayani, 2016). Furthermore, this main research examined whether the use of this e-portfolio can improve students’ English skills, in this case was students’ mastery of Grammar. In addition, Moodle LMS was still utilized as the tool which supported the use of e-portfolio. An experimental research design has been employed with English Department students, Politeknik Negeri Padang as participants both in experimental group and control group. The instruments were pre test and post test which had been given to both group. The data was analysed by using SPSS application. It was found that the post test result of students in experimental group increased significantly (average score 64) compared to their pre test result (average score 41). Meanwhile, the result on control group did not show significant rise which was average score 48 in pre test and the average score 56 in post test. This finding means that the use of e-portfolio can significantly improve students’ English skills, especially in their Grammar mastery.

Keywords: E-portfolio, Students’ English skills
DESIGNING ENGLISH VERSION VIDEO AS A PROMOTION MEDIA TO INCREASE THE MARKETING OF SELENDANG SULAM KOTO GADANG

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Abstract

The development of high technology machines has helped industries producing their products creatively, effectively, and efficiently. The used of these machines also has given negative effects to handcraft production by producing crafts which look as similar as the handcraft. Nagari Koto Gadang is known by its scarf which is called as Selendang Sulam Koto Gadang. The production of this scarf is full by hands. Unfortunately, there is a printed machine scarf which looks similar to Selendang Sulam Koto Gadang, and it is sometimes sold as Koto Gadang scarf by the sellers. The home industries of Selendang Sulam Koto Gadang like “Sulaman dan Silver Work Cici” and “Lili handy Craft” complaint that the number of order for Koto Gadang scarf has decreased since people tend to buy the printed machine scarfs which is cheaper than the handmade. Actually, by knowing the history of Koto Gadang scarf, people will understand the high quality of Selendang Sulam Koto Gadang, and will identify the big differences of the printed machine scarf comparing to Selendang Sulam Koto Gadang. Therefore, a historical video which shows the luxury Selendang Sulam Koto Gadang is made in English version. This video shows the embroidery process of Koto Gadang scarf in order to show to people that the quality of the real Koto Gadang scarf cannot be compared with the printed machine scarf. This video is given to Cici and Lili and also Amai Setia. It is hoped that tourists especially foreigners who visit their places can watch the video and feel interested to buy Selendang Sulam Koto Gadang. It is hoped that Nagari Koto Gadang identity as Selendang Sulam Koto Gadang production can also be preserved.

Keywords: Scarf, Koto Gadang, Historical feature video

OPTIMIZATION OF DIGITAL IMAGE PROCESSING METHOD TO IMPROVE SMOKE OPACITY METER ACCURACY

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Abstract

One of the parameters of exhaust emission testing on diesel engines is the level of smoke opacity. If the opacity is high then the emission quality is bad. The instrument for measuring smoke opacity is called Smoke Opacity Meter. The basic concept that is commonly used to perform smoke density measurement is by using a light sensor (optical sensor). Development of Smoke Opacity Meter using the concept of Digital Image Processing has begun to be done but the measurement results have not been as perfect as the concept of Optical Sensor. The thing that will be presented in this article is to implement the Digital image processing method to process the smoke opacity video data.

Keywords: Digital Image Processing, Smoke Opacity Meter, Automotive Measurement Tool
PENERAPAN METODE AHP DAN TOPSIS DALAM PENUNJANG KEPUTUSAN PEMBERIAN PINJAMAN DI KPN KAPUR WARNA

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Abstract

Penentuan anggota yang dapat meminjam koperasi pada KPN Kapur Warna dilakukan melalui proses verifikasi melalui wawancara dengan anggota yang akan melakukan peminjaman dan kemudian hasilnya diputuskan oleh pengurus koperasi. Proses verifikasi ini dilakukan secara manual, sering terjadi keputusan yang dihasilkan kurang valid, kurang berkualitas dan cenderung mengambil keputusan secara subyektif serta tingkat kemampuan menganalisa yang masih rendah sehingga rentan terhadap kesalahan dalam proses pemberian pinjaman. Oleh sebab itu, perlu adanya upaya yang perubahan sistem manual menjadi sistem yang berbasis sistem pendukung keputusan untuk mempermudah proses verifikasi tersebut. Metode yang digunakan dalam penunjang keputusan pemberian pinjaman di KPN Kapur Warna adalah AHP dan TOPSIS.

Keywords : koperasi, sistem penunjang keputusan, ahp, topsis

CIREBON CITY : KESULTANAN KACIREBONAN FOR THE CULTURAL HERITAGE BRAND

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Abstract

Cirebon City becomes the one of the special cultural city of Indonesia beside Jogjakarta, the Javanese cultural center of Java Island. Cirebon City consist of Kesultanan Kacirebonan. It is not easy to make a city as a tourist destination based on a cultural heritage of the sultanate, especially at this time is better known as culinary tour such as Empal Gentong and batik center Trusmi. This study aims to find the identification of cultural heritage city branding formation in Cirebon City by highlighting sultanate Kacirebonan. This research aims at increasing public awareness and to give contribution to regional stakeholder in forming a city branding in Cirebon city. Brand Destination Theory and Marketing Governance is used as concept of his study. The research uses descriptive qualitative method by employing data collection techques such as in-depth interviews and observation. The research located in Cirebon City -West Java. The results of this research is showed that the formation of destination cirebon brand based on Kacirebonan cultural heritage was difficult due to lack of cooperation between local government, sultanate and not supported by community engagement.

Keywords : brand destination, cultural heritage, sultanate, community engagement
OPTIMIZATION OF METHYL ESTER SYNTHESIS THROUGH MULTIPLE REACTION ROUTES USING IMPREGNATED ZEOLITE CATALYST

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Abstract

In this study, methyl esters were synthesized through multiple routes reaction, esterification and transesterification. The esterification reaction aims to reduced free fatty acid content. The transesterification reaction was performed to improved the formation of the ester bond. The esterification reaction last for 2 hours, the temperature was 65°C, the mole ratio of triglycerides to methanol (1:10). The transesterification reaction was carried out using an impregnated heterogeneous Zeolite-KI catalyst. This study aims to optimized the condition of the process operation using the taguchi method with 4 independent variables that was ratio of Zeolite-KI catalyst at 5%; 7.5% (w/w), temperature of transesterification reaction at 55°C; 65°C, ratio of triglycerides to methanol at 1:5, 1:10 (mole) and stirring speed at 200, 400 (rpm). The results showed that the independent variables gave a significant effect on the ester content. The optimum operating conditions were obtained at a catalyst ratio of 5% (w / w), the mole ratio of triglycerides:methanol at 1:10, transesterification temperature of 55°C, and speed of stirring at 400 rpm with the ester content of 80.38%.

Keywords: Esterification, Impregnated, Methyl Ester, Transesterification, Zeolite
ENVIRONMENTAL MANAGEMENT ACCOUNTING PRACTICE AND ORGANISATION BEHAVIOR ON ENVIRONMENTAL PERFORMANCE REQUIREMENT: AN INSTITUTIONAL ANALYSIS

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Abstract

Business organisations focusing on efficiency as main orientation to maintain the business process. However, when the business operations were faced the environmental ethical issues, then organisation will change. This study explores the environmental management accounting practices and its motivation in PT. Burung Garuda. To understand environmental management accounting practice, this study is using institutional perspective to analysis the data. Results find that the majority of information provided in environmental management accounting (EMA) is non monetary information which presented qualitatively and quantitatively. In consequence, the uncompleteness of EMA information is un able to be used for strategic decision making process. Beside that, EMA practice is only oriented to meet the regulation requirements, so that this study finds the indications of decoupling and ceremonial behavior in EMA practice. This study implies that those behavior will reduce usefulness of EMA report. Moreover, it will unchange the perception among organisation members that environmental management activities as inefficient activities.

Keywords : Organisation change, Environmental Management, Accounting, Institutional perspective, Decouple, Ceremony
DESIGN MODEL OF NAGARIMART FINANCIAL INFORMATION SYSTEM OF VILLAGE BUSINESS ENTERPRISES

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Abstract

This study aims to produce models and applications related to the Nagari Mart as a business entity owned by Nagari (BUMNag) with a modern and locally charged management pattern. The nagari / village government is currently required to own BUMNag. The proposed concept is the existence of a modern mini market owned by BUMNag that combines the concept of customer good market with the product of the nagari community in one shop (business outlet) so that it has high competitive value and modern. This existing trading outlet has a stock management system, sales, procurement, reports to modern applications. This is also done because the problem so far is difficult to penetrate the market for products produced by the home industry. This research is conducted by having Nagari Parit Malintang and Nagari Toboh Ketek which is considered to represent 2 (two) characteristics of nagari in West Sumatra. The results obtained have the design of DFD level 0 and flowchart documents related to procedures sales, purchases, cash receipts and cash out.

Keywords: Nagari Mart, BUMNag, Information System, Model
THE EFFECTIVENESS OF ZAKAT DISTRIBUTION SYSTEM IN PADANG CITY CASE STUDY: BAZNAS KOTA PADANG

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Abstract

Many scholars have urged the relationship of zakat with poverty reduction that zakat in Islam has two meanings, theological-individual and social. The first meaning purifies wealth and soul. The purification of treasures and souls is the theological meaning of the individual to a person who gives zakat to those who are entitled. This is the vertical relationship between a servant and his God. The first meaning is more dimensionless individual, purifying wealth and soul to get blessing. The second meaning has a social dimension, contributing to alleviating poverty, economic piety and injustice for social justice. According to Yusuf Qardhawi (1999) zakat has a multi-system function, namely as a system of financial economics, social finance, social politics, moral and religion as well. Baznas Padang City as an amil zakat institution that distributes zakat from Muzaki to Mustahiq.

The purpose of this study is to see the process of zakat distribution in Baznas Kota Padang and the extent of the effectiveness of the zakat distribution program in Baznas Kota Padang. The distribution of zakat from muzaki to the mustahiq with the expectation at another time mustahiq will become Muzakki. First, mustahiq come to deliver proposals to Baznas Padang. Then, Baznas staff will conduct a survey and decide wether to provide zakat to Mustahiq or not. This study will give recommendation to Baznas Kota Padang to make policy about distribution of zakat in the future. The data analysis used is a qualitative analysis that generated form of discussions in the form of descriptive answers, whether the distribution of zakat so far has been effective or not, which will eventually handle the problem of poverty. Zakat should play a important role in providing business capital and business training for the mustahik. Thus, it will create economic empowerment of the ‘ummah’. In micro, zakat funds play a role to meet the needs of mustahik. Therefore mustahik must get the facilities, management, and skills that will encourage them to be financially independent (Garry, 2011).

Keywords : -
COUPLING HYDROLOGY AND TERRAIN INFORMATION TO ASSES VULNERABILITY OF DISASTER IN AIR DINGIN CATCHMENT BY LAND USE SCHEMES

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Abstract

Current progression in development in the City of Padang has shifted from downstream to mid and even upstream catchment. Since year 2004, the anxiety to earthquake and tsunami following the major one in Aceh has triggered people migration to higher lands and locations away from the coast. This brings consequences in terms of the occupation of areas that once were farms in mid and upstream catchments. Air Dingin catchment is no exception, in which its downstream catchment is very narrow along the main stream, the Air Dingin river. Its upstream is dominated by primary forest by over 40 percent of the entire catchment, whereas farms and settlement occupies the middle and downstream catchment. Future scenario is that more people inhabit the middle and upper catchment, thus producing more surface runoff and faster concentration time to the main stream. In addition, open lands and steep terrain may induce land slide, reduce infiltration, and increase peak flow. This paper assesses the vulnerability of the catchment to the above-mentioned disasters, using topographic information and hydrology analysis.

Analysis of terrain and topographic information begun from collecting DEM from ASTER GDEM in 30 m resolution. The DEM was preprocessed and manipulated to produce sink-free DEM. Then DEM was processed to obtain gradient, aspect, and streams. These information were super positioned with land use layer. Initial land use data was obtained from BAPPEDA (Regional Planning Bureau) in 2010. Stream flow was calculated using synthetic unit hydrograph from precipitation data. Then some scenarios were played by shifting runoff coefficient, concentration time, and infiltration rate. Based on these scenarios, new flow rate was calculated and flood risk was evaluated. Furthermore, risk of land slide was evaluated using disaster index published by BNPB (National Body for Disaster Mitigation). Air Dingin catchment was then numbered by disaster index on suitable scale.

Initial analysis showed that there were four predominant land cover type, i.e. evergreen broadleaf forest, croplands, urban and built up, and cropland/natural vegetation mosaic. From 2010 to 2012 there was no significant change in land use. Therefore analysis was dated back to early 2005 or prior to massive migration. From this year onward, land use change fluctuates, yet the overall figure remained similar. An extreme scenario was employed by reducing upstream forest by up to 25 percent, followed by a change in runoff coefficient and a sudden increase in concentration time. This scenario increased peak flow by over 15 percent, and induced the risk of land slide.

Keywords: land use, peak flow, concentration time
MANAGING CREATIVITY IN ITS PARADOXES OF MOVIE INDUSTRY

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Abstract

Movie is a cultural product which is the expression of creativity of its creator, and a creative industry at once. As an art movie is interesting because it captures the reality of life and put it into scenes to be played on cinema. Indonesian movie industry has a long ups and down story in its trajectory. This research reveals what has happened with the Indonesian movie industry and why Indonesian films are less appreciated in its own country. The study was conducted using qualitative method started in the beginning of 2015 until the end of 2016. Documents study and in-depth interviews have been conducted with various informants namely movie-maker, audiences, cinema owners, and government representatives. Movie makers should know how to manage the paradox situation and keep the movie creative and artistic, but at the same time be able to negotiate with market and existing rules. The result shows that from 20 selected movies after new era of reformation filmmakers have different ways to manage their creativity, as well as the importance of four factors that must considered by movie makers to produce a superior movie as cultural product and creative industry at once.

Keywords: creativity, movie industry, paradoxes, managing creativity
SKYLIGHT SEBAGAI SOLUSI MODERN MENGHEMAT LISTRIK DI RUMAH

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Abstract

• Skylight dapat meningkatkan intensitas cahaya di setiap sudut area bangunan.
• Dengan adanya skylight, tidak perlu khawatir akan pemakaian lampu secara berlebih.


Keywords : Skylight, Hemat, Pemakaian listrik
PROTOTYPE OF GALODO MATERIAL DETECTION USING WIRELESS SENSOR NETWORK

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Abstract

This study design and implementation the prototype to detect the content of the existing material in river flows due to galodo (debris flow). It aims to assist communities in providing early warning system on the galodo threat. The designing and implementation of sound sensor to detect the galodo material and the result is sent to data server. The data from sound sensor will be transmitted using the microcontroller Arduino Uno and XBee as a router. The router will transmit the data to another XBee in receiver side. This configuration is designed to help sending data in certain distance using wireless. The data of sound sensor will process in data server using raspberry Pi. Time to sending the data will calculate to know how long the time delay from the sensor to data server. This configuration is expected can distinguish the material in water of galodo and help to the development of early warning systems of galodo.

Keywords: Database server, Wireless Sensor Network, Arduino Uno, XBee2, Sound sensor

ROAD DAMAGE DATA COLLECTION METHOD BY USING PHOTO SMALL FORMAT RECORDED BY DRONE

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Abstract

Nowadays, the function of drone is not only for photographic purposes, but it can also be used for recording road damage photo. The methods of digital aerial photogrammetric are developed faster than before. The degree of road damage can be obtained quickly through small format aerial imagery based on pixel size. To obtain a maximum pixel size to detect a maximum damage level of 1 cm, the shooting is done at a height of 24 m aircraft from the road surface. The shooting is made in a mosaic so as to produce a photo map with, and in the process with image rendering and rendering techniques to obtain three-dimensional maps of the length and width of each road damage seen on the results through spatial photo maps. The result of road damage measured by measure distance through image is then tested based on the measured sample measured directly in the field with a trust level of 97.83%. These results show that the accuracy of road damage measurements made above high resolution photo images is very effective for data collection of road damage.

Keywords: Road damage, Pixel size, High resolution

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THE IMPORTANCE OF TRAFFIC SIMULATION FOR ANALYZING ROAD CLOSURE AT INTERSECTION DEMANG LEBAR DAUN - KOL. BURLIAN STREET

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Abstract

The Girder of Light Rail Transit (LRT) in Palembang is going to be installed on the height of more than 3m. This dangerous activity requires a road closure in order to keep save traffic on the street. Intersection that connects Sudirman street, Demang Lebar Daun street, and Basuki Rahmat street is designed with signalized intersection at grade and with fly over upgrade. Usually road closure was planned by trial and error and directly monitored by several institutions. Nowadays, when the congestion problem becomes worse traffic simulation is badly needed to anticipate reaction of traffic movement. The aim of this paper is to know the queue length after the closure and what scenarios can be done to reduce the congestion. Simulation results show the effect of road closure on legs of intersection. The queue length on Kol. Burlian street and Demang Lebar Daun street, along the closed road is 356.71 m and 458.32 m subsequently. While on Basuki Rahmat street the queue length reaches 426.63 m. However, since turning left are forbidden from Demang Lebar Daun to Kol. H. Burlian, the rule to turn right and then use the U turn to climb up to the fly over, has cause longer queue length on the flyover, which is 441.84 m toward Charitas Hospital, and further 131.24 m after U turn toward Charitas hospital.

Keywords : Traffic Simulation, LRT, Queue length

GAMBAR KARTUN SEBAGAI MEDIA DALAM UPAYA MENINGKATKAN MOTIVASI DAN PEMAHAMAN MATA KULIAH AUDITING

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Abstract

This study is to examine the impact of the cartoon media on motivation and understanding improvement of the students in auditing class. This study uses true experiment with pretest-posttest control group design. Respondents are divided into two groups: students who are studying auditing theory and students who are running auditing practices. The respondents come from four classes where each class will be divided into two groups namely the control group and the experimental group. To avoid bias due to different ways of teaching, all experiments are conducted by the same lecturer and the lecturer does not provide further explanation regarding the material given. The results of observation and testing showed that the use of cartoon media can increase students' learning motivation and also able to improve students' understanding in studying auditing class.

Keywords : Media cartoon images motivation, understanding
GOOGLE MAP BASED INFORMATION SYSTEM FOR SCHOOLS MAPING IN SOLOK SELATAN

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Abstract

One of the main obstacles in education is the inequality in services and accesses to information. This obstacle is caused by the differences in geographical conditions. Therefore, there should be some efforts to overcome this obstacle. One of the them is to provide information services through an information system which is able to resolve those information inequalities.

This research is aimed to create a google map-based information system model application. This application is used for school mapping in a region of a regency or a city. The case study of this research is Solok Selatan regency.

The application has been able to display school informations along with location map, photos and a video. The data are more accurate and complete than the existing information systems or only based on Google Map.

This information system model application is expected to be used as school mapping in a region based on distribution for each education level, accreditation standard, and management status. This model can also be developed with the additions of relevant features.

Keywords: google map, information system, school
DAMAGE ASSESSMENT AND RECONSTRUCTION PROCESS OF SCHOOLS AFTER 2009 SEPTEMBER EARTHQUAKE

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Abstract

As one of earthquake prone countries, Indonesia, especially West Sumatera was struck by earthquakes frequently in the past. Large earthquake that occurred on 30 September 2009 with Magnitude 7.6, has resulted in damage to buildings were slightly damaged, moderately damaged, or destroyed. The earthquake has also caused a number of fatalities to 1,100 people died and 3,000 were wounded. In this paper, an assessment to damage structures especially to the schools (elementary schools and junior high schools) and the process of reconstruction are investigated. The damage situation of each elementary and junior high school is confirmed. These data are collected by doing interview and investigate the process for facilities that have problems in the reconstruction process and grasp the issues. Based on these data, it is hope that the damage assessment and the reconstruction process are not only about the damage investigation and rebuild the structures, but also to comprehend the situation during the process of reconstruction, including the problems happened during the reconstruction, in regard of seismic resistance of the structures, for a better disaster mitigation in the future.

Keywords: earthquake, damage, schools, assessment, reconstruction
ANALYSIS OF FACTORS AFFECTING THE CULTURE OF SAFETY AND HEALTH IN A PROJECT OF TOLL ROAD

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Abstract

Construction activity has a high level of risk that can cause unintended impacts, including safety and environmental aspects. Therefore, in any construction project, the implementation of occupational health and safety (OHS) system is necessary, as in the Construction Project of Toll Road. In implementation of OHS, safety culture is needed to create a safe work environment. This research aims to identify and analyze the factors that influence safety culture and to find out the main factor which has less impact on creating a safety culture. It is a descriptive study with a quantitative approach using descriptive analysis and factor analysis methods. The results showed that the factors included in a good category are labor competence, factors included in quite good category are safety procedures and regulations, labor communications, work environment, and labor involvement in OHS, while the factor included in a bad category is top management commitment. The main factors that have less impact on creating a safety culture are labor involvement in OHS and top management commitment. It is advisable for companies to optimize safety culture from the top management commitment and give priority to the implementation of OHS, and more involved the labors in planning and implementing OHS.

Keywords: OHS, safety culture, labor, management
PELATIHAN AKUNTANSI PERPAJAKAN UNTUK SISWA DAN GURU SMK JURUSAN AKUNTANSI

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Abstract

Accounting tax is part of competence important owned by accounting student. Accounting tax was created because of the basic principle been written in act taxation and its creation affected by taxation function in government policy. The purpose of accounting tax is to set the outstanding tax according to the financial reports. There are many teachers and students of accounting in secondary schools do not understand accounting tax yet. It causes the competence of their graduates can not been achieved. The causes are the lack of taxes literature, the lack of their understanding of accounting tax itself and the absence of varying accounting tax case exercises. The purpose of devotion is to provide an accounting tax workshop for accounting teachers and students starting from counting to reporting tax itself. The workshop targets are accounting teachers and students accounting of SMKN 3 and SMK Kartika 1-2 in Padang. Workshop activities are training, giving module tax and making varying accounting tax cases. The expectation results from devotion are the targets get accounting tax knowledge and skill. They also have tax reference and varying accounting tax exercises.

Keywords: Accounting, Tax, SMK, Tax Act
FAKTOR-FAKTOR YANG MEMPENGARUHI MINAT KONSUMEN TERHADAP MAKANAN OLAHAN BENGKUANG

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Abstract

Bengkuang (Pachyrhizus erosus L) is quite potential in the city of Padang and according to Statistic data of 2017 there are 119 ha of bengkuang harvest area with production of 3,101,10 tons spread over several sub-districts in Padang so that Padang is called "Padang Kota Bengkuang". Processed bengkuang is a healthy consumption product because it contains fiber that is good for digestion and other nutrients such as vitamin C and inulin are high enough where it is that distinguish bengkuang cake or other preparations with ordinary cake. This product can also be an alternative product souvenir specific city of Padang. The purpose of this study was to provide empirical evidence of the influence of price, product quality, service, physiological factors, health and promotion of consumer interest in processed Bengkuang. The population of the study were consumers who consumed the processed food of bengkuang in padang city. Sampling is done by probability simple random sampling method. The number of respondents in this study is 60 people. Hypothesis testing is done by using multiple regression analysis. The result of hypothesis test shows that price factor and physiological factors influence consumer interest in processed food of bengkuang. While the other four factors (product quality, service, health and promotion) does not affect the interest of consumer to consuming processed food bengkuang

Keywords : Bengkuang, Price, Quality, Service, Psychological, Health, Promotion, Consumer interest
TAUHID BASED ACCOUNTABILITY, THE WAY OF DEVOTION
IN KOPERASI PONDOK PESANTREN SIDOGIRI PASURUAN INDONESIA

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Abstract

This research is aimed to find the meaning of accountability at Koperasi Pondok Pesantren (Kopontren) Sidogiri Pasuruan East Java which is one of the best kopontren in Indonesia. This research uses qualitative interpretive paradigm and using etnomethodology as research method. Data collection was conducted during 2017 by semi structure interviews with informants sourced from internal and external kopontren, besides the result of depth observation and documentation in Kopontren Sidogiri. This study found that, at the highest level of accountability meaning for Kopontren Sidogiri is Tauhid based accountability, that is embodied by 1) the love of Allah SWT and Prophet Muhammad SAW operationalized by the internalization of the Prophet Muhammad SAW's character like Sidiq (true), Amanah (trusted), Tabligh (convey) and Fathonah (smart) as their organizational culture, 2) khidmatul lil ma'had or devoted to the pondok pesantren (read kyai) as part of lifetime responsibilities for all sidogiri alumni. To a lesser extent accountability is understood as a managerial process that can ensure that organizations are able to operate in accordance with good corporate governance applied professionally and consistently in their kopontren governance.

