Book of Absctact
3rd International Conference Earth Science and Energy

17 November 2021

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Welcoming Note

We are delighted to introduce the 3rd International Conference Earth Science and Energy (3rd ICESE 2021) with theme "Sustainable Energy". The technical program has brought researchers and practitioners around the world to a good forum for discussing, leveraging and developing all scientific and underline technological aspects that are relevant to Applied Science, Renewable Energy, and Engineering. Moreover, it is with a great pleasure to have the keynote and invited speakers of 3rd ICESE 2021, Dr. Muhammad Irwanto Misrun (Universiti Malaysia Perlis-Malaysia), Dr. Ir. M. Burhanuddinnur, MSc (Universitas Trisakti-Indonesia) and Dr. Izza Anshory, MT (Universitas Muhammadiyah Sidoarjo-Indonesia). Who will share their knowledge and best innovative research findings in Applied Science, Renewable Energy, and Engineering.

This conference is held by Kresna Acitya Media Nusantara in collaboration with Universitas Muhamadiyah Sidoarjo, Universitas Trisakti Jakarta and Relawan Jurnal Indonesia. Kresna Acitya Media Nusantara is a company that dedicated to maximize impact of scientific publication, and Relawan Jurnal Indonesia, is a non-profit organization in field of scientific publication. The conference will be held virtually using Zoom webinar on November 17, 2021. This conferences was successfully acquire 86 participants and 26 presenters from 2 countries, Indonesia and Malaysia. Thus, all selected papers will be submitted for publication to our publishing partner IOP EES.

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ICESE 2021

Rundown

Wednesday, 17 November 2021		
09.00–09.45	Preparation	Participant, Presenter and keynote joint to room
09.45–10.00	Opening	Zulidyana D. Rusnalasari, M.Hum
	National Anthem "Indonesia Raya"	Organizing Committee
	Panelist photo session	Organizing Committee
10.00–10.15	Opening Ceremony and Welcoming Speech	Dr. Astri Rinanti MT (Direktur LPPM Universitas Trisakti, Indonesia)
10.15–11.00	Keynote and Invited Speaker Speech	Dr. Muhammad Irwanto Misrun Universiti Malaysia Perlis, Malaysia
11.00–11.45	Keynote and Invited Speaker Speech	Dr. Izza Anshory Universitas Muhammadiyah Sidoarjo, Indonesia
11.45–12.30	Keynote and Invited Speaker Speech	Dr. Ir. M. Burhanuddinnur MSc Universitas Trisakti, Indonesia
12.30–12.45	Discussion	Zulidyana D. Rusnalasari, M.Hum
12.45–13.00	Follow up plan	Mochammad Tanzil Multazam, M.Kn

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Analysis of landslide prone areas as the basis for landslide disaster mitigation in Bungbulang district of Garut Regency

(AC-0400 Adi Susetyaningsih / Institut Teknologi Garut), (AC-0401 Aris Ihsan Nurhakim / Institut Teknologi Garut),
Correspondent author: (RJI-1-0059 Aris Ihsan Nurhakim/Institut Teknologi Garut)

Abstract

Landslides are natural disasters that often result in property losses, fatalities, and damage to public facilities. This research aims to map landslide-prone locations and determine mitigation strategies that are in accordance with the conditions of the region at the research site. The parameters used to determine landslide-prone areas refer to the standards that have been set by Puslitanak Bogor, namely, rainfall, slope slopes, land use, geological structures, and soil types. Overlay, scoring, weighting, and classification methods are carried out on all five parameters by utilizing software based on Geographic Information Systems (GIS). Landslide distribution point with a very high category of land movement is found in all villages in Bungbulang District with an overall area of ±218 ha but five villages have a very large threat of loss to the economy and even fatalities including Bojong Village, Mekarbakti Village, Cihikeu Village, Mekarjaya Village, and Wangun Jaya Village. Based on the map of the spread of landslide potential that has been made, a structural mitigation strategy is needed in the form of building a ground retaining wall (TPT) in Bojong Village which is at the coordinate point utm X 789824,828282 Y 9175193,14279, Mekarbakti Village with coordinate point UTM X 788411.150969 Y 9178084,18717, Mekarjaya Village with coordinate point UTM X 784761.725735 Y 9175112.74001, relocation of residents' settlements in Wangun jaya Village with utm X coordinate point X 781667.425142 Y 9177593.35493, and the transfer of land functions in Cihikeu Village with coordinate point UTM X 786159.83242 Y 9177593.35493, as well as by improving maintenance of existing infrastructure infrastructure. Education to the community is also very necessary in maintaining and improving the carrying capacity of the environment, to create a resilient and ready society for disaster threats.