Keywords: Accountability, Tauhid, Kopontren
CONTROL OF LNG REGASIFICATION PLANT USING MODEL PREDICTIVE CONTROL

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Abstract

Optimization of liquefied natural gas (LNG) regasification plant is important to minimize costs, especially operational costs. Therefore, it is important to select the LNG regasification plant design and obtain optimum operating conditions while maintaining the optimum operating conditions through the implementation of model predictive control (MPC). The optimal criterion is the minimum amount of energy used and or the integral of square error (ISE). As a result, the optimum design is to use scheme 2 with an energy savings of 40%. While the optimum operating conditions occur if the vaporizer output temperature is 6°C. In order to maintain the optimum conditions, MPC is required with parameter setting P (prediction horizon), M (control horizon) and T (sampling time) as follows: tank storage pressure controller: 90, 2, 1; product pressure: 95, 2, 1; temperature vaporizer: 65, 2, 2; and temperature heater: 35, 6, 5, with ISE value at set point tracking respectively 0.99, 1792.78, 34.89 and 7.54, or improvement of control performance respectively 4.6%, 63.5%, 3.1% and 58.2% compared to PI controller performance. The energy savings that MPC controllers can make when there is a disturbance in sea temperature rise of 1°C is 0.02 MW and MPC controller also reduces error to product quality by 34.25% compared to the PI controller.

Keywords: Process Control, Control MPC, Process Simulation, Tuning Controllers, LNG Regasification Plant

UTILIZATION OF POTENTIAL WATER ENERGY IN IRRIGATION CHANNELS FOR PICOHYDRO POWER PLANT

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Abstract

This article explained about design of Picohydro Power Plant by using water potensial energy on irrigation channel to generated pico scale electric energy with maximum power below 5 KW. Actual discharge analysis, turbin selection, type of geterator used and impact of generator output toward loading were tested in the field to be able to produced PLTPH that produce electrical energy that can be enjoyed by rural communities with regard to secure generator system, environmentally friendly, easy to operate and affordable so that the electrical energy needs of remote rural communities can be overcome.

Keywords: Picohydro Power Plant, Water discharge, Head, Generator
ALAT PENGUKUR JARAK DENGAN OUTPUT SUARA
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Abstract
Distance measurement instrument with sound can be used not only by normal human being but also disabilities that have seeing trouble. This instrument possible using by them because it has LCD display and sound output. Measurement instrument with sound can measure distance in 10-79 cm range. Output analog voltage of sensor SHARP GP2D12 depend on the distance, the longer distance produce smaller voltage. The result show for 10 cm distance the analog voltage is 2,4 volt and 79 cm have voltage 0,4 volt. The instrument after some experiments have error 0,5 cm.

Keywords : Sharp sensor, Pengukur jarak, Suara, LCD, Microcontroller

COMPACT UWB BAND NOTCHED WITH C-SLOT ANTENNA
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Abstract
An UWB communication employs tremendously narrow carrier less RF pulses and stimulates the research activities in various designs of UWB antennas. A compact UWB rectangular monopole antenna with C-slot for rejecting unwanted band and having radiation pattern which consistently omnidirectional for all range of UWB frequency band is presented. The C-shape slot can be easily used to adjust the frequency rejection of antenna. Both numerical and experimental results show that the proposed antenna has consistent radiation pattern from 3.2 to 5 GHz.

Keywords : Antenna, UWB, C-slot
DESIGN OF OPERATIONAL STANDARD PROCEDURES GOODS OF PADANG CITY GOVERNMENT

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Abstract

This study aims to design the operational standards of procedures for goods of Padang City Government. This research is important because so far there is no standard in implementing and administering the Goods of Padang City Region so that every year always be the findings from examiner both from BPK and inspectorate. SOP prepared to guide the work in carrying out the stages of management that starts from the stage of planning, procurement, use, utilization by third parties, alienation, destruction, deletion and their administration. This study uses the object of research in the city government of Padang and is expected to be an example for other areas. This research was conducted by interview, observation and FGD. The results obtained will be tested on one OPD namely in this case the Financial and Asset Management Agency (BPKA) Padang City. The result of this research is the result of SOP document of planning, grant, maintenance, usage, utilization, alienation, destruction and elimination of BMD.

Keywords : Regional Goods, Standard Operating Procedure, Padang city governent
RETAIL MANAGEMENT AT MICRO ENTERPRISES

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Abstract

Micro enterprises have to apply appropriate retail management to get competitiveness at dominating modern and fast food products on the market. Competition at product, price, distribution and advertising has changed the pattern of public consumption that shift from traditional/ local products to modern and imported products.

Ikan Bilih is one of kinds traditional food that comes from the lake Singkarak West Sumatera. Retail store Selvi and retail store Dzaki are retailer whose main activity are produce: bilih goreng, bilih kering and bilih tepung, besides also selling traditional food of West Sumatera. This retailer growth has not shown well and their benefit just able to maintain the retail store survival. This activity aims to help solving problems partners (retail store Selvi and Dzaki). From the preliminary survey, it was found out that the problems that need attention are: from the production side: they not have Certificate of Household Food Products (SPP-IRT) and halal certificate from MUI, not yet mention the date of production and expired. While from the aspect of management: packaging which is still very simple, there is no price tag, not yet have financial report and trading business license (SIUP).

From these problems, IBM activities focus on: register trade license (SIUP), Household Food Products Certificate (SPP-IRT) and halal certificate from Majelis Ulama Indonesia. Design packaging that look like good and attractive by stating the date of production, expiration date, trademark and halal label. Packaging is made by using a plastic zipper model V.

Keywords : Trading business license, Certificate of household food products, Halal certificate, Packaging
CITY BRANDING: STRATEGI PEMASARAN PARIWISATA KOTA PADANG

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Abstract

A city considered to have qualified a strong brand if it has a history, the quality of the place, lifestyle, culture, and diversity of the marketable as a tourist and investment destination. Kota Padang is considered to have almost all of these qualifications, but a way of marketing their regions considered less effective and less understood by investors. The main constraint is the selection of non-conforming products and ways of communicating that does not refer to the branding communication and city branding. This study aims to look at the tourism marketing strategy in Padang through any city branding and inhibiting factors and supporting the efforts of the implementation of city branding. The research method applied is qualitative method. The method is likely to use a descriptive analysis. This study further highlight the process and meaning (the perspective of the subject). The theoretical basis used as a guide in order to stay focused and research in accordance with the facts on the ground. Focus Group Discussion (FGD) is used as a method of data collection. The results of this study, city branding is not applied in accordance with the process of work, more spontaneity without planning. As a result, vision, mission, and purpose of government is not consistent with the brand they were offering. Most bureaucrats Sumbar have not been able to explain their understanding of the consequences and city branding. On the other hand, the participation of the community to promote the city branding they are not so visible.

Keywords : Tourism marketing, Branding, Branding communication, City branding, Branding strategy
DOES THE VISUAL COMPLEXITY HAVE AN EFFECT ON THE CUSTOMER SHOPPING EXPERIENCE IN THE HYPERMARKET CONTEXT?

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Abstract

Recently the retail industry face challenges with the presence of the online channel, this has triggered retail industry to maintain their customer satisfaction through the shopping journey. Visual complexity is one of the factors that may affect the customer shopping experience in the retail store. In today competitive retail environment providing a positive shopping experience become the primary goal of a retail store since it could affect the patronage behavior and predict purchase behavior in the future. The purpose of this research was to examine the effect of visual complexity on the shopping experience which mediated by perceptual load, self-control and the moderation effect from the shopping goal. The conceptual model of this research was replicated and analyzed by Structural Equation Modeling (SEM) processed by Lisrel application. The data used in this study were the primary data obtained from questionnaires which distributed randomly to customers in two big brand hypermarkets located in Jakarta and surrounded areas. There were 300 samples collected and had filled the questionnaires through the exit interview session. The result of this research shown that visual complexity have a negative effect to shopping experience with the loading factor -0.51, which mean the higher visual complexity generate the lower shopping experience. This result confirmed the previous study which indicated that the low complexity in the retail stores was able to improve positive shopping experience. Perceptual load and self-control of the customer in this research were not demonstrated the mediated effect on shopping experience. Finding of this research in hypermarket context showed that the customers shopping goal were more utilitarian in nature. Future research should be benefited in hedonic samples from the hypermarket of customers. The r² result showed visual complexity effected 26.01% on the shopping experience, further research with additional variables along with visual complexity need to be investigated. This research should encourage managers in retail industry to be proactively manage the visual complexity in their retail store. The good visual merchandising and the congruity promotion message between the expected value and the real experience that consumer gets were suggested as the practical implication by this research.

Keywords : Shopping experience, Visual complexity, Perceptual load, Self-control, Shopping goal, Hypermarket
USING STATED PREFERENCE SURVEY IN EXPLORING TRAVELLER PARKING BEHAVIOUR: A CASE STUDY IN PADANG CITY

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Abstract

The number of motor vehicle in Indonesia tends to grow above 10 per cent annually resulting in an increasing transport related negative impacts. This phenomenon is also occurred in Padang city as indicated by, for example, more road space used for on-street parking especially in urban area. It has caused negative impacts to the urban road network performance like more severe congestion and lower road level of service. This study is aimed at exploring the behaviour of Padang City motorist’s parking behaviour by using stated preference survey and hence the negative impact of parking activities towards urban road level of service could be minimized. It is expected the findings from this research could assist the local government in managing existing and future parking facilities so that road performance could be maintained at an acceptable level.

Keywords: Parking, Stated Preference Survey, Road Level of Service

FINANCING HIGHER EDUCATION THROUGH WAQF ASSETS

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Abstract

Throughout the history, waqf had been witnessed as one of the generators to the development of education in Islam. There are many universities around the world which were supported and funded by waqf assets. Among other things, Al Azhar University, which has been established from the 10th century, is financed through waqf assets. Interestingly, this university could provide free education for many students from all over the world. The success story of Al Azhar University in managing waqf assets supposedly could inspire other Muslim countries to implement the same way. In fact, Indonesia, as the largest Muslim population in the world, is highly potential to develop waqf assets in supporting the higher education. Nevertheless, there are still very limited higher education institutions in Indonesia which are managed based on waqf. On the other hand, the rising cost of higher education demands for an alternative source of funding. Waqf, indeed, could be an alternative as it has been practiced for centuries. This study therefore aims to seek evidence regarding how waqf could support the higher education, in this case in Indonesian setting. Two case studies from two waqf-based universities were conducted. Through in-depth interviews, document reviews and observations, we found that the potential of waqf as the alternative source of higher education financing has not been realized optimally. There are some challenges identified in order to develop a sustainable waqf based university. Thus, this paper proposes some recommendations to both university management and waqf regulator for the future development of higher education waqf in Indonesia.

Keywords: Waqf, higher education, financing, Indonesia
COMPUTER BASED APOS MODEL IN MATHEMATICS LEARNING
(MODEL PEMBELAJARAN MATEMATIKA BERDASARKAN TEORI APOS
(MODEL APOS) BERBASIS KOMPUTER)

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Abstract
This article is intended to introduce the Mathematical Learning Model of APOS Theory (Computer Based APOS Model). The APOS model has been developed using The Plomp design consist of three initial phase: 1) preliminary research, 2) prototyping phase, and 3) assessment phase. The construction of thr model used the Joyce and Weil models, which consist of five components: Syntax, Social System, Reaction Principle, Supporting System and Impact. The syntax of APOS model consists of phases: Orientation, Practicum, Group Discussion, Class Discussion, Evaluation. The developed APOS model was valid, practical and effective already. The main supporting part of the APOS Model were Worksheets that contain activities in the Orientation phase, Practicum phase, Group Discussion phase, and classroom discussion phase. For Evaluation Phase we used separated instruments. APOS model was being implemented in Integral Calculus Course by Mathematics Education Students Semester 3 FKIP UNIB FY 2017/2018. In the Practicum phase, students work with computers using the Maple program for Calculus. Information collected through a postest for the Area of Polygon and Sums of Riemann topics as follows: The number of students who scored ≥ 80 was 33.33%; The number of students who scored ≥ 60 and <80 were 33,33%; The number of students who scored <60 was 33,33%. Information collected through an open questionnaire about which phase did the students understood the materials as follows: the number of students can understand the material in phase: Praktikum = 22.22%, in Small Group Discussion = 30, 56%, in Classroom Discussion phase = 33, 33% , and in Exercise phase = 13, 09%. It can be conclude that the model is good for improving student learning outcomes, and to improve students' ability in discussion.

Keywords : APOS Model, Syntax, Practicum Phase, Worksheet
KITCHEN TISSUE FROM DURIAN PEELS FIBRE

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Abstract

Tissue comes from bark fibres that undergoes few process such as grinding, milling and drying. Until now, the process of making tissue paper are still using bark as the polymer composites. This process for sure involves trees cutting and it has also been proven, the excessive usage of tissue paper can cause harm to the forest and environment. Thus, this research will explain and show on how to produce cleaning tissue paper made of durian peels fibre. In this research, durian peels are choose for its richness of fibres. By using decompose components as the alternative other than tree barks, can reduce the environmental pollution along with preserving the nature. This process undertakes manual method that includes cleaning process, submerge process, grinding process, milling process, filtering and drying process. This process is able to produce cleaning tissue paper that is equivalent to the commercial cleaning tissue in term of absorption.

Keywords : Durian, tissue, absorb

LOCAL NETWORK COMMUNICATION BASED ON VIRTUAL PRIVATE NETWORK (VPN) IN UNIVERSITAS MUHAMMADIYAH RIAU

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Abstract

Public communication path, including the Internet has security risk that is vulnerable to disruption. Whereas the local area network (LAN) has limited coverage area to communicate. In this case, Universitas Muhammadiyah Riau (UMRI) has 2 (two) separate buildings which makes it difficult to develop a local network. The use of wired communication will require considerable expense. In this work we apply Virtual Private Network (VPN) as the local network by using public medium. The network server does not use public IP but enables it to run anywhere as a computer network with public IP on the internet. We applied for a Linux the OpenVPN Server and OpenVPN Client for Linux and Windows environments. There are 2 main servers in the central building and 59 clients on both buildings that are implemented. This scheme not only improves accessibility on the local network, but also protecting the security of local data on a public medium.

Keywords : Linux, local network, OpenVPN, public, private, virtual, VPN
GREEN IT IMPLEMENTATION: A MODEL FOR CAPABILITY PROCESS ASSESSMENT FROM THE PERSPECTIVE OF ORGANIZATION OPERATIONAL

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Abstract

A study on the model of assessment for capability process of Green IT implementation has been carried out. The objective of this study was to examine the level of capability process of Green IT implementation from the perspective of operational of organization to achieve its goals. This study was conducted observationally and involved respondents from IT Centre as the administrator for development of IT in the university of XYZ. The data were collected through a questionnaire that asked the perception of respondents and checked the supporting documents concerning the Green IT implementation. This model of capability process assessment was a two-dimensional model. The capability dimension was referred to ISO/IEC 15504, meanwhile the process dimension comprised a series of processes that included planning of strategy (PS), application (A), monitoring and evaluating (ME) which were the cycle of process improvement. The study showed that most of base practice of the organization in the implementation of Green IT were not done and there was no work product. This study concluded that the Green IT implementation in University of XYZ was at level 0.

Keywords: Green IT, Assessment of process, Capability process, ISO/IEC 15504
EXAMINING LANGUAGE PLANNING AND POLICY IN INDONESIA
PERCEPTION OF STUDENTS IN UTILIZATION OF LOCAL LANGUAGE, BAHASA INDONESIA AND ENGLISH

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Abstract

Indonesian is a country which has a unique system of language utilization. The citizen of this country acquire at least three main languages, in which, each language has different forms in function and utilization. These three main languages can be identified as local language, Bahasa Indonesia and Foreign language. Local language can be identified as the first language or the mother tongue that must be acquired by Indonesian citizens. In fact, Indonesia with 17,504 islands has more than 753 local languages spoken by more than 300 ethnics with 1,340 tribes who live in Indonesia. The second language is Bahasa Indonesia which is also known as official language used among Indonesians. English, the most popular foreign language, becomes the third kind of language that should be acquired by people in this country. Several studies and literature reveal that currently local languages are in critical situations and extinction because people focus more on the utilization of Bahasa Indonesia and English in their communication. Indonesian government has established several regulations and policies which can be identified as the Language Planning and Policy to anticipate this situation. This study aims to analyse the implementation of language planning and policy based on students’ point of view on the languages. By applying quantitative analysis through distribution of questionnaire toward students of English Department, State Polytechnic of Padang, this study examines how these languages are used in communication. The study reveals that Bahasa Indonesia somehow has replaced the local language in certain contexts such as daily communication at home and in informal situation. This study also discovers that there is great concern and awareness among students about the way to maintain sustainability of local languages that they have.

Keywords: Language Planning and Policy, Local languages in Indonesia, Bahasa Indonesia, English as Foreign Language
PORTABLE SERVER FOR VOICE COMMUNICATION AND DATA

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Abstract

The technology needed today is voice and data communications. To present it required server but to set up the server takes a process and a long time. How to present those needs well and instantly. The portable concept is a solution and has grown in recent years. The USB port is a portable media and owned almost all computer device. USB port can be used for transferring data, acting as an interface for peripherals and even acting as a power supply for connected devices. This research aims to utilize computing devices to be used as a server, you can take them anywhere, and can be used at any time. It is expected to meet the needs for data and voice communication such as VOIP service, Website, FTP and Database and can be accessed and utilized by anyone

Keywords: Portable Server, VOIP, Web Server, Database Server, Sentora, Astersik, USB, Ubuntu, Live OS

FROM PALM KERNEL SHELL TO BIO-ABSORBENT

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Abstract

Oil palm, an abundantly available agricultural by-product in Malaysia has been reported numerously in the literature as one of the renewable energy. However, the investigation to develop activated carbon from oil palm kernel shell (PKS) is relatively underexplored. The feasibility of preparing bio-absorbent from this fibrous material by physical and thermal activation processes was investigated at the present study. Experimental results showed that PKS activated carbon by thermal activation at 500°C appeared to have significant effects as the potential low cost absorbent. This bio-absorbent exhibits non alkaline pH value, smaller pore size distribution with optimum pore volume, higher absorption equilibrium and identical microporous activated carbon with the lowest burn-off degree. The development of micro-porosities in these activated carbon suggest their feasible application in pollutant adsorption.

Keywords: Palm kernel shell, bio-absorbent, activated carbon, microporous
MENENTUKAN JUMLAH KLUSTER PADA ALGORITMA K-MEANS

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Abstract

Data clustering is an important process of identifying groupings or clusters in multivariate data. Clustering is a fundamental process in many different disciplines. Several algorithms are proposed in a literature of clustering. One of them is K-means Algorithm. K-means algorithm is the most commonly used because of its simplicity. The best number of a cluster in K-means has a problem. This study will conduct research to finding a number of the cluster using elbow method. Testing method use silhouette to measure the quality of clusters. Data set is an academic student and income its parents. The results are two clusters.

Keywords : Clustering, K-Means, Elbow, Silhouette

ENGLISH SPEAKING SKILL OF STUDENTS AT STATE POLYTECHNIC OF PADANG AND ITS CORRELATION TO ENGLISH LEARNING PROCESS AT SENIOR AND VOCATIONAL SCHOOLS

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Abstract

This study aims to investigate some factors that influence English communication skill of State Polytechnic of Padang students by referring it to English teaching and learning experience in Senior & Vocational High Schools in West Sumatera. This research attempt was specified into measuring the differences and correlation between students English learning process on both Senior High Schools and the English communication skills of State Polytechnic of Padang students. This study was conducted by using mixed methods and the data was collected by doing survey, unstructured interview with teachers, and observations at five of Senior High Schools and five of Vocational High Schools in five different regencies in West Sumatera. The findings reveal that (1) Most of the students (83.23%) cannot communicate in English well. (2) There are only 16.77% of them are able to speak or communicate in English. The findings of this study, based on a paired t-test toward Polytechnic students ability to communicate in English, can be concluded that: (1) lack of ability of Polytechnic students to speak English because their English language skills is very low since they followed the process of learning English in Senior and Vocational High Schools. (2) lack of ability of Polytechnic students to speak English because of the performance of English teachers in Senior and Vocational Schools is still low in conducting teaching and learning process.

Keywords : English speaking skill, English learning process
CONTROL DESIGN OF REACTIVE DISTILLATION COLUMN FOR DIMETHYL ETHER PRODUCTION USING MULTIVARIABLE MODEL PREDICTIVE CONTROL

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Abstract

Dimethyl ether (DME) as an alternative clean energy has attracted a growing attention in the recent years. DME production via reactive distillation has potential for capital cost and energy requirement savings. However, combination of reaction and distillation on a single column makes reactive distillation process a very complex multivariable system with high non-linearity of process and strong interaction between process variables. This study investigates a multivariable model predictive control (MPC) based on two-point temperature control strategy for the DME reactive distillation column to maintain the purities of both product streams. The process model is estimated by a first order plus dead time model. The DME and water purity is maintained by controlling stage 5 temperature in rectifying section and stage 47 in stripping section, respectively. The results show that the integral of squared error (ISE) values for the set point tracking in stages 5 and 47 temperatures can be reduced, respectively, 19.89% and 18.26% for the system under multi-variable MPC controller compared to the conventional PI controllers. In addition, the MPC controller is able to handle the loop inter-actions that is shown by more stable and non-oscillatory responses.

Keywords: Dimethyl Ether, Reactive Distillation, Multivariable MPC, Integral of Squared Error

ANALYSIS OF THE ARCHIEVEMENT SETTLEMENT INFRA-STRUCTURE SERVICES

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Abstract

The Government of Indonesia proclaimed the performance capability of settlement infrastructure in 2019 with a target of 100% clean water service, 0% slum and 100% sanitation services. This achievement is targeted gradually, by 2015 68% of the public are served by clean water, 10% building slum, and 62% sanitation service. To find out the target needs to be evaluated. Case study is the condition of settlement infrastructure services in Sumberkima village, Gerokgak sub district, Buleleng regency of Bali. Identification of indicators refers to the term of reference for settlement infrastructure by the Ministry of Public Works and Housing Republic of Indonesia. Data were collected through direct observation by the census. The result of evaluation in 2017 found that the capability of settlement infrastructure service is: clean water is 79.2%, achieved from target 68%; physical slum of residential building 20%, not yet achieved from the 10 % target; and sanitation services 63.6% achieved from target 62%. Achievements that have not been targeted receive special attention in the form of acceleration of slum handling, in accordance with city program without slum ‘Kota Tanpa Kumuh KOTAKU’ Buleleng district government.

Keywords: achievements, settlement, infrastructure, clean water, slums, sanitation
SEGMENTASI CITRA DENGAN MENGGUNAKAN BACKGROUND SUBTRACTOR, MASKING, DAN FILTER MORFOLOGI PADA CITRA KONDISI LALU LINTAS

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Abstract

From year to year the rate of population growth in Indonesia continues to increase by 1.49\% / year according to sesponus population in 2010 and so is the growth of vehicles due to community activities in the era of globalization, infrastructure development such as roads that are not balanced with the growth of vehicles that wind congestion traffic. One solution that can be applied by utilizing Raspberry Pi to monitor traffic density. Processed using background subtractor, masking, morphological filters and standard deviation which will then to the server. To reassemble the traffic density this tool is placed at a certain height and angle. Raspberry Pi recip traffic conditions in 3 levels (deserted, medium, and stuck).

Keywords: Raspberry Pi, Background subtraction, Image processing, Traffic density
PRELIMINARY IDENTIFICATION OF ROAD NETWORK VULNERABILITY DUE TO EXPANSION OF STATUS OF MOUNT MERAPI ERUPTION-IMPACTED AREAS IN YOGYAKARTA SPECIAL REGION

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Abstract

The eruption of Mount Merapi in Yogyakarta, Indonesia in 2010 caused many casualties due to minimum preparedness in facing disaster. Increasing population capacity and evacuating to safe places become very important to minimize casualties. Regional government through the Regional Disaster Management Agency has divided disaster prone areas into three parts, namely ring 1 at a distance of 10 km, ring 2 at a distance of 15 km and ring 3 at a distance of 20 km from the center of Mount Merapi. The success of the evacuation is fully supported by road network infrastructure as a way to rescue in an emergency. This research attempts to model evacuation process based on the rise of refugees in ring 1, expanded to ring 2 and finally expanded to ring 3. The model was developed using SATURN (Simulation and Assignment of Traffic to Urban Road Networks) program version 11.3.12W, involving 140 centroid, 449 buffer nodes, and 851 segments across Yogyakarta Special Region, which was aimed at making a preliminary identification of road networks considered vulnerable to disaster. An assumption made to identify vulnerability was the improvement of road network performance in the form of volume and travel time on the coverage of ring 1, ring 2, ring 3, Sleman outside the ring, Yogyakarta City, Bantul, Kulon Progo and Gunung Kidul. The research results indicated that the performance increase in the road networks existing in the area of ring 2, ring 3 and Sleman outside the ring. The road network in ring 1 started to increase when the evacuation was expanded to ring 2 and ring 3. Meanwhile, the performance of road networks in Yogyakarta City, Bantul, Kulon Progo and Gunung Kidul during the evacuation period simultaneously decreased in when the evacuation areas were expanded. The results of preliminary identification of the vulnerability have determined that the road networks existing in ring 1, ring 2, ring 3 and Sleman outside the ring were considered vulnerable to the evacuation of Mount Merapi eruption. Therefore, it is necessary to pay a great deal of attention in order to face the disasters that potentially occur at anytime.

Keywords: Mount Merapi, disaster, evacuation, model, SATURN, vulnerability
THE EFFECT OF PRODUCT QUALITY AND BRAND IMAGE ON PURCHASE DECISION OF FUNGICIDE PRODUCTS PT. BAYER CROPSCIENCE TO FARMERS IN MAJALAYA DISTRICT

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Abstract

The pesticide industry especially fungicide is currently at a level of intense competition. Each pesticide producer must be able to provide the quality of products expected by the farmers and able to create a positive brand image to remain an option for farmers. This study analyzed the effect of fungicide product quality and brand image on buying decision of farmers at PT. Bayer Cropscience in Majalaya District. The research was conducted by using descriptive verification method. For descriptive analysis used scale range analysis. As for the analysis of verifikatif used path analysis. The sampling technique used is stratified random sampling taken from farmer groups in Majalaya district. Based on the result of the research, it can be concluded that the quality of bayer fungicide product is on scale 607.6, it can be interpreted that the quality of Bayer fungicide product is quite high. While the brand image is on a scale of 600.5, it can be interpreted the Bayer fungicide product brand image is quite high. Then for the purchase decision variable is on the scale of 653.3, it can be interpreted the purchasing decision of the farmers on Bayer fungicide products is quite high. The partial effect directly between product quality to purchase decision is 0.104 or 10.4% while indirect influence between product quality to purchase decision equal to 0.116 or 11.6%. Thus the total direct and indirect effect of product quality on the purchase decision is 0.220 or 22.0%. Hypothesis testing results known to have a positive and significant influence. The partial effect directly between the brand image on the purchase decision is 0.303 or 30.3% while the indirect influence between the brand image on the purchase decision is 0.116 or 11.6%. Thus the total direct and indirect influence of the brand image on the purchase decision is 0.419 or 41.9%. Hypothesis testing results known to have a positive and significant influence. The effect simultaneously between product quality and brand image variables on purchasing decision is 0.639 or 63.9%. In testing the hypothesis is known to have a positive and significant influence.

Keywords : Purchase Decision of Fungicide Product, Brand Image, Product Quality, Farmer, Pesticide
CORRECTION OF THEDOLIT MEASUREMENT RESULT USING GPS GEODETIC ON A COVERED POLYGON

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Abstract

As a rapid enchacement in survey and mapping field its equipment have been creating with a modern innovation and technology. Some of conventional equipment are waterpass, theodolite, edm, total station etc. Newest survey and mapping equipment is GPS (Global Positioning System). It is a technology which rely on satellite in acquisition of survey and mapping data. GPS is a navigation satellite system (Navigation GPS) and location defining (Geodetic GPS) managed by United State. Geodetic GPS is GPS measuring instrument with very high accuration about 5-10mm. Some of its measurement applications are forest and plantation land.

In land measuring or mapping of situation it is a must to define map frame in form of covered polygon shape first. Defining a polygon coordinat can be used thedolit instrument. Distance and azimuth are the data that must be certified. Using Geodetic GPS the coordinat of that polygon can be generated directly without distance point or polygon datas.

It can be concluded that using geodetic GPS, coordinates of covered polygon of thedolit measurement result can be corrected as well as distance and azimuth datas.

Keywords: Survey and mapping, Correction, Thedolit, Geodetic GPS, Coordinated
RUMAH PERMANEN INSTAN DOMUS, EKONOMIS DAN TAHAN GEMPA

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Abstract


Metode yang akan diterapkan untuk melakukan pengabdian ini adalah dengan melakukan penyuluhan, sosialisasi, survey lapangan serta diskusi dengan pemuka masyarakat tentang Rumah Domus.

Keywords : Rumah domus, Ekonomis, Tahan gempa
OPTIMALISASI BIAYA DAN PENJADWALAN PROYEK DENGAN CRASH, PRECEDENCE DIAGRAM METHOD DAN MICROSOFT PROJECT

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Abstract


Penelitian ini bertujuan untuk optimalisasi biaya dan waktu penyelesaian proyek sehingga didapat waktu yang singkat, biaya yang minimal, tanpa meninggalkan mutu hasil pekerjaan. Metode penelitian dimulai dengan melakukan studi pendahuluan/kepustakaan, pengambilan data yang meliputi RAB, daftar harga satuan (upah, bahan, alat), time schedule, laporan harian, gambar rencana proyek. Selanjutnya dihitung normal cost dan normal duration, dan disusun network planning (NWP). Dari NWP dapat ditentukan aktivitas lintasan kritis, cost slope dan percepatan durasi. Selanjutnya dapat dihitung waktu dan peningkatan biaya akibat percepatan durasi. Nantinya didapat perbandingan biaya sebelum dan sesudah crashing. Hasil penelitian ini nantinya diharapkan dapat sebagai bahan pertimbangan dalam pelaksanaan proyek konstruksi agar tercapai waktu yang singkat dengan biaya minimal tanpa meninggalkan mutu yang telah ditentukan.

Keywords: Optimalisasi biaya dan waktu, Crash, CPM, Microsoft project
DESIGN OF TRAINER TRANSISTOR

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Abstract

Electrical and Electronic Knowledge is becoming difficult to understand for most of the students of Automotive Engineering Department FT UNP Padang. Electronics technology has been widely applied in the automotive world, for example ignition system using transistors. Students will have difficulty understanding, identifying and doing maintenance for transistor ignition system, if the basic concepts and principles of the transistor are not understood. The use of powerpoint as a media instructional, it can not fully solve the learning problems encountered by students. This article explains to create innovative media instructional in the form of small trainer’s transistor. Trainer’s transistor is made using Research and Development (RnD) methodology. Achievements are 2 units of small transistor trainers and equipped with data capable of explaining the basic concepts and applications of PNP / NPN transistors.

Keywords: Small Transistor Trainers
PENGEMBANGAN MESIN PENCACAH SERAT TKKS SISTEM HAMMER MILL

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Abstract

Tandan kosong kelapa sawit (TKKS) merupakan limbah padat dari industri perkebunan kelapa sawit dengan kandungan seratnya ±70%, dan dapat dijadikan sebagai penguat papan komposit. Dari hasil penelitian sebelumnya didapatkan sifat fisik dan mekanis papan komposit dari serat TKKS hasil defiberasi secara mekanis yang memenuhi standar SNI adalah serat panjang pada putaran 900 RPM dan serat pada putaran 600 RPM. Walaupun begitu tiap-tiap papan antara bagian kiri, tengah dan kanan terjadi perbedaan sifat yang sangat besar, terutama sekali kekuatan lentur dan kekuatan tekan sejajar serat. Hal ini disebabkan karena proses penyebaran perekat yang tidak merata, sehingga ada beberapa bagian dari papan tersebut terlalu banyak perekatnya dan bagian yang lain sedikit. Kedadaan ini terjadi karena panjang serat hasil defiberasi yang digunakan tidak sama, serat yang digunakan panjangnya bervariasi antara 3-10 cm. Serat yang panjang disamping proses pencampuran perekat sangat susah dan lama, juga mengakibatkan kekuatan papan tidak merata tiap-tiap sisi. Untuk meningkatkan efisiensi proses pencampuran perekat dan serat dan penyebaran perekat merata pada semua bagian sisi papan maka perlu menggunakan serat pendek yang seragam. Untuk meningkatkan efisiensi proses pencampuran perekat dan serat dan penyebaran perekat merata pada semua bagian sisi papan maka perlu menggunakan serat pendek yang seragam.

Penelitian ini bertujuan untuk merancang/mendisain dan membuat model mesin pencacah serat TKKS sistem Hammer Mill untuk mendapatkan serat pendek dengan ukuran yang seragam. Hasil rancangan mesin didapatkan kapasitas mesin ±150 kg/jam, daya penggerak 2,5 HP, diameter poros pencacah 3 cm dengan panjang 40 cm. Mesin terdiri dari unit saluran yaitu saluran masuk dan keluar, unit pencacah, unit body dan unit penggerak. Unit pencacah terdiri dari pisau pencacah terpasang pada 4 buah batang dudukan pisau pencacah, pin pemegang pisau, plat pembatas pisau dan poros pencacah. Unit body terdiri dari tutup atas, tutup bawah dan saringan. Unit penggerak terdiri dari motor penggerak, sabuk dan pully. Pada batang dudukan pisau pencacah terpasang 4 pisau ketam dengan panjang 8 cm, lebar 5 cm dan tebal 0,4 cm dengan sudut pisau 45°. Posisi satu pisau pencacah terpasang pada bagian atas batang dudukan dengan sudut 450 dan dua buah samping kiri dan kanan. Batang dudukan pisau pencacah berukuran lebar 8 cm x tebal 5 cm x panjang 13 cm, pin penahan dengan Ø lobang 1,5 cm, plate pembatas pisau Ø 30 cm, dan poros pencacah Ø 3 cm dengan panjang 40 cm. Dari hasil pengujian kinerja mesin pada diameter lobang saringan 1 cm didapatkan mesin berputar dengan baik, unit pencacah melakukan pemotongan serat TKKS secara kontinyu tanpa tersendat. Serat yang sudah terpotong keluar dari saringan dan terus ke corong keluar secara terus menerus sesuai pemasukan bahan. Didapatkan kapasitas mesin ± 80 kg/jam, keseragaman serat TKKS untuk ukuran serat <15 mm yaitu 8%, ukuran serat 15-2,5 mm ±75% dan ukuran serat > 2,5 mm yaitu 10%.

Keywords : Papan komposit, Serat Tandan Kosong Kelapa Sawit (TKKS), Pencacah serat TKKS, Sistem Hammer Mill
CONTROL TEMPERATURE AND HUMIDITY IN REFRIGERATOR TO ADD AGE SAVE AGRICULTURAL PRODUCTS BASED ON MICROCONTROLLER ATMEGA8535

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Abstract

Agricultural products such as fruits and vegetables after harvesting are very easy to experience decay and damage. Avoiding this is usually done by storing in a storage room where the temperature and relative humidity can be controlled, since each agricultural product has a different optimum value. The purpose of this research is to design and create a storage space, where temperature and humidity can be controlled and also to be made optimum value for each agricultural product entered. This research uses DHT11 sensor for temperature and relative humidity, this sensor is used to read temperature and humidity in storage room, this sensor signal is fed to ATMega8535 microcontroller to be processed. While setting the temperature using a cooling compressor with SSR drivers, and humidity settings using ultrasonic humidifier. After doing the research, the information obtained from the control value at 100C is 1.09% error value and the humidity control value is <80%. The error value is 0.05%, with the error rate <2%, then the control system made this can be used.

Keywords : Agricultural products, Temperature control & humidity, SSR, Ultrasonic humidifier

PENGARUH SEGMENT BOTTLENECK SISTEMATIK TERHADAP KARAKTERISTIK LALU LINTAS (STUDI KASUS: JL. JAMIN GINTING KM 14.5)

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Abstract

The transportation problem causing traffic jam in this study is bottleneck of the road, where downstream traffic capacity is smaller than the upstream, usually happen in the bridge enterance and where geometric changes such as 4 lane 2 line into 2 lane 2 line. This study aims to find a model that represents mathematical relationship of volume, velocity and density with manual count method in location Jamin Ginting km 14.5 with 4 types of models named Greenshield, Greenberg, Underwood and Bell and to determine shock wave value. The result of this research is Greenshield model (R² = 0.946338) in the narrowed path which best describes the value of the independent variable (speed) to the dependent variable (density) at the location and the shock wave value at 13.00-13.15 (ω = -1.46), 13.15-13.30-13.45 (ω = -1.75), 13.45-14.00 (ω = -0.90), the observed maximum queue length is 1.2 km while the most closely approximated result is the Greenshield model with 0.9 km. So the model that best to represent the field conditions is the Greenshield model.

Keywords : Volume, Density, bottleneck, speed, shockwave
EFFECT OF INCREASED RATIO OF MOL PEREAKTAN AND RATIO ENZYME RHIZOMUCCOR MEIHEI TO YIELD COCO DILAURYLAMIDE

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Abstract

In Indonesia the demand for household needs is increasing, for example, such as cleaning products with surfactant base material that serves as a dirt binder. The problem that arises today is that most petroleum-based surfactants (petrochemical surfactants), while the raw materials are classified as resource consumable and environmentally unfriendly because this type of material is not easy to decompose. Therefore, along with the development of technology, surfactants can now be produced with alternative raw materials derived from natural resources that are environmentally friendly and sustainable because it is a renewable natural resources. The advantages of making surfactants from natural raw materials are easily degraded, lower production costs, lower energy requirements and free from aromatic hydrocarbons.

Coco dilaurylamide is one of the alkanolamide surfactants that act as a stabilizer and a foam developer. Coco dilaurylamide is the name given to surfactants obtained from methyl laurate (C11H23COOCH3) reactions with diethanolamine using pure coconut raw material (VCO) in an esterification reaction, wherein the VCO contains high lauric acid. The surfactant synthesis of pure coconut oil (VCO) was carried out through the esterification stage at 650C using a H2SO4 (10% v/v) catalyst for 2 hours. After esterification stage, followed by amidation stage using Rhizomucor meihei enzyme biocatalyst with ratio 0,1%, 0,2%, 0,3%, 0,4%, 0,5% (w/w) and mole ratio methyl laurate Diethanolamine 1: 1, 1: 2, 1: 3, 1: 4, 1: 5 (w/v) at 500C for 4 hours. From the result of research of statistical data of variance analysis (ANAVA) it is known that the increase of mole ratio of pereaktan and the increase of Rhizomucor meihei enzyme ratio significantly influence the yield of coco dilaurylamide. Coco dilaurylamide with the highest yield has a pH value of 10, specific gravity (SG) 1.08 and a boiling point of 850C.

Keywords: Coco dilaurilamide, Rhizomucor meihei, Aromatic hydrocarbon, Petroleum
LIQUEFACTION PREVENTION USING CEMENT COLUMN METHODE

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Abstract

Liquefaction is a phenomenon of soil layer strength loss due to earthquake. It usually occurs when sandy soil is in water-saturated condition, then the pore water pressure will increase that leads the soil loses its carrying capacity. This condition causes damage to buildings and infrastructures. Padang City is one of the earthquake prone area. Thus, it causes severe damages in this city, such as the collapse of buildings, and the settlement of bridges and roads. This paper is aimed to find out the liquefaction potentials in Padang. The liquefaction has been analyzed by using Cone Penetration Test(CPT) at 40 location points in Padang. The result is, there are 26 points that have liquefaction potency and 14 points which does not. To overcome or minimize the risks of liquefaction, it has been done a preventive act by using cement column method. The sandy soil which have liquifaction potency has been modeled in the laboratory. Then, it has been reinforced using 2.5 cms diameter cement column with the variation of spacing between columns (2D, 3D, and 4D). From the shear strength testing, it can be concluded that the cement column can decrease liquefaction potency when the columns spacing is 4 cm (2D), and there is an increasing of the soil shear strength from 3.14 kPa to 16.86 kPa, and also in the strength shear value to 536.94%.

Keywords : Liquefaction, CPT, Cement column

APLIKASI JARINGAN SENSOR
SEBAGAI SISTEM CERDAS PENDETEKSI KEBAKARAN

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Abstract

Frequent fire handling problems in residential areas, offices and factories are felt quite slowly, especially in densely populated areas. The main obstacle to fire handling is caused by the slow reception of information when there is a fire for both officers and building owners who are not in place at the time of the incident. To meet the needs of fast and accurate information is required a technology with sensor network application system using wireless sensor network based on radio frequency and sms. Fire detection system is made using a wireless sensor with 2 nodes and a master. Each node has 3 sensors ie 2 temperature and gas sensors. Multi-sensor system can detect smoke source, temperature using MQ-135, LM35. The test is done in 2 rooms, each of which has a node with the master position installed in the middle of the node. The test results of the temperature sensor from the detection point until the data received master has an average error of 1% against the standard. Warning system in the form of sms received user about 1 second shortly after detection of temperature and gas data over a certain limit.

Keywords : Multi Sensor, Wireless sensor network, Sms
USE OF PHYSICAL CELL IDENTITY (PCI) ON DESIGNING 4G LTE NETWORK IN WEST BALIKPAPAN

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Abstract

Not evenly distributed of 4G LTE network in Balikpapan city especially West Balikpapan, it is needed a design of 4G LTE network so that all smartphone user in west Balikpapan can use this technology. In this research, 4G LTE network planning is using Physical Cell Identity (PCI) so that there is no interference between one with other cell.
The research method begins by performing simulations using Atoll software include: simulation of network planning without PCI, simulation of network planning using PCI followed by comparing the results. For parameter value of Best signal Level and RSRP did not change after applied by PCI, while for parameter value C / (N + I) after PCI usage increased by 0.05 dB, For throughput parameters increased by 0.064 Kbps, for the BLER parameter value did not increase which has an average of 0.03 but has increase coverage area of the best level from 6.1 km to 6.3 km

Keywords: LTE, 4G, PCI, BLER, RSRP
EXPANSION OF SMEs MARKETS EXPORT BASED ON WEB SERVICES

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Abstract

The development of export markets for small and medium enterprises (SMEs) is very important and must be addressed immediately because the ability of marketing to compete in the global market is very weak. The problems faced by SMEs “School Bag” in marketing include product development for export, global market access for export, ability to utilize information technology in marketing and export management. The purpose of the export product development program in the school bag creative industry is to improve the business management capabilities that include production management to produce export products and marketing management for exports so as to execute exports bag and compete in global markets, utilization of information technology in marketing support export. Specific targets are improving the quality, quantity and variety of products, increasing global sales volume, utilizing information technology in increasing global market access. Methods and stages in developing SMEs export that is identifying problems especially in marketing area, doing product development by doing combination of variation to get differentiation and diversification of product based on result of research, applying information technology application appropriate with condition of SMEs with activity of preparing web service start from arranging program, filling out content that appeals both product types and variations, pricing and sales systems, and provides training to operators. The result is that product variation increases according to consumer taste and there are excellent product, sales increase more than 20%, market area increase 10% especially domestics market, while for export market has happened marketing communication, marketing of SMEs can be accessed through web services always updated its contents.

Keywords: SMEs, exports, information technology, markets
AN EFFECTIVE COMMUNICATION CAN LEAD TO THE POSITIVE IMPACT OF EDU-TOURISM

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Abstract

Education Tourism (Edu-Tourism) is a unique experience that combines learning and travelling together. The edu-tourism is also a learning process which is not focused on economic gains for the participants and the trainers. This paper deals with the issue on the lack of information source about the knowledge on nature among the nature guiders which results in difficulties to guide the students perfectly at The Wetland Kampung Belukar Durian (WKBD) Sedili Kechil, Kota Tinggi, a small area situated at the southeast of Johor, Malaysia. In order to solve the problem, the edu-tourism has been introduced as a platform to deliver information effectively. To address this issue, an observation is conducted to identify the student’s problems during their visits at the wetland. The way of communication between nature guider and students on nature topic at the wetland are being discussed in this paper. The qualitative data are collected through the observation of 29 respondents and the interview of four stakeholders. The video and audio recording were the main sources used to record all the data. Based on the research finding, it can be conclude that the wetland did not provide proper guidance to deliver the information in edu-cating the students which cause the nature guiders to have the difficulty to communicate properly due to their language barriers. Subsequent to it, an e-learning guideline will be proposed to overcome the issue to enable the students to receive the positive impact of edu-tourism.

Keywords: Communication, E-learning guideline, Edu-tourism Dissemination of information
SITE RESPONSE ANALYSIS OF PADANG CITY FROM CONDITIONAL MEAN SPECTRUM INPUT MOTION (CMS) USING SOFTWARE NERA

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Abstract

In the design of earthquake resistant building structures, the general objective of dynamic structure analysis is to predict the response of the structure to the effect of ground motion that has Spectral Acceleration (Sa) at a certain period based on probability of exceedence of 10% or 2% in 50 years. The prediction of the structure response is determined by selecting the ground motion that matches several spectral targets and the ground motion is then used as input in dynamic analysis. In this research, earthquake wave propagation analysis from bedrock to surface layer (Site Response Analysis / SRA) was conducted. The required data are soil stratification and shear wave velocity parameters obtained from empirical correlation to drilling result data and N-SPT test. Ground motion synthetic bedrock used for earthquake wave propagation is obtained from previous research that adopted the Conditional Mean Spectrum (CMS) statistical approach so that the ground motion produced on the surface matches the prediction of actual structural response problem. SRA is based on the theory of single-dimensional wave propagation in time domain using NERA (Non-linear Earthquake Response Analysis) program. From this analysis obtained the maximum acceleration of peak surface acceleration (PBA), amplification factor and get the spectra response on the surface. These data are used as inputs for the determination of earthquake load on buildings in dynamic structure analysis.

Keywords : Site Response Analysis, Peak Surface Acceleration, Amplification Factor, Response Spectra, NERA
RUMAH USONIAN

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Abstract


Keywords : Rumah usonian, Ekonomis
APLICATION OF COLOR SEGMENTATION TO HELP PARTIAL COLOR BLINDNESS PEOPLE

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Abstract

Partial blindness is a condition where one can’t see some colors because the color blind can’t distinguish some light waves. To know the color blindness of a person is usually used tests using isihihara image, which consists of a mixture of random colors that contain patterns of numbers or images that will confuse the color blind. In this study, applying image processing to help color blind people see the pattern of numbers in the image ishihara. If people with color blindness can’t read numbers correctly then color segmentation is necessary. To process the image of ishihara in order to be seen by the colorblind sufferer used the method of color segmentation to separate the pattern of numbers in the image ishihara with other color backgound. By making the image that has been in the segmentation into a color reference then the color blind will be tested again using the image ishihara before segmentation process. Test data to color blind people. Before to the color segmentation, there was a lot of error reading by the color blind patient, the percentage of true numbers was only 17.898%, after the segmentation process there was an increase in the ability to read the pattern of figures contained in the image ishihara 38.63%, so the total of the percentage of readable numbers true to 56.354% .

Keywords : Color blindess, Color segmenttion, Enchancement ability to read

CONTROL OF CENTRALIZED POWER TOOLS USING POWER LINE CARRIER

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Abstract

Saving energy is a must-do for all human life, because it will save expenses. Energy is one of the energy that needs to be saved because it will impact fuel usage. One way to save electrical energy is to regulate the operation of these electrical devices. The purpose of this research is to design and make centralized power device control system. This study uses Power Line Carrier (PLC) as a modem to transmit data on existing electrical network system, data transmitted using microcontroller ATMega8535 as transmitter, and ATMega8 as receiver. To operate the electrical appliance using a 5 VDC relay, and this relay switch that will supply the electrical propulsion energy. After conducting the research, the error value of the operation of the electrical device is obtained by 0.05%. With a small error rate of 2%, then this tool can be used properly.

Keywords : PLC, Modem, Electrical Appliance, Microcontroller
PENGUASAAN BACAAN BAHASA ARAB DI POLITEKNIK IBRAHIM SULTAN MALAYSIA MELALUI TEKNIK MENILAI, MENYOAL, MEMBACA, MEMETIK DAN MENGANALISIS PETIKAN

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Abstract

Ilmu Bahasa Arab telah meletakkan empat cara kemahiran asas untuk menguasai bahasanya, antaranya ialah kemahiran membaca. Disamping itu proses pengajaran dan pembelajaran Bahasa Arab yang sesuai perlu digunakan bagi memudahkan kefahaman pelajar serta memaksimumkan kemahiran yang diperolehi. Oleh itu, kajian ini dijalankan bertujuan untuk memberi panduan pengajaran bahasa Arab yang sesuai kepada pensyarah Politeknik Ibrahim Sultan khususnya bagi memudahkan pelajar untuk menguasai kemahiran membaca ini. Satu kajian tindakan yang melibatkan seramai 90 orang pelajar dari semester tiga Kelab Bahasa Arab Politeknik Ibrahim Sultan telah dijalankan dalam kajian ini. Senarai semak, pemerhatian dan soal selidik telah digunakan sebagai instrument untuk menegumpul data ini. Hasil dapatan dari kajian tindakan yang dijalankan ini mendapati bahawa tahap kemahiran membaca pelajar semester tiga ini telah berada pada tahap yang tinggi. Dapatan secara keseluruhannya, dari segi strategi dan teknik yang diaplikasi telah terbukti membantu pelajar meningkatkan minat terhadap menguasai kemahiran membaca bahasa Arab dikalangan pelajar. Skor min domain kajian berada pada tahap interpretasi yang tinggi. Skor keseluruhan bagi domain kemahiran membaca (min = 3.74, sp = 0.34), penguasaan bahan bacaan (min = 3.49, sp = 0.51). Justern, dapatan kajian ini telah mencadangkan modul P&P kemahiran bahasa Arab antaranya kemahiran membaca sebagai garis panduan kepada tenaga pengajar bahasa Arab yang mengajar kemahiran asas bahasa Arab untuk diaplikasi.

Keywords: Panduan Bahasa Arab, Kemahiran, Penguasaan Bahan Bacaan, Teknik Bacaan
TAHAP KOMUNIKASI BAHASA ARAB DI KALANGAN PELAJAR KOKURIKULUM BAHASA ARAB DI POLITEKNIK IBRAHIM SULTAN JOHOR MALAYSIA.

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Abstract


Keywords : Tahap penguasaan bahasa, Bahasa Arab, Kaedah pengajaran bahasa

EFFORTS TO IMPROVE AKDP MODA SERVICES IN OVERCOMING THE ILLEGAL TRANSPORT IN WEST SUMATERA (CASE: TRAJECTORY OF PADANG - BUKITTINGGI)

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Abstract

The rise of illegal transport in West Sumatera has resulted in a decrease in the number of passengers of the AKDP mode and the ritual of service, so that efforts need to be addressed in order to overcome the problems of unofficial Transport through the improvement of the Inland Provincial Transportation Service in West Sumatra. This research is a field study in the form of descriptive analysis, using a quantitative approach with survey instruments is Revealed Preference Survey (RP Survey) and Stated Preference Survey (SP Survey). In the Stated Preference Survey (SP Survey), virtual mode alternatives offered to the respondent are 12 (twelve) virtual modes. Based on the results of the analysis shows that alternative 10 is the best alternative, where there is an increase of AKDP passengers by 49% if there is improvement on comfort factor ie AC, regular schedule (schedule certainty) and tariff of Rp. 15,000, - But on alternatives 11 and 12, there is a decrease in the number of AKDP passengers by 3% and 21% if the tariff is applied as Rp. 20,000, - and Rp. 25,000, -

Keywords : Service improvements, Illegal Transport, AKDP
PEMASANGAN PAVING BLOCK HALAMAN MUSHOLLA DESA GUO

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Abstract


Keywords: Paving block, Desa binaan Guo
MOBILE APPLICATION FOR SEARCHING COLLEGE LOCATION IN SOUTH JAKARTA USING AUGMENTED REALITY

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Abstract
At the end of high school and vocational high school there are activities that are usually done by students that is looking for information about the surrounding universities. The information search is often done by following a college promotion event such as edufair. However, the event often lacks information about the location of the college in detail, so that many students are not getting detailed information about the location of the college in the edufair event. Therefore, this research has developed an application that can facilitate in searching colleges. This application is named Find Campus, and equipped with camera features, map, and list campus. The Find Campus app display information about the college in the area of South Jakarta, covers five categories of universities ie universities, institutes, high schools, polytechnics, and academics. The Find Campus app displays some information such as college, name, address, accreditation, official website of college, phone number, college logo, and college pictures. This application comes with Augmented Reality feature that uses library from Wikitude and use location based services to find the college location and navigation. This Augmented Reality feature can make it easier for students to search universities. This feature utilizes the existing camera on the smartphone that aims to provide information about the location of the college. This application is expected to facilitate users in searching universities located in the area of South Jakarta.

Keywords : Mobile Apps, Augmented Reality, Location Based Service, Colleges, Web service

FACE SHAPE IDENTIFICATION BY USING PIXEL MEASUREMENTS METHOD AND K-NEAREST NEIGHBOR ALGORITHM

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Abstract
The shape of a human face has characteristics influenced by the shape of the head, sex, and age. There are several parts to determine face shape such as cheekbones, nose, jaw, mouth, chin, eyes, forehead, and supraorbital. Based on conducted study, face can be classified into 6 shapes: oval, round, oblong, square, heart, and diamond. Face shape identification can be used in fashion industry. This paper aims to identify face shape by using computer vision. IP Camera used to capture the human face in defined condition. Captured human shape converted to YCbCr to separate face from the background. Pixel measurements used to generate feature extraction data by calculating width and height of the face. k-Nearest Neighbor algorithm performed to classify face shape. The result shows that the algorithm through the proposed face shape feature extraction reaches prediction result around 77% - 83.33%.

Keywords : Face shape, Pixel Measurements, k Nearest Neighbour
NEWSPAPER VENDING MACHINE WITH COIN INPUT

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Abstract

Newspaper vending machine is an automatic machine for selling newspaper and customers operate it by themselves. This vending machine uses some coins for initiate selling process. This machine will serve the customers by eject the stuff after they paid by insert the some coins inside the machine. The particular angle on the machine, there is a slit to insert the coin. The inserted coin fall into the hook and the machine operates automatically. The advantages of vending machine method are meet the concept selling anywhere, closer to customer, cost down in sales. The aim of this research is to applied microcontroller to control newspaper vending machine, Programmable Logic Device (PLD) to count coin, light sensor to detect the coin, dc motor to eject newspaper from vending machine and LCD show instruction to purchase the newspaper. The type of microcontroller in this vending machine is ARDUINO ATMEGA 328, PLD IC is GAL 22V10 series and the coin using Rp 1.000,00. Newspaper inside the machine is daily newspaper area with the price is Rp 5.000,00. It means the buyer can buy the newspaper using 5 pieces of coin Rp 1.000,00.

Keywords : Coin, Newspaper, Vending machine

NEED ANALYSIS FOR PRACTICAL WORK MATERIALS DEVELOPMENT IN CIVIL ENGINEERING WORKSHOP OF STATE POLYTECHNIC OF PADANG

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Abstract

Learning practical work on the Civil Engineering Study Program in Polytechnics State of Padang has been running for 30 years. The practical learning material from 1987 up to now is still the same as it used to be. As we know the progress of technology is growing rapidly in the field now. If we want graduates of Civil Engineering program study able to compete with foreign workers in this global age, then inevitably learning material of practical work is the time to be reviewed. The purpose of this study is, (a) to find out whether the learning materials of carpentry practices in civil engineering courses need to be developed? (B) what materials are needed to improve the skills of graduates later on. This study uses descriptive statistics method, through the analysis of the questionnaire given to students and lecturers who teach teh subjects. The results of this study indicate that, 1] The material of carpentry practice is needed to develop, so that graduates have complete skills. 2] The material that needs to be developed is skill in terms of design and finishing.

Keywords : Need Analysis, Practical work materials, Carpentry
SUPPORTING STUDENT WITH DEAF IN EARLY READING ACTIVITY THROUGH THE EDUCATIVE VIDEO GAME

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Abstract
The aim of this article is to describe the early reading skill in student with deaf at kindergarten class through the educative video game. This research was conducted at an inclusive school in Jakarta. I begin the discussion by describing the children characteristic who have less language skill due to the deafness. Since they are deaf, they rely more on visual in studying and understanding their surroundings. One of the skill that student with deaf at kindergarten must have is the early reading skill. Early reading has become the big challenge for student who are deaf. Hence, special learning media is highly needed in order to support their learning process. The result show that children begin the early reading activity by identifying the letters and pictures made by teachers on the white board. The development of learning media through the video game consist of noun, verb, and short sentence. It includes the sound, cursive writing, as well the picture related to the appeared word or sentence. The research is using qualitative methodology and development research. Hopefully, teacher can utilise the research findings to develop more educative video games for the sake of the learning development for student with deaf.

Keywords: early reading, student with deaf, educative video game

INTERMODAL CONNECTIVITY FOR SUSTAINABLE TRANSPORT: A CASE OF INDONESIA

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Abstract
This paper analyze the intermodal connectivity in Indonesia by taking three city samples those are Medan, Solo, and Yogyakarta. The approach of this research is mixed approach which uses both qualitative and quantitative data from literature study, regulations and policies study, field observation and focus group discussion. The result of this research is the intermodal connectivity in Indonesia still needs more improvement and integrated actions from various stakeholders in order to achieve efficient, effective, and sustainable transport.

Keywords: intermodal connectivity, sustainable transport, SDGs
IMPLEMENTING GUIDED WRITING TASK TO DEVELOP BROADCASTING STUDENTS’ SCRIPT WRITING SKILL IN ENGLISH DEPARTMENT, STATE POLYTECHNIC OF PADANG

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Abstract

This research is aimed at developing student’s writing skill by implementing “Guided Writing Task” method. It is focused on the script writing of English Department, State Polytechnic of Padang’ students who are interested in producing broadcasting subject as their final project. Upon this time, the script result of these students yet provide a good standard in writing which indirectly make them prolong their time for graduation. This research is a qualitative study which based on theory of writing task stages where the data is taken from the students of English Department who produce broadcasting for their final project. The analysis is made by applying this guided writing task stages; Draw and Write Task and Shared Task. To validate it, a list of question is conveyed to the students. The result of these two tasks implementation and the students’s answer show that this research is beneficial in improving their skill in writing the script, particularly on the grammar, script organization and the idea shared.

Keywords : Script, Guided writing task, Draw and write task, Shared task
ANALYSIS OF MERCURY IMPACT ON BRAIN CELL SPECIMENS
USING IMAGE PROCESSING

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Abstract
Mercury is one of the most dangerous chemical elements. This element is present in our daily lives in various forms. Thermometers, Barometers and Spignometers are tools that use metallic mercury as a standard measure. In medical field, amalgam which is applied on filling dental cavity is one example of mercury use. Patients, as well as a medic, are highly at risk getting poisoned by mercury. Mercury could be absorbed into the skin, swallowed or inhaled. Being accumulatively poisoned can cause nervous system disorder such as Alzheimer, Parkinson, autism or cancer. For this reason, this research is done to analyze the impact of mercury on brain cells specimens. The Experiment is conducted to a number of white mice which are given a treatment of mercury effect periodically and the image of brain cell specimens taken through a digital microscope is processed by means of image processing.

Keywords : -

THE DEVELOPMENT OF SUSTAINABLE URBAN FREIGHT TRANSPORT PROGRAMS OF DEPOK CITY, INDONESIA

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Abstract
This paper is aimed to initially arrange the sustainable urban freight transport program of Depok, Indonesia. The AHP analysis is applied to be the basic of the arrangement. It is combined with heuristic combinatorial approach to set the best list of programs. The combinatorial approach deals with the programs which take into account the two aspects, i.e. operational and sustainable aspects, and consider two opinions of stakeholders, i.e. local government and industries. Both points of view are arranged in a hierarchy of the AHP. Respondents of the AHP consist of expert staffs of local government and logistics manager of private industries. The results show that the first priority group of programs consists of green vehicle, restriction zone and goods terminal, while the second priority group consists of consolidation and night delivery, and the third one is distribution center and parking regulation.

Keywords : Freight Transport, Sustainable, AHP
FAKTOR-FAKTOR YANG MEMPENGARUHI BIDANG KEUSAHAWANAN SEBAGAI SATU KERJAYA PILIHAN DALAM KALANGAN PELAJAR LEPASAN POLITEKNIK MELAKA

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Abstract

Kajian ini dijalankan bertujuan untuk mengkaji faktor-faktor yang mempengaruhi pemilihan bidang keusahawanan sebagai kerjaya pilihan dalam kalangan pelajar lepasan Politeknik Melaka. Kajian ini memfokus kepada tiga faktor utama yang mempengaruhi pemilihan bidang keusahawanan sebagai kerjaya pilihan iaitu faktor minat, kesesuaian kurikulum dan faktor persekitaran. Instrumen kajian yang digunakan ialah berbentuk soal selidik yang mengandungi 18 item soalan. Soal selidik ini berbentuk skala likert dan telah diedarkan kepada 80 responden Politeknik Melaka yang terdiri daripada pelajar 4 Jabatan Akademik iaitu Perdagangan, Kejuruteraan Awam, Mekanikal dan Elektrik. Keseluruhan, dapatan kajian menunjukkan pelajar Politeknik Melaka mempunyai minat dalam bidang keusahawanan iaitu sebanyak 92.5%. Justeru, dapat disimpulkan pelajar Politeknik Melaka mempunyai tahap kesedaran yang tinggi bahawa bidang keusahawanan dan menjadi kerjaya pilihan yang boleh menjana pendapatan yang tinggi selepas pelajar tamat pengajian mereka.

Keywords : minat, kurikulum, persekitaran
IBM USAHA KECIL BERAS JAGUNG

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Abstract

Farming corn is one of the livelihoods of villagers Luak Kapau Alam Pauh Duo and Pauh Duo Nan Batigo Sub Pauh Duo Kabupaten Solok Selatan. This work is generally done by men. Mr. Zulfi and Mr. Bunardi are families who live on corn farming, both of which are partners of the objective of Science and Technology for Society (IbM) program living in a district of Pauh Duo South Solok District.

Corn rice is corn that has been separated grains of corn from the cob then milled to grains of corn. One of the process of corn rice production is corn snacking process which is done at the time of post harvest of maize. The current maize snipping process in the village is still done by conventional process which takes a lot of time and energy, for 1 (one) corn cob needs 5 minutes per person, thus inhibiting the corn production process and reducing the efficiency of its production. Corn rice is a lot of benefits, among which can be processed into corn rice which is a lot of benefits for the health of the body, because corn rice is rich in phytochemicals and provide body protection from some chronic diseases. It is also useful for animal feed which also has a high nutritional value.

For manual processing it takes a lot of time and effort to shoot corn. With this process will reduce the quality of post-harvest maize, because the slow processing of corn and making corn can not be utilized to the fullest.

The objective of Science and Technology for Society (IbM) and the target that will be achieved is to make the right technology for corn milling by using electromotor technology (electricity and motor) to separate the corn grains from the cobs, so that corn can be better utilized to be corn and livestock rice.

The objective of Science and Technology for Society (IbM) program activities are planned for 8 months which are the solving steps of the problems faced by partners. The planned steps are as follows: Field surveys to partner sites, discussing issues that exist in partner communities with sub-district heads, library studies, team discussions with the steering committee, designing and making appropriate technology on corn processing using electric motors, counseling and entrepreneurship training and evaluation.

Keywords: Corn, Pemipil, Electric motor
UNDERSTANDING REFUSAL STRATEGIES IN ENGLISH
BY MALAYSIAN STUDENTS THROUGH WDCT

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Abstract
The study explores refusal strategies in English by Malaysian students through written Discourse Completion Test (WDCT). The speech act of refusal is a face-threatening act and therefore, it requires long sequence of negotiation for mitigation. This is challenging for non-native speakers of English especially for Malaysian as culture is embedded strongly in interlocutors as they decide their strategies to refuse to requests, invitations, offers, and suggestions. The findings showed that Malaysian preferred to use indirect refusal as their common refusal strategy such as expressing regret, giving explanation/reasons/excuses and gratitude. The findings are expected to be beneficial for further intercultural comparison studies.

Keywords: refusal strategies, speech acts, DCT, semantic formula, intercultural communication, non-native speakers

DETERMINATION OF HEALTHY FOOD BASED ON HALALAN TAYYIBAN CONCEPT

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Abstract
Many studies have been made to increase the awareness on Halalan Tayyiban food in the aspect of Halal, safety and cleanliness of the food consumed or produced. As the growth of technology progresses, peoples become more complacent. Issue on non communicative disease or NCD has arises which relates to less exercise and unhealthy food consumption practice. Therefore, this study aims to identify the criteria of healthy food consumption based on Halalan Tayyiban concept where the discussion is focused on health and nutritious principle by concept analysis. This study has identified 8 criteria in determination of healthy food which are emphasized on the nutrient intake. Since nutritious aspect were less discussed in Halalan Tayyiban concept, this finding help to explore broader understanding in the need to maintain continuity and prosperity of the Muslim community. It is also expected to generate a new dimension of Islamic dietary which beneficial by all parties.

Keywords: Halalan Tayyiban Concept, Healthy Food, Nutrition
REVERSE VENDING MACHINE: ALUMINIUM RECYCLE COIN

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Abstract

Along with the rapid development of technology in Malaysia, a product prototype named Reverse Vending Machine: Coin recycle aluminum is designed as an alternative to recycling aluminum cans and further supporting environmental care. This machine works automatically where it can detect aluminum and non-aluminum cans. This machine conceptualizes returns using a solenoid that will cut out the coin depending on the amount of drink cans being put into the machine. Software "MicroC PRO for PIC" is used as an intermediary instruction for product functions and Proteus 7.1 as a circuit simulation. For hardware, it consists of mechanical and electronic parts. Mechanical parts cover machine designs and materials to be used to form machines. Distance sensors are chosen in this product because of its functionality that can detect aluminum and copper. Infrared sensors are used to calculate the aluminum tin number that surpasses the sensor up to four, while simultaneously transmitting the signal to the controller circuit to display the amount of inserted tin on the LCD display. Four tin numbers will provide RM0.10 cents to consumers. If the consumer's inserted cans are insufficient, the number on LCD display will remain in the number of cans entered. The next user who puts up to four cans then get a coin. Transformer are used to stepdown 240V power supply to 12V in order to allow the operation of this machine.

Generally, this machine hopefully could be used as an effective solution system which is easy to use for recycle at the same time supporting the "Go Green" campaign in Malaysia.

Keywords: Vending machine, aluminium, aluminium recycle
BANANA PSEDOSTEM CORE CRACKER: AN INNOVATIVE FOOD PRODUCT FROM WASTE MATERIAL

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Abstract

Banana pseudostem core cracker is an innovation that transforms the remaining banana stems into food products. Typically, after harvesting bananas from trees, every banana tree is normally left behind and abandoned roughly in the soil to become organic waste. This causes environmental pollution. The purpose of this research is to make banana pseudostem core by exploiting this natural resource to create new products. In our country usually crackers are processed from fish, shrimp or mixed with other ingredients. However, for this innovation, pseudostem core is used as the main ingredient, while starch, wheat flour, salt, sugar, peppers, black pepper, curry leaves and garlic are also added to give extra flavor. The taste of this cracker is delicious. It has higher fiber content. Banana pseudostem core crackers are dry food products and have low moisture content. Hence it has a longer shelf life and can be stored for months. For research methodology, sensory evaluation was conducted using 5 point likert scale and food nutrition analysis was conducted at the Lotus Laboratory Service. Result from analysis nutrition content indicated that a 100 g of banana pseudostem core crackers contains 367 Kcal energy, 9 g of fat, 63.8 g of carbohydrate and 7.6 g of protein. In sensory evaluation, all attributes showed higher than 50% for good and excellent scale. In conclusion, banana pseudostem core crackers are products with green practices that have many low cost advantages and high fiber content.

Keywords: banana psedostem core, waste material, high fiber
DEVELOPMENT AN INNOVATIVE MANGO WRAPPING TOOL (IMW-T)

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Abstract

This paper presents a new design and development of an innovative and user-friendly tool by using mechanism of compression spring to wrap mango fruits in an efficient and systematic manner. The tool is capable to solve the problem faced by mango farmers or entrepreneurs during traditionally wrapping process. Previously, the wrapping process is handled manually by using paper wrapper and rope while ladder is sometimes used for tall trees. 30 mango fruits are picked for size sampling. The diameter for the mature mango fruits is within the range of 5.8 cm to 7.9 cm. The suitable casing size is determined to be 10 cm in which 3.1 cm is the tolerance. The tool is designed by using SolidWork 2016. Later, tool fabrication process is carried out including cutting and joining the parts such as steel compression spring, paddle, cable and PVC pipe. The analysis is focused on the compression spring and the maximum force of 45.117 N is applied on the pedal to pull the jaws while releasing the rubber band. Meanwhile, the tool is highly efficient and the time for the tool to wrap one mango fruit is 65 seconds compared to 190 seconds by way of traditional method. Significant saving in term of labour workforce is as much as 67% and the ratio of manpower requirements is reduced to 3:1. Among the factors contributing to the saving are the used of 210 cm long pole which eliminate the need of use a ladder. Lastly the tool is lightweight, convenience to use with minimum maintenance.

Keywords: Mango, Tool, Wrapping, Innovative, Reduce, Time, Manpower
MATURED COCONUT HUSK - AN ALTERNATIVE RAW MATERIAL FOR PRODUCING PARTICLEBOARD

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Abstract

Coconuts are known for their great versatility, ranging from food to cosmetics. The young coconut meat can be eaten as it is while the older coconut meat is widely used in cooking essential. Coconut shell consists of coconut fiber and coconut husk where, normally it will be thrown away as a waste material. Uncontrollable waste may cause any treat or harm to environment. Particle board, which also known as chipboard are manufactured from small pieces of wood, then compressed with synthetic resin or any suitable binder. As particleboards are one of the most important material in furniture field, this study is carried out to find an alternative of raw material on producing biodegradable-like particleboard. The samples were produced by mixing the matured coconut husk with polyester resin, and compress it in a mold within one day. With different percentage composition of coconut husk and polyester resin, varies properties of tensile test and bending test for four samples were defined. The finding shows that the particleboard with composition of coconut husk and polyester resin, enhanced the product performance in terms of lower absorption rate, higher tensile strength and higher bending stress. As coconut husk is biodegradable material, it proven that green-like waste material can be utilized and commercialized into something profitable yet still contribute to greener environment.

Keywords: coconut husk, polyester resin, particleboard
PSEUDO ELASTIC SHAPE MEMORY ALLOY REINFORCED CONCRETE BEAM SUBJECT TO MONOTONIC LOADING

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Abstract

This paper discusses and highlighted the structural behaviour of reinforced concrete beam with Shape Memory Alloy as partial replacement for steel rebar subjected to monotonic loads in a small-scale reinforced concrete beam. The objective of this study was to investigate the structural performance of pseudo elastic SMA reinforced concrete. Pseudoelastic SMA is a unique alloy that has the ability to undergo large deformations and return to their undeformed shape by removal of stresses. The size of the modelled and analysed beam are 125 mm × 270 mm × 1000 mm with 2 numbers of 12 mm diameter bars as main reinforcement for compression and 12 mm diameter of 12 as tension reinforcement hybrid with 12.7 mm diameter of smart pseudo elastic rebar using bar break coupler. 6 mm diameter of hanger bar with 100 mm c/c used as shear reinforcement bars respectively. The ability of SMA to recover and reduced permanent deformations of reinforced concrete beam was investigated and the analytical study of load–deflection relationship for a series of hybrid beams was undertaken. It was found that a hybrid system that incorporated SMA was a better choice for design because of their relatively high stiffness compared to the conventional reinforced concrete beam. The experiment results demonstrated the superior capacity of the SMA beams to recover inelastic displacements. The SMA beams sustained displacement ductility and strength capacity comparable to the conventional beams. In addition, crack formation in the concrete beams and this ability makes special this smart structure to maintain their serviceability even after a strong earthquake for seismic mitigation. Hence, the usage of the SMA can substantially diminish the risk of earthquake and can reduce the associated cost aftermath.

Keywords: Shape Memory Alloy Reinforced Concrete Beam Pseudo elastic Monotonic Seismic Mitigation, Shape Memory Alloy unique alloy that has the ability to undergo large deformations, Monotonic means static loads, Seismic mitigation is prevention technique to ensure building safe in earthquake loads
SHADOWING FOR ACQUIRING LISTENER FRIENDLY INTONATION

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Abstract

Intonation is very essential for communication. It is also largerly unconscious mechanism, and per se, a complex aspect of pronunciation. However, teaching pronunciation is neglected in English instructions of tertiary education since it is challenging for most EFL teachers. The objective of this one-shoot case study is to find out whether shadowing is able to help the adult learners acquire listener friendly intonation. The study involves 48 adult learners given the training on how to do shadowing adapted from Kadota dan Tamai (2004) and Kurata (2007) and also assigned to do shadowing using their smartphones in their own time and monitored regularly in eight weeks. The data are collected by recording all students reading the same script before and after the treatment. An English native speaker and two non-English native teachers observed the students’ intonation. The students’ intonation is found significantly improved since their pronunciation is more similar to the intonation of the listening material of the book than of their pre-test. It is concluded that shadowing is likely a beneficial listening technique to improve students’ intonation. Therefore, it is suggested to sometimes include shadowing in English instructions.

Keywords: listening, shadowing, listener friendly intonation
CUSTOMER CHARACTERISTICS OF SHOPPING ON MODERN RETAILS IN WEST SUMATERA, INDONESIAN

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Abstract

The growth of modern trade marked by the growth of modern shopping centers and stores is driven by urbanization, increased population income and lifestyle changes. The growth of shopping centers and modern stores is basically a picture of improving people's living standards. The existence of a shopping center is needed as a marketing tool for national and multinational retail networks. Changes in consumer lifestyles have been addressed by the manager of shopping centers and modern stores by changing the concept and format of stores or business space in accordance with the wishes of consumers will be more relaxed and comfortable shopping atmosphere. The population of West Sumatera until 2015 has reached 5,196,289 more people who always increase every year spread over 12 (twelve) regencies and 7 (seven) municipalities (BPS, 2015). City and local people or districts in recent years has been a shift in the behavior of shopping, in the choice of place and how to shop consumers in West Sumatra this community is more likely to shop at retail than modern retail. This phenomenon shows in general consumers have experienced behavioral changes in shopping that are more likely to prefer modern retail. The problems to be discussed in this research are; the characteristics of costomer on Modern Retail In West Sumatra, Indonesian. Sample of this research: modern retail consumer in West Sumatera indonesian, counted 200 respondents by using accidental sampling technique Non Probability sampling. The technique of data analysis to be used is using factor analysis.

Keywords: customer, Customer Shopping, Modern Retail, Business
SINTESIS LAPISAN CUPRUM (CU) DI PERMUKAAN BAJA MENGGUNAKAN METODA ELEKTRODEPOSISI DENGAN PENAMBAHAN EKSTRAK KULIT BUAH KAKAO (THEOBROMA CACAO) SEBAGAI INHIBITOR KOROSI

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Abstract

Corrosion is a natural phenomenon that can not be prevented the process of occurrence, but the timing may be delayed. Various efforts have been made in reducing the impact of losses caused by corrosion. One such effort is to coat the metal surface with a thin layer. As well as other efforts is to use an inhibitor. Efforts have been made to reduce the impact of corrosion loss by synergizing surface coating and use of inhibitors. Deposition of a thin layer of Cu using electrodeposition method with 0.5 M CuSO4.5H2O electrolyte solution and addition of inhibitor of Theobroma cacao peel extract. In this research has been done some variation that is variation of electrodeposition time and variation of concentration of inhibitor of Theobroma cacao peel extract. SEM characterization shows electrodeposition of a thin layer of Cu for three minutes, a voltage of three volts, and with the addition of an inhibitor of Theobroma cacao peel extract 1% producing a smooth, homogeneous and more uniform surface morphology. Based on the result of characterization with XRD obtained steel surface at electrodeposition dengan with the addition of an inhibitor of Theobroma cacao peel extract, there are sharper peaks of Cu. Based on the corrosion test obtained value of Inhibition Efficiency inhibitor of Theobroma cacao peel extract amounted to 70.5% with the addition of 1%, and 80.1% with the addition of inhibitor 1.5%. Based on this, inhibitor of Theobroma cacao peel extract can reduce the attack rate of corrosion on the steel surface in corrosive media HCl 1N.

Keywords : Electrodeposition, Theobroma cacao, Corrosion, Tafel
SOP FOR DEVELOPING DIGITAL PRODUCTS WITH USER-CENTERED DESIGN (UCD) FOR BVC4103 NEW MEDIA FOR VISUAL COMMUNICATION

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Abstract

User-centered design process (UCD) is one of human-centered in design process. In a way, objective on this research is to use standard of procedure (SOP) for materials BVC4103 New Media for Visual Communication by using User-Centered Design (UCD). The Standard of Procedure (SOP) is to create a variety of developing digital products in order to assist these teachers in preparing their classes. Upon the basis of a user–centered design approach, this study is aimed at a set of Standard of Procedure (SOP) of planning, designing, and developing a digital product. This concept paper research is literature review from collection of design from on-line and off line journal and books. From the literature review SOP in UCD are: i. User profiles, ii. User journeys, iii. Mental Maps, iv. Creating wireframes, v. User analysis/ testing, vi. Tabulating User Data, vii. Validate Idea. These SOP can manage to develop such a plan, design and develop digital product using user-centered design approach. Impact of these study can used guideline for designer or developer to develop a better and quality digital product. The study results indicate that, unlike the traditional instructional design approach, the proposed SOP takes into account the user’s needs, the capability of the project team and the resource availability for implementation.

Keywords: User Centered Design, User profiles, User journey

POTENSI DEMAND PENGGUNA KERETA PERKOTAAN YOGYAKARTA DARI PENGGUNA SEPEDA MOTOR DAN MOBIL PRIBADI

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Abstract

Besides the use of BRT, urban railway is believed to be one of the answer to reduce the congestion in urban areas. This study conducted to observe the willingness of motorcycle and private car users to change over urban railway. Questionnaire survey was conducted to interviewed about 678 motorcycle users and 86 private car users based on stated preferred method. The data collected was modelled using binomial logit method by the help of software Biogeme. The attribute used for modelling are travel cost, travel time, waiting time and mode transfer. The result of this study show that utility function of private car compared to urban railway is: $-1.76 - 0.00977\text{TravelCost} - 0.131\text{TravelTime} - 1.31\text{WaitingTime} - 0.834\text{ModeTransfer}$ while the utility function of motorcycle compared to urban railway is: $-0.991 - 0.0501\text{TravelCost} - 0.437\text{TravelTime} - 1.04\text{Mode Transfer}$.

Keywords: stated preference, binomial logit, Biogeme
OPTIMIZATION OF EFFECTIVENESS IN RADIATOR STRAIGHT FIN TYPE
WITH FLATE TUBE ANGLE VARIATION

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Abstract

Heat is the result of combustion that occurs in the combustion chamber with a very high temperature above 800°C. If this temperature is left it will cause the machine to be over heating so it can make damage to the engine components. In this case it needs a solution to keep the machine fixed in the temp work by way of equipping the engine with the cooling system. The cooling system serves to release engine heat to the environment through the radiator. Therefore, it is necessary to increase the effectiveness of the radiator optimally in order to maintain the working temperature of the machine under normal circumstances. The method used in this research is by using experimental method. Tests conducted on deer 5k radiator fin with a straight models to vary the angle of flate tube in the radiator. With this research, the best heat dissipation process is in the position of radiator with a slope angle of tube 5° with an average effectivity value of 0.0294 or can lower the temperature is lower when compared with no slope angle.

Keywords: effectiveness, slope angle, flate tube, radiator

THE ROLE OF TRANSPORTATION POLICY TO SUPPORT ACCESSIBILITY
AND MOBILITY IN THE DEVELOPMENT OF TOURIST DESTINATION
KUTA, BALI, INDONESIA

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Abstract

The increasing visits of tourists to Kuta as a tourist destination made the need for tourism infrastructure more vital to support the smoothness of accessibility and mobility which requires appropriate policy. The purpose of this research is to recognize forms of transportation policies that can support the smoothness of accessibility and mobility in tourism destination area. The compilation of results from this research would be the base for subsequent research to develop transportation policy in order to function more optimally also to be implemented for tourism destination in other places. This study use empirical approaches because the research instrument tend to be designed as qualitative design to get data and information from sources gained by using a set of semi-structured interviews (SSI) and on-the-spot field observation. Findings revealed among others that to support accessibility and mobility on developing tourism destination Kuta, transportation policies requires: 1). Making facilities for cyclist and pedestrian, 2). Development and optimization of central park Kuta as a park and ride, 3). Providing mass public transportation which integrated based on exclusive railway in tourism destination Kuta.

Keywords: Transportation policy, accessibility, mobility, tourism destination, park and ride, railway based
**Abstract**

A development in temperature detection system is the emergence of temperature sensor components in the array (pixel) is quite diverse one of which is MLX90621 which has an array detection of 4 x 16 with an accuracy of 0.1%. This study was designed using MLX90621 as a sensor for fire detection with temperature scanning method. Scanning results data will be stored and distributed through the Internet network, so that monitoring can be done more freely provided there is a network connection. The sensor used is the Infrared Thermal Array which has the temperature data output in pixels, so it requires a fast enough processor and has enough memory capacity to store the array data. This research also uses I2C (Inter Integrated Circuit) connected Ethernet Gateway to the controller used, on the other side connected network using RJ45 standard. Temperature Monitoring is carried out XY by motion of the motor carrying Infrared Thermal Array, by setting the initial point XY = 0,0 from the room and the maximum angle for a 3 x 4 m2 space. The information of a fire point is visualized in a GUI using different colors to make it easier for the operator or the owner of the room to recognize the hotspots. The results showed the average error detection rate of 0.1% with the biggest error of 0.25 oC.

**Keywords:** Infrared Thermal Array MLX90621, Ethernet Gateway, GUI
FRAUD PENTAGON ANALYSIS IN ASSESSING THE LIKELIHOOD OF FRAUDULENT FINANCIAL STATEMENT (STUDY ON MANUFACTURING FIRMS LISTED IN BURSA EFEK INDONESIA PERIOD 2013-2016)

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Abstract

This research aimed to analyze the likelihood of fraudulent financial statement explained by earning management using fraud pentagon theory. Fraud risk factors are explained using variables financial target, financial stability, external pressure, ineffective monitoring, nature of industry, changes in auditor, rationalization, changes in board of directors’s member, and number of CEO’s picture in detecting fraudulent financial statement proxied by earning management. Samples selected are 86 manufacturing firms listed in Bursa Efek Indonesia, for period 2013-2016. Data were collected from firms’ annual report and financial statement from idx directory. Data analysis using multiple regression methods was run using SPSS v.12. The results shows that financial stability calculated by changes in total asset ratio, external pressure calculated by leverage ratio, change in auditor and changes in board of committee’s member has an influence in explaining the likelihood of fraudulent financial statement through earning management, while financial target calculated by Return On Asset, nature of industry explained by changes in receivables ratio, rationalization explained by TATA, and number of CEO’s picture has no significant influence in assessing the likelihood of fraudulent financial statement.

Keywords: fraud pentagon, fraudulent financial statement, earning management
L1 TRANSFER IN THE ESL CONTEXT:
THE CASE OF MUET STUDENTS’ WRITING

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Abstract

The study intends to observe and analyse the extent L1 transfer in L2 learning of Malaysian students in terms of adapting the rules of L1 into L2. In Malaysian context of study, L1 is often studied in the view of negative transfer yet it is evident that it is typical, not always; at least one of the languages will exert influence in the learning of the other. Therefore rather than viewing it in a negative manner, L1 transfer can be utilised to assist L2 learning. The study consists of a group of 30 students of the similar L1 and target language L2 and data will be collected from a questionnaire to establish the current perspective of students and their language learning strategies. The students’ essays are analysed to determine the types of mistakes that were predominant in the essays and how their L1 may have contributed to this mistakes is justified by comparing the L1 structure to the target language. The most fundamental implication that could emerge in the in the study is in identifying the extent of L1 transfer and addressing a possible new pedagogical approach in ESL context where L1 can be used to assist target language learning.

Keywords: L1 First Language, L2 Second language, ESL English as a Second Language, L1 transfer
The transfer of elements from the first language, Compensation strategies
Communication strategies
NON-FINANCIAL PERFORMANCE MEASUREMENT
IN SMES EMBROIDERY AND WEAVING IN WEST SUMATERA

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Abstract

Performance measurement non-financial during this tends to in ignore because in traditional views in general performance on companies in measuring with financial capacity. To SMEs embroidery and weaving in west sumatra, performance measurement using the ability to impede in financial performance measurement effort especially in about the development of SMEs, because of the number of SMEs all only 17 SMEs with financial reports. Is caused by some things, are generally SMEs not need a financial report which is very important in measuring performance. The other is limited capability the owner SMEs in make a report a finance company and they are not all SMEs can be counted the financial reports. This research aims to understand the measurement of non-financial performance in measuring ability SMEs sector specifically to the embroidery and weaving in west sumatera by using the method with instrument qualitative data collection using indept interview and observation. The research is the continuation of research conducted in 2017 using quantitative methods. Further research that you can do is by using the method mix method so get the result that more perfect.

Keywords: Performance, SMEs, Non financial performance indicator
THE IMPORT SHIPMENT DWELLING TIME COMPARISON OF PT. XYZ BEFORE AND AFTER USING PUSAT LOGISTIK BERIKAT (PLB) OR THE BONDED LOGISTICS CENTER FACILITY AT PT. AGILITY INTERNATIONAL LOCATION II YEAR 2016

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Abstract

PT. Agility International is a company that provides Freight Forwarding, Transportation, Warehousing and Supply Chain Management services (Supply Chain Management) worldwide. The subject that occur in this paper is the high dwelling time on shipment of raw material import and packaging material. The purpose of this research is to know whether there is dwelling time decrease after PT. Agility International uses Pusat Logistik Berikat (PLB) or The Bonded Logistics Center facility granted by the Directorate General of Customs and Excise in handling the import shipment of raw materials and packaging material belonging to PT. XYZ. It was found that dwelling time on imported shipment not yet using The Bonded Logistics Center facility is 4,8379 days and on import shipment which have been using The Bonded Logistics Center facility 3,1428 days which means the use of The Bonded Logistics Center facility can decrease dwelling time equal to 1.69517 days or 1 day 16 hours 41 minutes.

Keywords: Dwelling Time, Bonded Logistics Center, Descriptive Comparative Analysis
HERBS OAT NUGGET: DEVELOPMENT OF NEW INGREDIENT ON HEALTHIER NUGGET

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Abstract

Based on sedentary, less active lifestyles and less balanced dietary habits which we are currently practicing, everyone is at a risk for a variety of illness. People who are busy working tend to take fast foods or cook frozen foods containing high amount of salt and fat, but low level of protein, vitamins and minerals that are essential for our body to function properly. Therefore, this study is conducted to produce a healthier product called Herb Oat Nugget. The objective of this study is to produce less calorie and fat nugget products compared to the common nuggets in market and also to produce a product that is acceptable to users in terms of taste, texture, color and overall acceptance. A sensory evaluation was conducted using 5 point Likert scale and food nutrition analysis was made at the Lotus Laboratory Service. The results showed low fat and caloric value in herb oat nugget samples (every 100g) has respective value of 5.1g fat and 202 kilocalories. While the sensory evaluation analysis showed that food samples are acceptable because each attribute showed a percentage of over 50% value for good and excellent scale. Based on the analysis and findings, it can be concluded that this nugget achieved its objective of reducing fat from 16g (normal chicken nugget in market) to 5.1 g. In addition, sensory evaluation findings can be concluded here that the herbs oat nugget products are feasible to be marketed.

Keywords: herb oat nugget, low fat, low calorie
HUMANITARIAN RELIEF ASSISTANCE TO FACE SUMATRA MEGATHRUST

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Abstract

Uncertainties and complexities carried out by disaster lead to severe barrier faced by stakeholders in order to provide decent assistance to beneficiaries. By precisely managing preparedness to achieve rapid response will significantly affect to relief efforts effectiveness. This study is aimed to review the recent preparedness of humanitarian logistics planning to deal with massive tsunami hazard faced by Indonesia known as Sumatra Megathrust. By comparing the contingency plan provided by the local government with the recent study concerning on the humanitarian logistics effort of particular hazard we investigate based on the three main aspects of humanitarian logistics including facility location, prepositioning stock, and relief distribution. Furthermore, the stochastic demands, supplies, resources reliabilities, and road access availabilities are considered in this review. The results shown that the remaining gaps have to be developed in future research in order to provide better assistance after disaster occurrence.

Keywords: Disaster, Humanitarian Logistics, Uncertainties, Sumatra Megathrust

DETERMINATION OF ENODE-B POSITION ON 2G / 3G BTS INSTALLED IN PADANG CITY USING GENETIC ALGORITHM

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Abstract

Long term evolution (LTE) otherwise known as fourth-generation (4G) is a mobile telecommunication technology issued by 3GPP release 8 and UMTS/HSPA (3G) network development. One of the LTE network’s supported components is ENode-B. ENode-B can be analogized as BTS that works as a set of transmitter and receiver that connect the user equipment and the network. The ENode-B requirements increase as the number of cellular service, user increase which result in a large amount of BTS tower. In the other hand, the construction of new BTS tower cost a lot of money and caused a bad visualisation of the city and also in environment security. Therefore, the ENode-B in the existing BTS should be optimized to increase the amount of user and service quality, to decrease the large amount of BTS tower and the other negative effects. In this thesis, the optimized of the ENode-B placement in the existing BTS in Padang city was done using genetic algorithm. The result is the placement of 21 of ENode-B in urban area and 23 of ENode-B in suburban area from the 118 of existing BTS. The result is ENode-B placement performance is 76% with optimal value 100% and the user percentage is 52%.

Keywords: LTE, ENode-B, Genetic Algorithm
ANALISIS VARIABEL-VARIABEL RESIKO PADA PELAKSANAAN PROYEK KONSTRUKSI

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Abstract

Setiap proyek konstruksi selalu dihadapkan pada kemungkinan terjadinya berbagai macam resiko. Resiko adalah hal-hal yang mungkin terjadi secara alami atau kemungkinan terjadinya peristiwa di luar yang diharapkan yang merupakan ancaman terhadap kelancaran pelaksanaan proyek konstruksi. Semakin tinggi tingkat kompleksitas suatu proyek maka semakin besar tingkat resiko yang ditanggung proyek tersebut. Untuk itu perlu adanya manajemen resiko unutk mengetahui, memahami, mengidentifikasi dan mengevaluasi resiko apa saja yang terjadi pada saat pelaksanaan proyek konstruksi. Penelitian ini bertujuan untuk mengidentifikasi variable-variabel resiko yang terjadi pada saat pelaksanaan proyek konstruksi di Sumatera Barat. Serta untuk mengetahui seberapa signifikan dan seberapa besar pengaruhnya terhadap kelancaran pelaksanaan proyek konstruksi. Quisioner yang disebarkan sebanyak 30 quisioner kepada Kontraktor Proyek Jalan. Response rate 100%. Dari data penelitian terdapat 14 faktor resiko dengan 84 sub faktor/variabel. 14 faktor tersebut adalah faktor alam, social, politik, ekonomi, undang-undang, kesehatan/K3, manajerial, teknis, budaya, logistic, lingkungan, desain dan teknologi, tenaga kerja dan kontraktual. Dari analisa data dengan SPSS versi 2.4 didapatkan faktor resiko yang paling berpengaruh terhadap proyek konstruksi jalan adalah : Faktor alam yaitu faktor cuaca yang tidak menentu, mempengaruhi sebesar 4,17%; Faktor sosial, sub faktor yang paling berpengaruh adalah masalah lahan/pembebasan lahan area proyek yang direncanakan, yaitu sebesar 4,17%; Faktor politik, sub faktor yang paling berpengaruh adalah aksi mogok kerja oleh pekerja di lapangan, yaitu sebesar 3,77%; Faktor ekonomi, sub faktor yang paling berpengaruh adalah aliran dana pelaksanaan proyek dari manajemen keuangan kontraktor tidak lancar, yaitu sebesar 3,87%; Faktor undang-undang, sub faktor yang paling berpengaruh adalah kesulitan prosedur dalam menerapkan peraturan perijinan/UU konstruksi yaitu sebesar 3,50%; Faktor Resiko K3, sub faktor yang berpengaruh adalah adanya pekerja yang sakit atau mengalami kecelakaan hingga terjadi kematian, yaitu sebesar 3,7%; Faktor Resiko Manajerial, sub faktor yang berpengaruh adalah sub faktor yang paling berpengaruh adalah terhambatnya keuangan pihak kontraktor, yaitu sebesar 3,77%; Faktor Resiko Teknis, sub faktor yang berpengaruh adalah ketersediaan bahan/material yang sampai di lapangan berbeda dengan yang dipesan, yaitu sebesar 4,17%; Faktor Resiko Budaya, sub faktor yang berpengaruh adalah komunikasi antara pengawas dengan pekerja kurang efektif pada saat pelaksanaan proyek, yaitu sebesar 3,40%; Faktor Resiko Logistik, sub faktor yang berpengaruh adalah tidak ada pengecekan pada saat pengadaan alat/mobilisasi, yaitu sebesar 3,97%; Faktor Resiko Lingkungan, sub faktor yang berpengaruh adalah sulitnya/terbatasnya akses masuk material dan peralatan ke lokasi proyek, yaitu sebesar 3,70%; Faktor Desain dan Teknologi, sub faktor yang berpengaruh adalah adanya kesalahan dalam estimasi tinggi, yaitu sebesar 3,73%; Faktor Tenaga Kerja, sub faktor yang berpengaruh adalah kurang tersedianya jumlah tenaga kerja di lapangan, yaitu sebesar 3,60%; Faktor Kontraktual, sub faktor yang berpengaruh adalah pemutusan kerja sepihak oleh owner, yaitu sebesar 4,40%. Hasil penelitian ini nantinya diharapkan dapat sebagai bahan pertimbangan untuk semua pihak yang terlibat dalam pelaksanaan proyek konstruksi untuk lebih memperhatikan faktor-faktor resiko selama pelaksanaan proyek konstruksi.

Keywords : Variable resiko, Proyek jalan
DESIGNING AND MANUFACTURING BOILER BIOMASS FUELED

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Abstract

Machine that can make a pressurized steam is usually being used in small industry such as in tofu industry, laundry, vehicle washes, growing mushroom etc. Today, there's lot of industry using a boiler that have big size so it's not efficient because it took to much place and based on survey on some location, there's still lot's of people using boiler without paying attention to their safety, this research is trying to solve that problem by designing vertical boiler biomass fueled. Biomass is chosen as a fuel because there's lot of source near us and it's known as alternative renewable energy. Coconut shell, sawdust, rice husk and wood stick are just a few examples of those kind of biomass

Keywords: Designing, Manufacturing, Boiler, Biomass, Pressurized Steam

AKURASI MODEL PREDIKSI FINANCIAL DISTRESS
(STUDI PADA PERUSAHAAN DELISTING DI BURSA EFEK INDONESIA)

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Abstract

This study aims to determine the empirical evidence of financial distress prediction model in companies that are delisted in the Indonesia Stock Exchange (BEI). Financial distress models used are Altman, Springate, Zmijewsky, and Groever. The object of research is all companies delisting in BEI in 2013, 2014 and 2015. While the study period is three years before delisting. As a comparison, also taken companies that are still listing from the same industry sector. The number of companies in the study sample were ten delisting companies and ten listing companies. The method of analysis used in this research is quantitative method with logistic regression analysis. The results show that the Altman model is the model with the highest accuracy in predicting delisting, with the prediction ability of 84.99% and the significance level below 5%. The Springate, Zmijewsky and Groever models show the prediction ability of 79.99%, 69.99% and 63.33%, respectively, but with a significance above 5%. So it can be concluded that the Altman model is the most accurate model predicting delisting in Indonesia Stock Exchange (BEI).

Keywords: Delisted, Altman Model, Springate Model, Zmijewsky Model, Groever Model.
PENGARUH MODAL INTELEKTUAL TERHADAP FINANCIAL DISTRESS

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Abstract

The background of the research was to determine the effect of intellectual capital on financial distress on mining companies listed on the Indonesia Stock Exchange. The independent variables used in this study are intellectual capital measured by VAICTM consisting of VAHU (Value Added Human Capital), VACA (Value Added Capital Employed), and STVA (Value Added Structural Capital). The dependent variable used is financial distress which is measured by financial distress prediction model by Altman Z-Score. The sample used in this research is a mining company listed on the BEI 2011-2015. The sampling technique is using purposive sampling method with total samples of 10 companies from total mining companies totaling 41 companies. The analysis technique used is simple linear regression. The results showed that intellectual capital affect the financial distress with sig value. 0.001 <α 0.005.

Keywords : Intellectual Capital, VAICTM, VAHU, VACA, STVA, Financial distress, Altman Z-Score.

DESIGN OF RELIEF DISTRIBUTION NETWORK:
PREPAREDNESS FOR FACING A DISASTER
(CASE STUDY: A PROBABLE TSUNAMI IN INDONESIA)

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Abstract

In the aftermath of a disaster, distributing relief supplies to survivors in affected areas is required in order to reduce human loss and severity. Design of a relief distribution network is critical to conduct an effective and efficient relief distribution during the disaster relief operation (DRO). This study is aimed to investigate three relief network designs encompassing a direct, an indirect, and a mix of a direct and an indirect delivery that could be applied in DRO. An appropriate design of a relief network to a certain situation would be provided by the lowest logistics cost. This study takes a case of a probable tsunami in West Sumatra, Indonesia, that has been predicted by scientists. The result should be beneficial to disaster relief managers to improve disaster relief operation performance.

Keywords : Humanitarian logistics, Relief distribution, Disaster relief operation
INNOVATION AND DEVELOPMENT OF PEARL HOLDING CRAFT PRODUCTS IN SUPPORT MALUKU TOURISM

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Abstract

The development of the tourism sector in the last three decades has had an impact on the increasing demand for local art products both tangible and intangible as a souvenir and experience for tourists who visit a destination. This increasing demand often leads to changes in the economic order in tourist destinations. This study discusses the role of tourism to the development of handicraft industry as a souvenir supplier in the tourism market. More specifically the study was conducted to examine the process of innovation in the development of small business products producing Pearl shell crafts in Ambon City. The results show that innovation and behavior in developing products is more dominated by the design desired by intermediaries compared with the design offered by the company. This indicates that intermediaries have more accurate information about market preferences compared to craft souvenirs manufacturers. Thus, the producers of handicraft producers for this souvenir are more likely to position themselves as "producer farmers" to ensure the economy sustainability of their production and yet have sufficient orientation towards market developments directly.

Keywords: Tourism, Innovation, souvenir industry, SMEs
ASSESSING RELIABILITY OF TROPICAL RAINFALL MONITORING MISSION (TRMM) OVER MOUNTAINOUS REGIONS OF TANAH DATAR REGENCY

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Abstract

The Tropical Rainfall Monitoring Mission (TRMM) has long been used as an auxiliary data for both prediction of rainfall in ungauged basins and for simulation in hydrological models that require spatially distributed rainfall input. Despite the termination since 2015, its valuable long history for over 20 years provides unmatched archive of precipitation record from space borne measurement. Yet, lack of validation in developing countries such as Indonesia for short temporal resolution up to daily scale has shifted its use away for operational purposes. Currently, designs of weirs, irrigation, and drainage require at least daily rainfall record when short time such as minute or hourly data are not available. Furthermore, variability in terrains with the present of mountains, hills, and valleys in West Sumatera also play a role in the variability of rainfall even at short distance. This paper discuss about the assessment of rainfall data by comparing TRMM data with ground data in Tanah Datar Regency, one of regency in West Sumatera with high variability in its landscape.

We use daily TRMM data over the Tanah Datar Regency from year 2000 to 2015. TRMM were acquired in 0.5° x 0.5° grid resolution in order to match ground measured rainfall. The TRMM data over study area were extracted using an algorithm and time series data were analysed. DEM (Digital Elevation Model) from ASTER (Advance Spaceborne Thermal Emission and Reflection Radiometer) in 30-m resolution was used to delineate catchments and to depict terrain variability. The data were validated using ground measured rainfall data from neighboring stations in Tanah Datar, Limapuluh Kota, and Sijunjung Regencies.

Analysis showed that data from TRMM were not always in consistent patterns with daily ground data. It both under estimate and overestimate the ground data. There was no consistent patterns at which it under or overestimate the ground data. At monthly scale, the RMSE (root mean square error) was less than 5 %, but at daily scale, over 10%.

Keywords: TRMM, precipitation, terrain
DESIGN OF MOBILE CLOUD COMPUTING FOR PADANG CITY, WEST SUMATERA GEOGRAPHICAL INFORMATION SYSTEM

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Abstract

Padang city is the capital of West Sumatera province that developed quite rapidly now a day. Along with population growth in this city, many of immigrant who want to settle, and the increasing number of tourists coming to the Padang city, West Sumatera. then mobility to be able to access public services in Padang city becomes increasingly important. By designing cloud computing in web based geographical information system and mobile online applications is one of the leading and the best technology since it combines the advantages of web based application, mobile computing and cloud computing. Thereby providing optimal services for web based graphical information System and mobile users. Mobile cloud computing integrates the cloud computing into mobile environment and overcomes the problems related to performance, environment and security. Also by design mobile cloud services for Padang city can give information, a user’s location, direction and maps of public facility the people who stay and lived in Padang city.

Keywords: web gis, mobile gis, public facility, cloud server, mobile cloud computing, location and direction, GPS
IMPLEMENTATION OF ANDROID APPLICATION FOR LECTURERS EXISTENCE

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Abstract

Android-based smartphone is the device that widely used by people, especially in Indonesia. A smartphone not only lets someone make telephone calls but also easy to access the internet, send and receive an email, open social media accounts like Facebook, Twitter and others. In addition, many chat applications such as Whatsapp, Blackberry Messenger, Line and others can also be run via a smartphone. Moreover a smartphone also can be utilized in monitoring and controlling a system in various fields such as education, transportation and so forth. In this research, an android-based smartphone was implemented for the information of lecturers existence. When a lecturer is very busy, it is difficult for the students to meet them to discuss about their study. The students do not know their lecturer existence, whether they are teaching, meeting or even be out of town. They often spend their time to wait for the lecturer. If they know the lecturers existence, they can spend their time for useful activities. Based on this case, lecturers have been created an application that will facilitate them in telling their existence. The Application is also provided for students and others that allows them to know the existence of the lecturers. This application was designed using MIT App Inventor, while the web server was built using Xampp Software. In the initial stages, this application is running on local host only. This is done to ensure the system is running as desired before will be realized online via the internet. This research has resulted The applications that are easy to use by lecturers and students. Hopefully, the implementation of this application can contribute to the smooth communication between students or academicians with lecturers, so that the teaching and learning process goes smoothly.

Keywords: Smartphone, Android Application, Lecturer existence
DETERMINATION OF MERKURY (Hg) ON WATER SAMPLE IN BATANG KUANTAN RIVER

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Abstract

Batang Kuantan River is a river that still has a wild gold mine along the flow. Problems arising from the gold mine is the content of the metal it produces, one of which is mercury. Mercury is used in gold mining. This research was conducted to see the mercury contained in the water in the flow of Batang Kuantan river. Geochemical studies have been performed by determining the pH and concentration of metal mercury (Hg) determination in water samples using Atomic Absorption Spectrophotometer (AAS). The results showed that the concentration of Hg on samples A1 and A3 is 0.009 mg / L and 0.0078 mg / L. The A2 and A3 samples found a low reading of the limit of detection. The concentration values of Hg samples A1 and A4 are above the standards specified by PP No.82 tahun 2001 i.e 0.002 mg/L.

Keywords : Mercury, Gold Mine, River Water

COMMUNITY PARTICIPATION IN MANAGING “PADANG BEACH AREA”

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Abstract

This research aims to find out community participation in managing Padang Beach Area. One of the policy strategies of Padang Tourism Board is to manifest community based tourism development. Padang Beach Area is now becoming one of tourism destination development targets in Padang, that is decanted in strategic plans of Padang Tourism Board in periode of 2014-2019. The method of this research is descriptive qualitative. Data is collected by conducting observation and interviewing some related informen who involve in the management of Padang Beach Area. The result shows that there are several forms of community participation in managing Padang Beach Area in terms of planning, organizing, actuating, and controlling or evaluating. The level of participation of local community is still low in managing Padang Beach Area.

Keywords : Community Participation, Padang Beach Area, Managing
ANALYZES OF ACCOUNTING INFORMATION ON SMALL MEDIUM MICRO ENTREPRISES (UMKM)

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Abstract
Managers need to be able to adjust themselves with business environment which always changes to accommodate the rapid development of current technology. This business environmental change is faced by all companies including big medium and small scaled companies. In order to succeed the competitive business, managers need to gain relevant and update information for making right decision. Managers are required to possess sufficient capacity and skills so that they can get useful business information. This study analyzes utilization of accounting information on Small Medium Micro Company (UMKM) in Padang. It applies descriptive statistics and hypothesis test by using simple linear regression analysis. Investigated variable includes educational background of managers, and accounting information. 50 UMKMs with small and medium sized cluster in Padang are selected by Slovin principles. Questionnaires are analyzed from 32 responders with the responders’ rate is 64%. Based on data analysis by using descriptive analysis on variable of educational education gained by UMKM managers, it shows that 53.1% of them graduated from Senior High School, 37.5% are bachelors, and the rest, 9.4% graduated from Junior High School. Meanwhile, for variable of accounting information was calculated by using 32 indicators. The highest indicator shows the utilization of notebook/records of product or service selling process which indicates mean value is 4.25. Indicator of utilizing human resource who specially operates accounting information system which shows the lowest score is 1.84. However, utilization of accounting information shows the average number of 3.15. Linear regression linear was used to show the influence of UMKM managers’ educational background toward utilization of accounting information. The value of t survey is 3.845 and sig 0.001 with regression value Y = -0.159 + 0.27 X. It means the managers’ educational background has positive influence toward utilization of accounting information.

Keywords: Educational level, Accounting information
MOBILE AUGMENTED REALITY ON INTERACTIVE DIGITAL PROMOTION MEDIA

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Abstract

Augmented Reality (AR) is currently taking place as a technology for data visualization, simulation and education as well. AR is currently widely used as a promotion media of goods/services. This is the underlying research, which is to create an AR-based promotion media for the information delivery of University of Al Azhar Indonesia, particularly the Department of Informatics Engineering (IF). This study begins by specifying the virtual information to be presented to the society, inform academic and nonacademic activities and also outstanding achievement of IF UAI. The virtual information displayed in a multimedia through text, images, 3D objects and video. As the trigger and coordinate to display virtual information in the real world, the need for a marker which is designed such that it becomes a book of IF profiles. Implementation is done by integrating IF profile books with virtual information via an AR-based mobile application “IARBook Apps” that display virtual information right on top of every page in the IF profile books. User testing conducted to the general public through educational exhibits. The results of questionnaires completed by respondents indicates a positive responses and curiosity of respondent to IARBook apps especially when viewing 3D objects that appear in the IF profile books. The uses of AR as a data visualization technology improve the quantity and quality of the delivery of information of IF UAI because it provides a new experience for the society to view and obtain information.

Keywords: Mobile application, Augmented Reality, 3D objects, promotion media
APPLICATION OF AUGMENTED REALITY TECHNOLOGY IN SPACE GEOMETRY LEARNING FOR SMAN 6 PADANG STUDENTS

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Abstract

Augmented Reality (AR) is a technology that is becoming the present trends in various kinds of products in the world, this is due to the combination of script programming as well as 3-dimensional art that manifested into an application simultaneously. Augmented Reality enable combine objects in the virtual world to the real world in real time. This research aims to incorporate Augmented Reality technology into the instructional process by applying the learning material on the geometry of space. It is expected the participants of learning information and knowledge about the material optimal geometry of space. Application of the technology of Augmented Reality in learning methods help the learning process more innovative. The creation of learning material GeoAR this requires the camera as input source by the way read and track marker (marker) and tracking system. Geometry objects that exist on the application is made with the software design namely Blender, then Editor of AR using is software Unity.

Keywords: Augmented Reality, Instructional Media, Marker, 3D objects, Geometry
SPIRITUAL CHARACTERISTICS OF MINANGKABAU SOCIETY IN WEST SUMATERA PROVINCE

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Abstract

Minangkabau is an indigenous people who dominate the province of West Sumatra with Spiritual characteristics of 100 percent Muslim community. The life of the community structure in Nagari Minangkabau run well, and very democratic with consensus mufakat, Bulek Aia Dek Pambuluah, Bulek kato dek mufakat and is based on Adat Basandi Syarak, Syarak Basandi Kitabullah, Syarak Mangato Adat Mamakai, Alam Takambang Jadi Guru. It was during this period that the role of niniak mamak in village began to disappear since Law no. 5 years 1979 about village administration, at that time all the rules more emphasize the principle of the central government (top down), the value and the real form of community cohesion with ethnic Minangkabau began to fade, Adat Basandi Syarak, Syarak Basandi Kitabullah stay slogan until the coming into effect of the Act No.22 of 1999 on Regional Autonomy, in Minangkabau known for its concept of returning to Nagari government (this is complete) and returning to Surau / Mosque (this is what needs to be evaluated).

Research on Spiritual Characteristics of Minangkabau Indigenous People In West Sumatera Province, it aims to evaluate the program back to Surau / Mosque and assist the West Sumatera Province government in achieving human resource development & development plan which is aimed at manifesting morality, faithful and devoted to God Almighty by instilling since early religious and moral values, as well as noble cultural values. This research is an applied research through survey on surau and mosque in 3 Nagari (sample research) of original Minangkabau area consisting of 3 Luhak, namely: 1. Nagari Pariangan (Tanah Datar district), 2. Nagari Batagak (Agam district) and 3. Nagari Sungai Beringin (district 50 Kota). This data collection technique is done by direct measurement, observation of local resources, in-depth interviews of mamak, Alim Ulama and Cadiak Pandai as well as local officials as well as secondary data collection. The results are obtained: 1. Technically in Nagari Sungai Baringin there are 15 Surau but Mosque only One with service level only 70% potency of Jollah Shollat Friday, in Nagari Batagak there are Surau and 5 Mosque can serve 135% potency Jumah Jamaat, and in Nagari Pariangan there are Surau and 4 Mosques can serve 120% of the potential of Jamaat Friday (Technically to 3 Nagari still need Space to make Surau / Masjid become area of Center of Community activity). 2. Board Resources: The three Nagari need to be cadre of Hafis Qur'an (as imam of Mosque) and Moslem law expert as advisors in Masjid, Azan (just need arrangement).

Keywords: Spiritual Characteristics, Life bernagari, Niniak Mamak, Floor area, Hafis Qur'an, Surau, Mosque
PIERC MULSA PLASTIC FOR AGRICULTURE PLANT

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Abstract

The use of plastic mulch has become a common standard in the production of high enough vegetable crops, both in developed countries and developing countries such as Indonesia (Lamont 1993). The process of planting horticultural crops often requires mulch plastic as a planting media protector. Before the seedlings are planted, it is necessary to hole the plastic. Farmers make holes with cans. The attitude of the peasants stood bent to tire, pain in skeletal muscle, and low. Solutions to the problem are needed to increase farmers' productivity and income. The large number of people who use piercing cans in the heat are inefficient both from safety and time efficiency. Therefore, a mulch plastic piercing device is very safe and time efficient. This tool is made with an automated system using multiple proximity sensors and some movers. Analysis of the pruning process using the method of Atifisial Neural Network or ANT type of back propagation, is a complex process modeling.

Keywords: Range Setting, Pierce, Artificial Neural Network

APPLICATION OF ARTIFICIAL NEURAL NETWORK IN COFFEE ROASTING PROCESS

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Abstract

The temperature setting of roasting to the color of coffee beans aims to obtain coffee quality with water content according to SNI standards. Temperature settings to obtain a standard water grade value in the roasting process of robusta coffee beans using temperature sensors and MC. Monitoring temperatures in robusta coffee beans to get the appropriate grain color, the result of the coffee bean image then processed with Delphi7 program to get the RGB value. Proper temperature setting in the roasting process determines the quality of a robusta coffee powder that produces the typical aroma, color and flavor of coffee according to the standard. Circuit testing is done with LabVIEW software as virtual instrumentation as well as analysis of roasting result using Atifisial Neural Network method or reverse propagation JST, is a complex process modeling.

Keywords: Temperature control, Roasting, Arabica coffee, Artificial Neural Network
EXPERIMENTAL STUDY OF ROTOR SAVONIUS WIND TURBINE
WITH OPEN END PLATE

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Abstract

Wind energy is one of the renewable energy sources that are environmentally friendly and always available in nature. One tool that can convert wind kinetic energy into electrical energy is the savonius wind turbine by transferring the rotation of the savonius rotor into the generator to generate electricity. This paper discusses the effect of addition of end plate with openings in wind turbine savonius type U 4 stage used as power plant. Savonius is one form of wind turbine capable of spinning at low wind speeds. Savonius has a good self starting at low speed. The objective to be achieved on the research is to improve the performance of wind turbine to generate electrical energy with the addition of open end plate. The method used in this research is an experimental method that is comparing the test results between wind turbines using endplate with openings and without opening, the test results obtained Cp value for wind turbine by using endplate openings higher than savonius without openings. The self-starting rotor increases. The rotor starts spinning at a speed of 1.3m /s..

Keywords: Savonius, renewable energy
PURIFICATION AND MOLECULAR CHARACTERIZATION OF PHYTASE AND PHOSPHATASE FROM KLEBSIELLA PNEUMONIAE ASR1

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Abstract

This study aims on the purification and characterization of phytase, acid and alkaline phosphatase enzymes from Klebsiella pneumoniae ASR1, a gram negative bacteria which was isolated from Indonesia soil. Molecular characterization of bacteria indicated that bacteria contain genes that code for phytase, acid and alkaline phosphatase enzymes which play vital role to release phosphorus from phytic acid or phytate hence making it available for monogastric animals. The three encoding genes, acid phosphatase gene (aphA) with 714bp, phytase gene (phyK) with 1263bp and alkaline phosphatase gene (phoA) with 1407bp were cloned in Escherichia coli DH5α using pGEM T easy vector. The recombinant plasmids were expressed using pET 22b+ expression systems in Escherichia coli DE3. The characterization of purified enzymes were done and SDS-Polyacrylamide gel electrophoresis analysis was conducted. The results indicated that, the bacteria acid phosphatase is a protein with molecular mass of 22kDa containing 238 amino acid sequence. The estimated molecular weight of bacteria phytase was 42kDa with 421 amino acid sequences. Both phytase and acid phosphatase proved to contain conserved active site motif RHGXRXP and HD sequence. While, the alkaline phosphatase showed an estimated molecular weight of 45 kDa with 469 amino acid sequences.

The purified acid phosphatase showed an optimal temperature and pH of 50°C and 4.0 respectively. While the bacteria phytase showed high activity and active at an optimal temperature and pH of 50°C, and 4.5 respectively. The alkaline phosphatase showed an optimal temperature of 70°C and pH of 8.0. The characterization results of three enzymes suggest that, phytase and phosphatase from, K. pneumoniae, are enzymes candidates which posses potential applications in food or feeds industry, agriculture, as well as in many other commercial applications.

Keywords: Klebsiella pneumonia, Phytic acid, Phytase, Phosphatases
PEMANFAATAN SABUT KELAPA MENJADI BERBAGAI PRODUK

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Abstract


Metode yang akan diterapkan adalah dengan melakukan penyuluhan, survey lapangan serta diskusi dengan pengurus Panti Asuhan, percontohan (yang dipandu oleh tim pengabdian) yaitu bersama-sama bergotong royong dalam pembuatan/pemanfaatan sabut kelapa.

Keywords : Daur ulang, Palet kayu, Ketrampilan, Nilai jual
PENGETAHUAN DAN KEMAHIRAN ICT DALAM PENGAJARAN PENSYARAH PENDIDIKAN ISLAM DI POLITEKNIK ZON SELATAN

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Abstract

Keywords : Pengetahuan, Kemahiran, Pensyarah, Politeknik
UTILIZATION OF INTEL GALILEO MODULE FOR SMART SYSTEM AS AC LED LAMP CONTROLLER

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Abstract

Intel Galileo is a microcontroller module that adopts the workings of a mini computer. In this smart system, it is used intel galileo module as light emitting diode (LED) AC controlled system. LED lights are controlled automatically for on and off from the intel galileo based control systems and controlled remotely using android based application that is accessible from smart devices such as smartphone and tablet. Besides using android based application is also able to control the intensity of light or lamp illumination level (dim and bright). To measure the LED AC light intensity is used lux meter and obtained the value of 46 lux the smallest state the dimmest light and the highest value of 596 lux for the brightest light. Measurement of the value of illumination level is necessary because people need different levels of illumination.

Keywords: intel galileo, smart system, LED

PEMANFAATAN EKSTRAK KULIT BUAH KAKAO (THEOBREMA CACAO) SEBAGAI INHIBITOR KOROSI PADA ELEKTRODEPOSISI LAPISAN BAJA DENGAN NIKEL(Ni)

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Abstract

Performed Ni layer electrodeposition process on steel substrate using 0.5 M NiSO₄.6H₂O solution with addition of inhibitors extract cacao. In this research, electrodeposition time variation and concentration variation of inhibitor extract cacao with 3V 2 mA voltage. The morphological differences in steel before and after electrodeposition are different. As well as the addition of inhibitors extract cacao also affect morphology and minimize the occurrence of corrosion on the steel surface. Based on the characterization results to see the morphology using optical microscope and SEM, better results were found at 1% inhibitor concentration with electrodeposition time for 25 min. Seen steel surface more evenly and more smooth. Viewed with XRD results the resulting peaks are thinner with the addition of inhibitors extract cacao. The result of efficiency of inhibition of corrosion rate measurement by using potentiodynamic polarization, obtained% IE for 1% concentration equal to 16.82% and for concentration of 1.5% equal to 66.88%, increasing of inhibitor concentration hence greater and better inhibition efficiency also the compound acts as a corrosion inhibitor. From the measurement with the method of weight loss found the rate of corrosion and inhibition efficiency increased with the increasing concentration of inhibitor extract cacao.

Keywords: Steel, Electrodeposition, NiSO₄, Inhibitor extract Cacao
IMPLEMENTATION SPEECH RECOGNITION USING KINECT TECHNOLOGY

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Abstract

The implementation of speech recognition processing has grown rapidly so it can be used for various applications such as voice recognition technology using Kinect. Kinect is a motion sensor that has been equipped with speech recognition / voice detection. Kinect has multi-array microphones and produces analog signals. The introduction of speech through kinect technology is a human machine technology that is Automatic Speech Recognition (ASR).

The initial stages of the development of speech recognition through kinect is to create a voice detection function and used as a speech recognition database. The speech recognition process uses Mel Frequency Cepstrum Coefficient as a feature extraction, to distinguish one voice from another. Then the Hidden Markov Model (HMM) as a training and pattern recognition. The speech recognition process uses this kinect by searching for the highest probability of a word with a user's spoken word using the HMM method.

Keywords : speech recognition, MFCC, HMM, Kinect

GAMIFICATION ON SOCIAL MEDIA ONLINE SALES SITES USING TREASURE HUNT GAME DESIGN

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Abstract

This study reviews problem analysis up to evaluation that refers to Design Research Methodology (DRM). Analysis of the problems starting from the social media that is now widely used for online sales, so the social media engagement of customer can affect customer loyalty of online sales. Gamification using treasure hunt game design to be proposed solution, because gamification can increase user engagement to social media. Gamification with treasure hunt game design using GOAL framework. The GOAL framework consists of ontology, methodology, and supporting tools, so it can be the best framework for designing gamification in software engineering such as social media sites. The findings from this case study of gamification using the design of treasure hunt game successfully applied by using GOAL framework, this is seen from the success of blackbox test results, it conducted on the applied gamification. In addition, this gamification affects the average increase of social media engagement metrics. In general, through the Wilcoxon statistical test of social media engagement metrics, the application of gamification affects 4 (four) significant social media user engagement metrics: number of posts, number of comments, number of purchasing behaviors, and number of positive-neutral emotions. The conclusion of this research is gamification with treasure hunt game design can be applied using GOAL framework and influence 4 (four) of social media engagement metrics.

Keywords : customer loyalty, social media engagement, gamification, treasure hunt game
PEMBUATAN APLIKASI ANDROID AROOM UNTUK NAVIGASI DAN INFORMASI JADWAL RUANG KULIAH DI UNIVERSITAS AL AZHAR INDONESIA MENGGUNAKAN TEKNOLOGI AUGMENTED REALITY

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Abstract


Keywords: AROOM, Augmented Reality, Navigasi Ruangan

EFFECT OF THE CURING TIME ON THE MECHANICAL PROPERTIES OF THERMOPLASTIC ELASTOMERS FROM POLYSTYRENE AND NATURAL RUBBER CONCENTRATED LATEX MADE BY EMULSIFICATION

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Abstract

This study aims to investigate the characteristics of thermoplastic elastomer (TPE) of polystyrene (PS) and natural rubber concentrated latex (NRCL) made by emulsification. Increase in curing time will cause the amount of evaporation water that contained in the emulsion TPE more and more, so it will increase the interaction between the PS particles with NRCL and will affect the mechanical properties. Grafting PS with Malefic Anhydride (MA) carried out in an internal mixer at PS melting point (2400C) using benzoyl peroxide as initiator, obtained PS-g-MA. TPE emulsions prepared with emulsion ratio PS-g-MA /CLNR: 90/10; 30/70; 50/50; 70/30 and 10/90 with 10 ml of emulsifier amount of 10% of ALS. The results indicate PS grafting with MA successfully obtained material PS-g-MA, the particle size emulsion PS-g-MA according to the standard emulsion that is 1-10 μm. TPE homogeneous emulsion in comparison emulsion PS-g-MA/CLNR: 90/10. TPE sample tensile strength increases with the increase in curing time up to 21 days, but the elasticity decreases.

Keywords: thermoplastic elastomer, polystyrene, emulsion, curing time, stable, increase
THE DEVELOPMENT OF A MODEL OF FEATURE RADIO AS A GUIDE FOR
ENGLISH DEPARTMENT STUDENTS OF STATE POLYTECHNIC OF PADANG
IN COMPLETING THE FINAL PROJECT

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Abstract

Final project is one of requirements in getting the diploma degree at State Polytechnic of Padang (PNP). English department students can produce a feature radio to be conducted as their final project. Unfortunately, there is no fix model and a guide book of feature radio. Therefore this paper will propose a model of feature radio as well as construct the appropriate feature radio guide book. This research is Research and Development (R&D) study. The development was carried out through several steps, namely; needs analysis, product development, product validation, and product revision. There were some respondents involved in the study, i.e. one content expert, one media expert, and two students of English Department who conducted radio feature as their final project in academic period 2016-2017. The data were collected through analyzing syllabus, interviews, and questionnaires.

Keywords: Feature radio, Research and development, Final project.
BIODIVERSITY FROM TOFU INDUSTRIAL WASTEWATER USING ANAEROBIC SEQUENCING BATCH REACTOR (AnSBR) WITHOUT CIRCULATION

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Abstract
Tofu small industries release wastewater in environment with high potential of pollution. This is due to the fact that the wastewater contains massive organic substances and high nutrient rate. This study developed a wastewater processing technology, an anaerobic process using Anaerobic Sequencing Batch Reactor (AnSBR). The purposes of this reactor were to remove chemical oxygen demand (COD) and to produce biogas as environment friendly renewable energy. This study had objectives to perform a fundamental analysis of tofu wastewater-borne COD removal characteristics using the AnSBR reactor and to reuse tofu wastewater sludge for biogas production as a renewable energy source. The organic material COD removal was unique because it depended on two factors. Firstly, concentration of tofu wastewater sludge that decomposed COD and controlled removal selectivity for degrading the COD. Secondly, hydraulic retention time (HRT) as an average period necessary by substrates to react with methanogen bacteria in the tofu wastewater sludge, and in the AnSBR reactor. To comprehend the process characteristics this study focused on two intrinsic parameters, as the followings: (i) anaerobic parameter using methanogen bacteria in the tofu wastewater sludge; and (ii) fluid psycho-chemical parameter through laboratory-scale experiment, theoretical model, and pilot-scale test. The system work was analyzed according to the removal characteristics (rate of COD removal, HRT, and tofu industrial wastewater methanogen). The work began with construction of the design and fabrication of the laboratory-scale AnSBR reactor and in cluster Tofu Small Industry. Results obtained the optimum dimension of the tank based on the research is as follow, diameter 3.4 m, height 1.75 m, with a dome of weight 1.8 m. The whole stages of the study were expected to present two measurable outcomes, as follows an AnSBR reactor prototype for processing tofu wastewater.

Keywords: prototype, tofu industrial wastewater, AnSBR reactor
ENVIRONMENTAL MANAGEMENT OF MUFFLER SMALL INDUSTRY WITH CLEAN PRODUCTION TOWARDS MATERIAL, WATER AND ENERGY EFFICIENCY

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Abstract

Muffler industry has been closely related to wastewater processing before disposal into environment. Using an aerobic method, the wastewater can be converted into friendly of environment. Unfortunately, waste processing approach before its disposal into the environment has disadvantages. These disadvantages can be approached by a combination of clean production application and wastewater processing product. The production process in a company does not only result in the preferable end product, but also provide non product output. This non product output may take the forms of material, water, and energy used for the production process but it cannot be the desired end product. Therefore, rather than obtaining added value, it tends to cause cost inefficiency for the industry. Besides, the non product output in the form of contaminant may have negative impact on the community and the environment. The objectives of this study were to identify and to evaluate the efforts of the clean production application by muffler industry in Purbalingga Regency, as well as to provide alternative to obtain good governance as an effort to put the clean production into practice. This study applied a descriptive method combined with engineering by explaining cost calculation for the muffler industry due to the existence of the non product output as compared to the total of production cost. This study revealed the inefficient use of raw material and water as well as hot spots. The calculation of the water, energy and material scales resulted in efficient use of raw material (72.37%), wastewater (82%), and energy (78%). The alternatives for the treatment/improvement dealing with the good governance as an opportunity for the clean production found during the observation were awareness of the required acceptance, monitoring and storage of the muffler raw material storage to produce high quality raw materials, and controlling the water and energy use during the production process.

Keywords: muffler, material, water, energy
THE MACHINE PUCH MULCH: A PNEUMATIC PIERCHING AND CONTROL WITH FUZZY LOGIC CONTROL

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Abstract

Agricultural tools and machine innovation aimed at could improve efficiency of land and labor, saving energy and resources (seed, fertilizer, water and equipment), improving effectivity, productivity and quality of agricultural products, reducing the workload of farmers, maintaining environmental sustainability and agricultural products and increasing farmers income welfare. One of the efforts that made was using Plastic Mulch in the cultivation of horticultural agriculture. Installation of plastic mulch on cultivated plants more efficient if installed after plastic mulch was perforated. This research explained about automatic mulch punching machine used Fuzzy Logic Control intelligent system control that be equipped with microcontroller and sensor and controlled cellophane for the perforation process. Mulch punching machine that effective, save, easy to operated, cheap and affordable by the community. The test result knowed the response Fuzzy Logic Control of control system toward arrangement of DC motor speed, sensor function, punching blade driver solenoid, position and hole distance generated, time required and easy to operation for variation range and hole size certain for intercropping system.

Keywords: Plastic Mulch, Fuzzy Logic Control, Selenoid, Sensor, Microcontroller
EARLY WARNING SYSTEMS LANDSLIDE DISASTER WITH COMMUNICATION WIRELESS GPRS

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Abstract

Indonesia is archipelago there are many valley, hill, volcano mountain and there are two season rainy season and dry season. When rainy season is coming resulting in a landslide, so every year Indonesia landslide. This practice try to build landslide early warning system using AT MEGA 2560 micro controller with prototype Early Warning System of landslide disaster. For detection that condition we use vibration sensor accelerometer, soil moisture intensity sensor. When vibration detect, soil moisture reaches 80 mm / min. then this system will sound a siren of danger and will contact the village apparatus to evacuate its citizens. The avalanche model is made on a box and the type of soil used is sandy soil with varying moisture content. The soil is made to form a slope of 45 °, 60 °, 75 °. The output used is LCD, SMS, and Buzzer. The research results show that for early landslide warning system with GPRS wireless communication works well.

Keywords: Landslide, sensor, SMS

THE EFFECT OF AGGREGATE GRADATION ON WATER DAMAGE OF ASPHALT CONCRETE BASED ON PARTICLE LOSS

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Abstract

Water can damage asphalt pavement by weakening bonds between asphalt and aggregates which may result in raveling on the bituminous road surface. Aggregates are one important part of the mix that affects the asphalt mixture properties. Therefore, this study aims to determine the effect of aggregate gradation on the particle loss due to water immersion. Three aggregate gradations of upper limit (UL), middle range (MR) and lower limit (LL) and one type of Elastomer Modified Asphalt (EMA) were selected as asphalt mixture materials. Immersion time were 0, 1, 2, 4 and 7 days. Cantabro method used to evaluate the particle loss of the asphalt mixture. The proposed parameter to measure the resistance of the asphalt concrete mixture to the water effect is Equivalent Particle Loss (EPL). The results showed that asphalt concrete mixture with middle range of aggregate gradation had the lowest particle loss resistance.

Keywords: aggregate gradation, water damage, asphalt concrete, equivalent particle loss
DESIGNING ENGLISH LEARNING MEDIA FOR STARTER LEARNERS AT ELEMENTARY SCHOOLS BASED ON INTERACTIVE MULTIMEDIA

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Abstract

Millennial generation is naturally connected with digital learning. Therefore, the usage of technology in enhancing learning is crucial in order to achieve better learning outcome. The problem was some Elementary schools in Pekanbaru still insisted in employing manual learning style. Instead of using digital tools, they worked on manual books as teachers complained that the main issue was children short attention span, that no matter how interesting the presentation, the pupils were not into them more than allocated time for them to be interested in. Moreover, the existing digital materials were not sufficient enough, irrelevant with the curriculums and even teachers, themselves, especially the digital immigrant generations faced difficulties in composing and adjusting those digital materials due to their lack of skills in dealing with technology. This happened to almost all subjects taught at schools. Based on this case, the researchers tried to design an integrated learning media, focusing only on English language learning as English was one of considered difficult subjects. Designing a digital application for this subject which is in line with curriculums and targeted learning outcomes, as well as it combined animation, audio and video and text are expected to help teachers in working out with pupils’ lack attention span, and its handy features eases them to operate the digital media, that it is not necessary for the teachers to attend a special class in comprehending the way to make use the said media.

Keywords : English, Learning Media, Interactive Multimedia
THE ANALYSIS OF INDONESIA ECONOMIC GROWTH: IN SIX BIG ISLANDS IN INDONESIA

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Abstract

This study attempts to investigate and analyze the factors determining and influencing the Indonesia’s economic growth, and to see economic growth in the six big islands in Indonesia, using extension of the Solow-Swan model and endogenous growth models, by also adding the factors of education (EDU), the potential sectors utilization (PSU) as well as several other factors that Foreign Direct Investment (FDI), Political Stability and Security (STAB). The results of this study found that the variable of FDI, PSU, EDU and STAB, in general, have effect on the economic growth in Indonesia and on the existing six big islands. Not all of these variables affect the 6 islands which is due to the different characteristics of each island. It can be concluded that the FDI, is still one of the important sources for Indonesia, and six big islands to encourage economic growth of Indonesia's economic growth and six big islands in Indonesia against the use of potential sectors especially in natural resources. Political Stability and Security (STAB), the condition of Indonesia, and six big islands, are quite vulnerable to shocking security, making it have a strong effect on economic growth. Education (EDU) generally is able to contribute significantly to the economic growth of the islands. In Bali and Timor, education (EDU) can not encourage economic growth.

Keywords: Economic Growth, FDI, Education, PSU, Stability, Fixed Effect Model (FEM), General Least Square (GLS)
CHARACTERISTIC OF WARM MIX ASBUTON MODIFIED ASPHALT WITH NATURAL WAX BASED ADDITIVE

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Abstract

Environmentally friendly technologies and energy saving have been developed in various types of industries to respond environmental issues, especially global warming. In the pavement construction industry, the use of Hot Mix Asphalt (HMA) is one important issue that contributes increasing of global warming, especially HMA that uses modified asphalt such as asbuton modified asphalt where its mixing and compacting temperature were higher than conventional HMA. Warm Mix Asphalt (WMA) is one of the technologies of pavement that was developed to address the issue of global warming. Many attempts have been made globally to produce WMA with performance equivalent to HMA but produced at a lower temperature of 20°C - 40°C. Various additives technology has created, produced and has been used for WMA globally. From a variety of wax-based additives available in the market, none of which use the natural wax as a main ingredient. One type of natural wax is beeswax. This study aims to know potential use of beeswax as an additive in producing of WMA mixture with asbuton modified asphalt as a binder. This study hypothesized that beeswax is a natural additive that can be used to produce WMA mixture. A series of laboratory tests on the properties of asphalt and asphalt mixture is made to achieve that goal. In this study, 5 variations composition of beeswax and other materials used (combined-beeswax-additive) as an additive for asbuton modified asphalt. However, in all variations using 66% of beeswax. From this study it was known that beeswax is a potential natural wax that can be used as the main ingredient additives for asbuton modified asphalt. Addition of combined-beeswax-additives is not change the properties of asphalt significantly but in the mixture properties it tend to decrease the Marshall stability, Marshall quotient, ITSR and modulus. However, the additional of 0.5% combined-beeswax-additive into asbuton modified asphalt can meet the requirement on General Specification of Bina Marga 2010 3rd Revision with reducing of mixing and compaction temperatures of 30°C and mixture performance equivalent to HMA which used asbuton modified asphalt as a binder and more over has a better fatigue and aging resistance.

Keywords: -
SEA WATER INTRUSION STUDY ON COASTAL AREA OF PADANG BARAT, PADANG CITY

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Abstract

This research is to analyze the possibility of sea water intrusion in coastal area of Padang Barat District based on the ratio of chloride ion and total carbonate (R) ion using R.Revelle method. Padang Barat was selected as sampling area because most of the area are residence with for water supply. Measurements were carried out on 30 wells in 5 selected villages (Flamboyan Baru, Olo, Purus, Belakang Tangsi, Berok Nipah) along the coast of Padang Barat District with a distance of 0-500 m from the beach. Based on the three times measurements, there are areas experiencing slight intrusion of sea water at the area 01,02 (New Flamboyan), 08 (Purus) and 28 (Berok Nipah) with the range value R = 0.02-1.92. The result of regression analysis showed that coastal depth and well depth did not give significant effect to R value.

Keywords : Coastal area of Padang Barat District, Sea water intrusion, Chloride Bicarbonate Ratio
OMNICHANNEL CUSTOMER BEHAVIOR IN INDONESIA
AT THEIR EARLY STAGE : A STUDY OF THE INFLUENCE FACTORS ON PURCHASE INTENTION

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Abstract

The development of the information communication technology has transformed consumer shopping behavior. Channels and media integration creates new shopping environment known as omnichannel, which opens new ways for consumer to interact seamlessly during their shopping journey. To increase consumer experience on their shopping journey many companies attempt to develop the omnichannel in the future. The traditional retail industry in Indonesia will also affected by this omnichannel phenomena with their new way in shopping journey, however little known of the omnishopper behavior in Indonesia in regards of their purchase intention.

This study was aimed to investigate the behavior of omnishopper in the frame of the technology acceptance and other factors which might affect their purchase intention significantly. The conceptual model in this study was replicated from the previous study, based on unified theory of acceptance and use of technology 2 (UTAUT 2) model with a modification. In this study the variables tested were: performance expectancy, effort expectancy, social influence, habit, hedonic motivation, personal innovativeness, and perceived security. The model analyzed by structural equation modeling (SEM) and processed by SmartPLS application. The data used in this study were the primary data obtained from the online survey. The questionnaires were distributed to the omnishopper who already experienced to the omnichannel practice which applied by a global fashion brand company. There were found 179 sample eligible to the study.

The results concluded that the key drivers of purchase intention for omnishopper, respectively were: effort expectancy, habit, and perceived security. Other variables proved to be not significant to influence purchase intention in the omnichannel setting. This study brought an implication which not supported the proposed model and to be discussed further. The $r^2$ value to explain the purchase intention were found 0.411. Other factors need to be tested in the future omnishopper study and also in other category out of the fashion product.

This study revealed that omnishopper in Indonesia was dominantly affected by the ease of use followed by the frequency of usage of online the channels or platforms and lastly by the security system used inside the channels and platforms. In practical this study should encourages managers to understand and provide better customers experience by the seamless channels integration and to put forward the security system to match with the omnishopper expectation while using their omnichannel in their shopping journey.

Keywords : omnichannel, omnishopper, purchase intention, costumer behavior, UTAUT 2 model
STAKEHOLDERS AWARENESS OF EDUCATIONAL INSTITUTION REBRANDING CASE STUDY: PNP

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Abstract

A brand is a name, symbol, sign or something used to introduce the product to consumers or potential consumers. A brand is designed in such a way and developed and built with a variety of strategies to keep it simple when customers or potential customers need products. Change in branding or part of overall impact on various things. As an institution of vocational education, Polytechnic of Padang (PNP) has been born since 29 years ago and has graduated thousands of alumni who are scattered in various industries throughout Indonesia. As a consequence of the discharge of UU RI No.12 On Higher Education, PNP must be autonomous and has its own flag. This study aims to calculate the effect of changing the brand that occurred in PNP institution which was originally known as the Polytechnic University of Andalas (Polytechnic Unand or Poly Unand) to stakeholder’s awareness. The analytical method used is descriptive analysis. The object of research is the group of company where alumni work for and government institution who ever used PNP service.

Keywords: re-branding, brand identity, brand awareness, marketing communication

EFFECT OF SLOT SHAPE CHANGES ON ULTRA-WIDEBAND ANTENNA

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Abstract

Observations of the effect of the slot shape on the ultra wide-band antenna radiator (UWB) is presented. A large slot size change will result in a rejection band in the frequency response. Simulation results show the corresponding frequency response for UWB communication (3.1 - 10.6 GHz). The VSWR of the antenna design is less than 2. Polaradiation shows omnidirectional for 3 - 6 GHz frequency.

Keywords: ULtra-wideband, slot, band rejection
ANALYSIS THE IMPLEMENTATION OF CONTROL ENVIRONMENT AT KJKS IN WEST SUMATRA

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Abstract

The objective of this research is to describe the implementation of KJKS internal control system in West Sumatra. The elements used are the enforcement of integrity and ethical values; preparation and implementation of sound policies on human resources development. The method of research is survey and data collection using questionnaire. Data analysis using descriptive method. The results showed that the average enforcement of integrity and ethics, as well as the preparation and implementation of sound policies on KJKS human resource development are in good condition. This means that optimization is required in the application of control environment in KJKS in West Sumatra (64.6%). Strategies that can be done is to establish the mechanism of behavior rules of management, supervisor and manager of KJKS. And perform periodic supervision of KJKS manager.

Keywords : Environment Control, integrity enforcement, ethical values, human resources development

OPTIMAL DESIGN OF STATOR SLOT GEOMETRY TO REDUCE TORQUE RIPPLE FOR HIGH-SPEED SPINDLE INDUCTION MOTOR APPLICATIONS

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Abstract

This paper describes the optimal design for the geometry of a stator slot to reduce torque ripple for use in high-speed spindle motor applications. The proposed method consists of the following three steps: first, choose the parameters of the stator slot that has a strong influence on the stator current, stator winding loss, iron loss, total loss, efficiency, and torque by using the analysis of the effects of stator slot geometry; second, create factors and levels in the Taguchi method to obtain the optimal combination of the stator slot parameters from the analysis effect of the parameter results; third, using Genetic Algorithms (GAs) to determine the optimal value from the optimal combination of the results of the Taguchi method. Optimal design and performance analysis was performed using the Finite element Method (FEM) and verification by using equivalent circuit analysis. The optimization results were evaluated by comparing them with original performance. According to the test results and analysis, the optimal design of the stator slot geometry produce better performance than original design.

Keywords : finite element analysis, spindle motor, induction motor, stator slot, torque ripple
ANALISIS PEMILIHAN MODA PEKERJA KOMUTER BEKASI – JAKARTA TERKAIT RENCANA PENGOPERASIAN LRT BEKASI TIMUR – CAWANG

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Abstract

Jakarta is the most attractive city for commuter workers around its metropolitan area especially from Bekasi City. The government began to build LRT which one of the route is Cawang – East Bekasi to provide the needs of transportation. The objective of this study is to find out the mode choice model between LRT and non-LRT including private vehicle and public transportation. The survey was conducted based on stated preference method then modeled by binomial logit method. The utility function derived from the analysis for LRT is Ulrt = -2.61 X1 – 0.0230 X2 – 1.21 X3 + 0.0957 X4, whereas the utility function for non-LRT is Unon-lrt = -2.61 X1 – 0.0230 X2 – 1.21 X3 + 0.0957 X4 – 0.614 where X1, X2, X3 and X4 are attribute of travel cost, headway, mode transfer and travel time. Statistical test states that all attributes of independent variables significantly influence the decision of respondent in choosing the mode.

Keywords: stated preference, binomial logit, LRT, mode choice
ANALISIS CRITICAL SUCCESS FACTORS PROYEK KONSTRUKSI DI KOTA PADANG

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Abstract

Salah satu konsep dari manajemen proyek adalah keberhasilan proyek. Keberhasilan proyek adalah tujuan akhir yang utama dari setiap proyek. Keberhasilan proyek bersifat relative, karena mengacu pada beberapa hal yang menjadi kesamaan dasar yaitu waktu, biaya dan mutu yang sudah disepakati. Perbedaan faktor keberhasilan (critical success factors) proyek disebabkan tiap proyek mempunyai faktor-faktor pengaruh yang berbeda-beda. Oleh karena itu, setiap pihak yang terlibat harus memiliki strategi tertentu terhadap kesuksesan proyek yaitu dengan mengetahui faktor-faktor yang paling berpengaruh terhadap kesuksesan (keberhasilan) pelaksanaan konstruksi.

Penelitian ini bertujuan untuk mengidentifikasi faktor-faktor yang mendukung kesuksesan (critical success factors) proyek konstruksi di Kota Padang. Metode Penelitian yang digunakan analisis deskriptif menggunakan quisioner dengan data proyek konstruksi yang sedang atau sudah dikerjakan. Adapun respondennya adalah direktur utama, proyek manager, site manager, pelaksana, staf teknik, quantity dan quality control. Dari quisioner yang kembali, dilakukan pengujian data dengan menggunakan SPSS.

Quisioner yang disebarkan sebanyak 30 quisioner. Response rate 100%. Dari data penelitian terdapat 8 faktor dengan 59 sub faktor/variabel. 8 faktor tersebut adalah faktor manajemen proyek, pengelolaan proyek, pengadaan, rencana tenaga kerja, bahan/material, peralatan, eksternal dan cuaca. Hasil uji validasi, didapatkan 8 faktor dan 52 variabel yang valid. Hasil uji reliabilitas, semua faktor yang valid juga reliable.

Dari analisa data dengan SPSS versi 2.4 didapatkan faktoe yang paling dominan terhadap critical success proyek konstruksi adalah : untuk manajemen proyek adalah Rencana dan Jadwal yang digunakan, mempengaruhi sebesar 4,1667%. Faktor pengelolaan proyek, sub faktor yang paling dominan adalah Jadwal Pelaksanaan tidka sesuai Schedule yaitu sebesar 4,3667%. Faktor pengadaan proyek, sub faktor yang paling dominan adalah Metode Penawaran Proyek yaitu sebesar 3,8333%. Faktor Rencana Tenaga Kerja, sub faktor yang paling dominan adalah Jumlah Tenaga Kerja yang direncanakan yaitu sebesar 4,1000%. Faktor Bahan/Material, sub faktor yang paling dominan adalah Spesifikasi Teknis Bahan/Material yang digunakan yaitu sebesar 4,6333%. Faktor Peralatan, sub faktor yang paling dominan adalah Kapasitas Peralatan yang digunakan yaitu sebesar 4,3333%. Faktor Eksternal, sub faktor yang paling dominan adalah Komitmen semua pihak terhadap Proyek yaitu sebesar 4,6000%. Dan faktor Cuaaca, sub faktor yang paling dominan adalah Intensitas Curah Hujan yaitu sebesar 4,5667%.

Hasil penelitian ini nantinya diharapkan dapat sebagai bahan pertimbangan untuk semua pihak yang terlibat dalam pelaksanaan proyek konstruksi agar tercapai keberha silan proyek.

Keywords : Waste, Non-value adding activities, Proyek konstruksi
PEMBANGUNAN APLIKASI E-VOTING PNP AWARD BERBASIS ANDROID

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Abstract


Keywords : Android, E-voting, Java, MySQL, PNP Award

OPTIMIZING THE TILT ANGLE AND DIRECTION OF SOLAR PANELS IN ACEH WITH GENETIC ALGORITHM METHOD

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Abstract

Performance of photovoltaic (PV) that are installed fixed has strongly influenced the direction and tilt angle of the PV. Changes in the declination angle of the sun within a year affect the total solar irradiance received by the PV. To overcome obstacles in the fixed solar cell panel, it is necessary to optimize the angle of inclination and the direction of PV placement so that the electrical energy will be generated more optimally. Genetic Algorithm Method (GA) is used to optimize the direction and angle of the PV. The genetic algorithm initializes the PV tilt angle with the specified limits, then calculates to obtain the total energy value in the inclined plane of PV by crossover, mutation and selection. The algorithm is limited to 50 generations. The results show that the optimization of the tilt angle can increase the ability of solar panels to receive solar energy compared to the placement of solar panels with the angle of the slope without optimization. The angle and direction of the optimum panel with the genetic algorithm in the Aceh area are 4o - 6o with the orient direction to south. Installation at an angle after the optimization of the energy received increased solar panels to 9% compared with tilt 20o direction to north without optimization. And an increase of 8.9% compared with tilt 30o direction to south without optimization. As well as an increase of 65.5 compared with the installation of a 90o direction to south.

Keywords : Photovoltaic, tilt and direction, optimization, renewable energy
STUDY OF THE CHIMNEY SOLAR SYSTEM MODEL FOR AGRICULTURAL PRODUCTS DRYING SYSTEM ON EQUATORIAL REGION

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Abstract

The Solar Chimney model with 3x3 m² size of house roof as flat plate collector has been studied in this research. Hot air output this system is used for drying of agricultural products with tray truck dryer system has been studied previously. These two systems are combined to be integrated into the equatorial region where it requires the drying of agricultural products (eg, cinnamon, fish, etc.). Drying temperature of this material ranges from 41°C to 80°C can be used in this drying system. The dried material is at its drying temperature will produce the best type and maximum result and cleaner is in the system. This system becomes an alternative to drying of materials in areas that require an equatorial track that still has not received electricity. The direct utilization of solar energy will be more optimal in the daily needs of society in this technology, so the dependence with other energy (petroleum, wood, etc.) is reduced by utilizing the main source of energy that is solar energy. The roof of a house as a flat plate collector and dryer house on a solar chimney system becomes an energy toolkit for everyday needs.

Keywords: Roof model, Solar Chimney, Flat plate collector, enhanced heat transfer, drying sistem

THE INFLUENCE OF PALM FIBER ON SHEAR STRENGTH OF LIQUEFIABLE SAND

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Abstract

This paper presents the experimental results of direct shear test on granular sands reinforced by palm fiber. The investigated sand was classified as liquefaction potential sands according to the ranges of grain size distribution of liquefiable soil developed by Tsucida (1970 with the relative density of 40%. In recent study, palm fiber which was chose as strengthened material was randomly included in to the soil at three difference of fibers content i.e. 0.25%, 0.5% and 0.75% by dry weight of soil. Length of used palm fiber was 20 mm, 40 mm and 60 mm. Direct shear tests were conducted on the studied soil.

As the results, however the palm fibers increase the angle of internal friction of sands, the highest shear angle of soil was found on the soil with the palm fiber of 0.25% in percentage and 20 mm in length. It indicates that the more percentage and the longer of palm fiber in soil, the less the binding of the soil to the palm fiber.

Keywords: Palm fiber, Liquefiable sand, Shear strength
IBM UMKM PENGHASIL KOPI BUBUK

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Abstract

Bukittinggi is one of coffee producer cities annually producing coffee powder in significant amount. This is supported by the public's interest in consuming this beverage. It is also supported by its area, which is geographically located at an altitude between 780 - 950 meters above sea level, causing the air in Bukittinggi relatively cool with the air temperature is about 17-24oC. It makes the demand of getting excellent coffee powder higher year by year. The purpose of this community service is to provide training on the micro level of home-based coffee business, especially for Mr. Gindo and Mrs. Safni (coffee producers and traders), in terms of marketing, business accounting, business motivation, and also providing equipment. It is aimed to help increasing their sales and also expand their market, because their previous marketing is still very simple; (1). the coffee product is not using labels, brands, (2). Its packaging is not good, (3). there is no promotion, (4). The marketing distribution is generally still in zero level (direct selling, (5). There is no bookkeeping because personal and business expenses are still mixed. With the training and the aid of equipment that have been given, hopefully Mr. Gindo’s dan Mrs. Safni’s coffee businesses, with the new brand “Raja Kopi” and “Ani”, become more successful.

Keywords: Bukittinggi, SME, Coffee powder producer
MEMBANGUN PARIWISATA BERBASIS KEARIFAN LOKAL
DI KABUPATEN PESISIR SELATAN

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Abstract

Pesisir Selatan regency, located in West Sumatera province has a charming tourism potential. Beside its beautiful beaches, coastal resources and historical sites, this area also has amazing local wisdom that can attract tourists. Pesisir Selatan district government has established tourism as a leading sector of development and made a local wisdom-based tourism policy to support tourism development. In addition to inspiring the growth of local wisdom, local values grow into the values of life that give meaning to life and interaction among people. The strategic value of local culture has inspired various regions to develop the potential of locality in tourism development. Based on the previous thought, then the development of tourism should not marginalize the culture and local spirit. Therefore, it needs to be initiated to make the development of tourism in line with the development of culture and local wisdom spirit. The idea was developed based on the assumption that tourism attraction is based on the development of society and its culture. This research is conducted by using qualitative research method with phenomenology approach to describe, analyze and interpret local wisdom as the base of tourism development in Pesisir Selatan. This study aims to see how far the local wisdom becomes the base of tourism development in the South Coast.

Keywords: Pesisir Selatan, Tourism, Local wisdom
ONLINE SURVEY APPLICATION DATA COLLECTION OF COMPETENCIES IN THE FIELD OF INFORMATION TECHNOLOGY

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Abstract

Competencies (consists of knowledge, skills, behaviors, and attitudes) are among the important assets that must be owned by all Information Technology workers in this modern era. Every occupation has different skills needs. Nowadays, a lot of labors and educational institutions have limited knowledge about the set of competencies needed by companies that will hire their graduates. Several research on this issue has been performed in the past, however, it was done manually. The survey construction, survey deployment, and data collecting were performed using paper-based. The manual processes limit the data collection and data management, in addition to the extension of time. The authors performed the research on an “Online Survey Application for Data Collection of Competencies in the Field of Information Technology”. The purpose of this research is to produce a web-based application to assist the survey construction, collecting data correspondent, survey deployment, and data management that are needed for collecting data competencies in the field of information technology in Indonesia. The data for this research were obtained from the result of consultation with researchers who previously conducted similar research and relevant literature with the theories relevant to this research. With this online application, researchers should be able to conduct the research for data collection of competencies more easily.

Keywords: Competency, Web-based Application, Occupation, Survey
EFFECT OF RAW MATERIALS COMPOSTING
(GREEN WASTE MARKET, GARDEN WASTE, AND RUMEN’S COW)
TO QUALITY AND QUANTITY OF COMPOST

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Abstract
Solid Waste is the most major problem in metropolitan areas. Composting is one of the solution for solid waste problems applied in the research. As the quality of the compost depends on raw materials. These research use to combines market waste (MW), garden waste (GW) and cow rumen (CR) as raw materials of compost. This research aims to analyze the effect of composition of composting raw material variation to get optimum composting process. Composter consists 6 variation; 1 (70% MW: 30% GW), variation 2 (60% MW: 20% GW: 20% CR), variation 3 (50% MW: 30% GW: 20% CR), Variation 4 (40% MW: 40% GW: 20% CR), variation 5 (30% MW: 50% GW: 20% CR) and variation 6 (20% MW: 60% GW: 20% CR). The methodology used semi aerob composting. The results of observation were on compost maturity for temperature, pH, texture, color and odor parameters that have fulfilled SNI 19-7030-2004 standard with composting time 12-21 days. The results of compost quality analysis including moisture content, C-organic, nitrogen, C / N ratio, phosphorus, and potassium of five variations meet the SNI 19-7030-2004 standard, while one variation of the constellation values was variation of six that exceeds the standard. Of the total compost raw material of 3 liters, obtained the quantity of compost solids 0.5-1.25 liter and liquid compost 0.05-1.5 liter. Based on the results of scoring on the maturity, quality, and quantity of compost, obtained the best variation was variation of two.

Keywords : Maturity, Quality, Quantity, Cow rumen, Market waste, Garden waste
MANAGING THE PRODUCTIVE WAQF ASSETS: THE CASE OF MUHAMMADIYAH WEST SUMATRA

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Abstract

Along with the revitalization agenda of waqf institutions around the world, the idea of managing waqf assets becomes more productive has been widely disseminated among the waqf managers (mutawalli). It is believed that a productive waqf is in line with the sustainable nature of waqf, hence will give more benefit to the society. Indeed, waqf which had been practiced by Prophet Muhammad PBUH and his companions in the past was productive in nature. For instance, when Umar donated his piece of garden in Khaibar, he assured that the benefit of the garden would be continuously transferred to the beneficiaries. In fact, if waqf of Umar was not managed productively, he would not be able to do so. In Indonesia, the Indonesian Waqf Board (BWI) is in the frontline of productive waqf campaign. As the regulator of waqf institutions, BWI encourages all mutawallis to improve their skill to enable them managing waqf assets professionally and productively. This paper is aimed to portray the practice of productive waqf in Muhammadiyah West Sumatra. In so doing, a case study at Badan Pengelola Gerakan Wakaf Uang (BPGWU) Muhammadiyah was conducted. Through serial interviews and multiple observations, we found some interesting findings at BPGWU Muhammadiyah. Given the fact that Muhammadiyah is the biggest Islamic organization in West Sumatra, the BPGWU is highly potential in collecting big amount of cash waqf from the Muslim society. While collecting waqf fund is not really an issue, there are some constraints faced by the mutawalli in managing cash waqf productively. The mutawalli seems to be in dilemma between optimizing the investment of waqf fund and minimizing the risk embedded in the sustainability nature of waqf. This paper concludes with some recommendations to improve waqf management at BPGWU and waqf management in general.

Keywords: Waqf, Productive waqf, Cash waqf, Muhammadiyah, West Sumatra
IDENTIFICATION OF HALAL DESTINATION CRITERIA FULFILLMENT WITHIN PADANG BEACH AREA AS TOURISM ATTRACTION ICON OF THE CITY OF PADANG

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Abstract

The city of Padang, as the capital of West Sumatera province contributes significant role in creating impression for the tourist who’s visited West Sumatera. Especially since in 2016 West Sumatera had won three categories in World Halal Tourism Award (WHTA) held by The Ministry of Tourism of United Arab Emirates (UAE) for World’s Best Halal Tourism Destination, World’s Best Halal Culinary Destination, and World Best Halal Tour Operator. Through this research Padang Beach area, as the iconic tourism attraction of Padang, being identified its general and tourism facilities, as well as its accessibilities, whether there is significant development upon it, especially to meet the requirement of halal destination criteria. To do so, a thorough observation based on criteria check list was utilized as the way in collecting data needed. The research then results a conclusion that there are more improvement and development needed within the area of Padang Beach to meet the halal destination criteria. Besides, from the research there are also recommendations that feasible to execute by the local government.

Keywords : Halal tourism, Padang, West Sumatera, Tourism facilities, Accessibilities, Halal destination criteria
ANALISA PENTINGNYA PEMAHAMAN LINTAS BUDAYA DALAM KELANCARAN BERKOMUNIKASI BAHASA INGGRIS PADA MAHASISWA JURUSAN BAHASA INGGRIS

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Abstract


Keywords : budaya barat, pemahaman lintas budaya, komunikasi
NEED ASSESSMENT IN INTERNAL QUALITY ASSURANCE SYSTEM IMPLEMENTATION FOR DIPLOMA STUDY PROGRAMMES

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Abstract

The increasing demand of qualified skilled labour encouraged Indonesian government to improve the number and quality of vocational education in Higher Education Institutions (HEIs), in the form of diploma study programmes. However, the overall qualities of diploma study programmes are still low, even though the quality assurance system has been an imperative. Based on accreditation results, not many of them have gained ‘A’ remarks (only 12%, nationally; and less than 1% within West Sumatera Province) or have shown the expected continuous improvement. The fact is most of HEIs had not implemented internal quality assurance system properly. In this article, the problems of performing internal quality assurance system are analyzed and the solution alternatives are developed. The identification process is done by means of surveys and interviews through several HEIs maintaining diploma study programmes located in West Sumatera, followed by analysis process utilizing fault tree analysis and fishbone diagrams. The study showed that the main problems in implementing Internal Quality Assurance System are 1) difficulties in collecting data/information from other units 2) difficulties in pre-processing data from different forms 3) lack of socialization and training. The main proposed solutions are 1) better collaboration among units 2) documenting and retrieving facilities of activities and performance data; 3) pre-processing data facilities regarding different forms of data. By implementing those solutions, it expected that HEIs can conduct continuous improvement. Thus, more diploma study programmes get “A” remarks.

Keywords : need assessment, internal quality assurance system, diploma study programmes

DEVELOPMENT AND CURRENT TREND OF TERRESTRIAL TELEVISION ANTENNAS

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Abstract

This paper provide the brief history of the development of terrestrial television antennas. Initially a short review of terrestrial television antenna papers is performed to assess the evolution of research activities on the topic since many decades ago. The antenna technology and specifically on television antennas during the early years of invention are analyzed sufficiently. The rapid evolution of research and development activities that arose in the previous 40 years is present in a framework of the related technologies and area of application. Finally, the present situation in the field of terrestrial television antennas and the possible future trends of are investigated.

Keywords : antenna, terrestrial, television, history, trend
RUU PASAL 485 DALAM HUKUM POSITIF DAN HUKUM ISLAM
PADA PENANGGULANGAN CYBER SEX

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Abstract


Keywords : Kebijakan, RUU KUHP, Pasal 485, Hukum Positif, Hukum Islam
NEEDS ANALYSIS IN THE DEVELOPMENT OF MATHEMATICS INSTRUCTIONAL MATERIALS CONSTRUCTIVIST APPROACH THROUGH MOBILE LEARNING SYSTEM

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Abstract

This study aimed to analyze the problems, needs, and characteristics of students in developing teaching materials with constructivism approach through a Mobile Learning System. The development method used follows the 4-D model consisting of define stage, design stage, develop stage and disseminate stage. This study focused on the first stage which is define stage. Subjects of this study are students of mathematics education program on Bung Hatta University year of 2015 consisting 26 pupils. Data collection technique was done through syllabus analysis, source book analysis used in relation with the material, and interview with some students of mathematics education program of Bung Hatta University year of 2015. The result of the analysis shows that mathematics education students need teaching materials with constructivism approach. The conclusion of the research at this define stage that textbooks used by lecturers and the way of delivery of materials causing students misunderstand the subject. Students also need instructional materials in accordance with the characteristics of students, for that this research will be done at the design stage of teaching materials with constructivism approach.

Keywords: Teaching Material, Constructivist Approach, Mobile Learning System
DESIGN OF ORGANIZATIONAL AND FINANCIAL GOVERNANCE TRAINING FOR VILLAGES / NAGARI IN PADANG PARIAMAN DISTRICT

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Abstract

The design of this training method is designed to allow Nagari / Villages to be able to implement and develop good organizational and financial governance in accordance with the universal principles of Good Corporate Governance. The results of interviews and observations made to the activity partners found that the application of GCG principles was not implemented and developed so as to impact the low level of government authority and the low quality of public services. This is not in line with the objectives of Law No. 6 of 2014 and the NAWACITA program of the President of Indonesia. This activity is designed with a systematic approach through 23 types of activities carried out in the form of training and assistance so that expected outcomes of this activity is an independent region, strong, authoritative and able to provide public services and impact on regional development. The program is also designed to be a national pilot associated with the implementation and development of good organizational and financial governance. Activities are carried out with discussion methods, training methods, and advisory methods. The selected respondents were nagari Tandikat Utara, Nagari Toboh Ketek, Nagari Parit Malintang and Nagari Sicincin. All Nagari are located in Padang Pariaman District of West Sumatra. It is hoped that the method used from this activity can be an example for other regions in developing and implementing GCG.

Keywords: Good Corporate Governance, Financial Governance, Training, Assistance
THERMAL AND ADHESIVE PROPERTIES
WITH THE ADDITION OF LOCAL MONTMORILLONITE NANOPARTICLES
TO THE MANUFACTURE OF NANOCOMPOSITES POLYURETHANE

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Abstract

This study investigates effect of local montmorillonite quantity on polyurethane nanocomposite production as coating material. Normally, Nanocomposite polyurethane causes reaction between propylene glycol and methylene diisocyanate by addition of local montmorillonite that is applied as coating material. In the selected methodology, characterization of polyurethane nanocomposite group is conducted by spectroscopy FT-IR., Thermal characteristic is examined by thermogravimetric analysis. Effectivity of polyurethane nanocomposite is measured by ISO2409 adhesive characteristic. As a result, polyurethane nanocomposite thermogram analysis with addition of montmorillonite achieved higher temperature in comparison to polyurethane without addition of montmorillonite. Furthermore, effectivity of polyurethane nanocomposite as coating material is also increased since 2nd classification becomes 1st classification.

Keywords: polyurethane, thermal, montmorillonite
Abstract

Retrofit ini bertujuan untuk melakukan perbaikan, restorasi dan perkuatan rumah tinggal (bangunan sederhana). Dalam pelaksanaannya yaitu dengan melakukan metoda pelaksanaan konstruksi yang tepat dan efisien, memakai prinsip teknik yang benar, detail konstruksi yang baik dan praktis sesuai dengan penyebab dan tingkat kerusakan yang terjadi.

Bangunan rumah tinggal yang sudah dilakukan tindakan retrofit dapat mencegah/mengurangi dampak gempa untuk masa yang akan datang. Contoh tindakan retrofit pada komponen struktur balok dan kolom adalah dengan melakukan penjangkaran kolom-balok dan merapatkan sengkang antara kolom dengan balok. Tindakan retrofit pada komponen non struktur seperti dinding dengan melakukan perbaikan dinding dengan mengisi retak halus dengan air semen. Pada pekerjaan pembetonan retrofit dapat dilakukan dengan beton resin polyester yang merupakan beton yang dibuat dari campuran agregat kasar dan halus dengan bahan perekat resin. Pelaksanaan retrofit pada bangunan rumah tinggal dapat menghemat biaya sekitar 20% sampai 30% dan menghemat waktu pelaksanaan sekitar 50%.


Metode yang akan diterapkan adalah dengan melakukan penyuluhan, sosialisasi, survey lapangan serta diskusi dengan pemuka masyarakat, percontohan (yang dipandu oleh tim pengadian) yaitu bersama-sama warga masyarakat bergotong royong dalam melakukan retrofitting untuk perbaikan, restorasi dan perkuatan rumah tinggal.

Keywords : Retrofitting, Perbaikan, Restorasi, Perkuatan, Rumah tinggal
SISTEM STRUKTUR RISHA (RUMAH INSTAN SEDERHANA SEHAT)

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Abstract

RISHA, merupakan singkatan dari Rumah Instan Sederhana Sehat, adalah suatu teknologi konstruksi sistem pracetak untuk bangunan sederhana. Ditemukan dan dikembangkan oleh Puslitbang Perumukiman Departemen Pekerjaan Umum. Konsep RISHA, menggunakan sistem bongkar-pasang atau knockdown dari komponen-komponen modular yang dibuat secara fabrikasi. Keunggulan konsep RISHA antara lain:

• menggunakan sistem bongkar pasang (knockdown), sehingga mampu mengakomodasi konsep rumah tumbuh (membangun rumah secara bertahap)
• Pembangunan Struktur RISHA dapat dilakukan dalam waktu singkat karena tidak memerlukan pengecoran. Semua sambungan komponennya menggunakan baut dan plat galvanis sehingga menekan biaya kontruksi.
• Menggunakan Pondasi Setempat. Hanya pada titik-titik tumpuan, sehingga menghemat biaya bahan & konstruksi.
• Struktur RISHA telah di uji terhadap resiko gempa sampai dengan zona 6
• RISHA dapat dibangun di berbagai jenis lahan, tentunya dengan pondasi menyesuaikan dengan kondisi lahan yang ada.

Untuk tipe rumah 21, dengan menerapkan konsep RISHA, biaya keseluruhan hingga layak ditempati hanya berkisar 17 juta rupiah dan waktu dibutuhkan waktu penyelesaian hanya 1 minggu. Tujuan yang ingin dicapai dari kegiatan pengabdian ini adalah dapat memberikan wawasan, meningkatkan ketrampilan/skill bagi masyarakat Kampai dan Koto Marapak Padang Pariaman dalam membangun/memperbaiki hunian rumah tinggalnya dengan biaya murah dan waktu pelaksanaan yang singkat. Metode yang akan diterapkan untuk melakukan pengabdian ini adalah dengan melakukan penyuluhan, sosialisasi, survey lapangan serta diskusi dengan pemuka masyarakat tentang Struktur Rumah dengan Konsep RISHA.

Keywords : Struktur, Rumah instan, Ekonomis
HARMONIC FILTER ANALYSIS FOR SAVING AND REABILITY TO INDUSTRIAL ELECTRICITY

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Abstract

Harmonics is a phenomenon that occurs in the industry due to the non-linear electrical load. Harmonic distortion in term of voltage and current ones, generally is due to non linear impedance. This research is a simulation of a simple control scheme for a three-phase shunt passive filter to remove harmonics and save energy compensation of the non-linear loads. Therefore, with the work of the security Molded Case Circuit Breakers (MCCB) and the relay is not in accordance with the rating works. Non linear loads is of Computers, Printers, Air Conditioning (AC), Rectifier, energy saving lamps, motor control, etc. in industrial that cause harmonics. If the voltage and current harmonics injected into wire electrical installation of the industry, there will be a the Harmonic Distortion in power system. Voltage and current harmonics appearing will be a serious problem if the amount exceeds the limits of the standards set by the standards (IEEE 519-1992) International Electrotechnical Commission (IEC). This study is forward to analyze the harmonics distortion by using ETAP software, Result of this study show that THDi obtained before using the filter of 33% and after use filters THDi 13%. There are saving electrical current of 11 Amperes before using the filter 476 Ampere and after using the filter to 465 Ampere. Means a saving of 2.3%.

Keywords : THDi, Filter, Save Energy

A NEW WINDING DESIGN FOR SINGLE PHASE INDUCTION MOTOR

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Abstract

This research is purposed to give a new winding design for single-phase induction motor. The design of the proposed method has three winding like the three phase induction motor. Two winding act as a main winding and other winding act as auxiliary winding. Performance of the single phase induction motor designed in this proposed method is compared with the three phase induction motor in the same current rating of the winding. This way is used for finding the power rating of the proposed method. The three phase induction motor used as a compared is the three phase induction motor with data 380 / 220V, 2.7 / 4.7A, Y / Δ, cage rotor, 4 poles, 1.5 HP, 1400 rpm, 50Hz. The winding current rating of the proposed method is 2.7A that is the same as the 3-phase induction motor winding rating. The result of this study showed that the single phase induction motor design in this proposed method can operate well with power factor close to unity

Keywords : Single phase induction motor design, current rating of the winding, Three phase winding