Keywords : Landslide, Mitigation, Overlay.

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Fuel Parameter Analysis from Kerosene Blended with Biodiesel and Diesel Fuel

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Correspondent author : (RJI-1-0066 Annisa Bhikuning/Universitas Trisakti)

Abstract

Biodiesel is one of the potential materials that can be used to substitute for diesel fuel. The raw material is made from vegetable oil that can be renewed, produced periodically, and is easily obtained. The analysis was carried out by using kerosene blended to diesel and biodiesel. Kerosene is a colourless and flammable hydrocarbon liquid, and it was used as fuel oil. The purpose of this research is to analyse the parameters from Kerosene Blended with Biodiesel and Diesel Fuel. The materials are from Biodiesel and Diesel Fuel blended with kerosene with different percentages 80, 85, 90 and 95. The method was used by ASTM D445-19a, ASTM D1298-12b, ASTM D4737-10, and ASTM D86-17. The results of the analysis show that the A95-BS model mixture of biodiesel and diesel is poor, besides that A80-BS and A85-BS with a value of 375, in each viscosity 2.456 cSt kg/m, the performance is excellent for two mixtures, and A80-S model with a value of 357 with viscosity 2,378 cSt kg/m is excellent performance for one type of mixture.

Keywords : Kerosene, Biodiesel, Diesel, Fuel

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[AR-0005]

Fuel and Boiling Point Analysis in Mixing Between Ethanol With Bio-Diesel and Diesel Fuel

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Abstract
Global warming can be caused by pollution in the environment. Pollution comes from combustion from fossil fuels. Therefore, it is important to study some renewable energies for alternative fuels other than fossil fuels. Blending between ethanol to biodiesel and diesel fuel is one practical solution that can be applied. This research was conducted by making a sample of the fuel to be tested with a mixture of ethanol - biodiesel formula (10%, 25% and 35%) and for a mixture of ethanol - diesel fuel (10%, 25% and 35%). The fuel properties were tested such as viscosity, density, boiling fuel, and cetane index. The results show that the addition of ethanol to biodiesel and diesel fuel can produce better fuel properties. Keywords: Ethanol, Biodiesel, Diesel Fuel, Fuel properties, Blending

Keywords : Ethanol, Biodiesel, diesel, blend

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[AR-0007]

Consumer perception towards hydroponic vegetables

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Abstract

The market for hydroponic vegetables in Indonesia is at the beginning of its development, so the knowledge about hydroponic consumers is still lacking. The objective of this study is to find out the perception of household consumers towards hydroponic vegetables. The study was conducted in Kendari, Southeast Sulawesi. Ninety respondents were selected using accidental sampling from household consumers who purchased vegetables at four small-scale hydroponic farms. Data were analyzed using descriptive statistics. Study results showed that consumers perception toward hydroponic vegetables were "high" or "favorable" from health and environmental aspects, and "fair" from knowledge and product characteristic aspects. Overall, consumers have positive perception towards hydroponic vegetables, but there are challenges in terms of price, availability, and market locations. Further researches are needed to assess whether such favorable perception towards hydroponic vegetables has connections with the Covid-19 pandemic, which makes consumers are more concerned with health and environmental aspects of their diet.

Keywords : consumer, household, hydroponic, perception, vegetables

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[AR-0008]

Characterization of Sansevieria Fiber with NaOH Alkalization to Increase Tensile Strength

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Correspondent author: (RJI-1-0063 Edi Widodo/Universitas Muhammadiyah Sidoarjo)

Abstract

Sanseviera fiber has physical and chemical characteristics that support it to be used as a biocomposite booster. The fiber length dimension obtained from decortivation can be maintained well even with a simple and inexpensive method. The tensile strength can be maintained well in the 10% NaOH alkaline treatment which is 1,35 N. The lignin and hemicellulose content can be lost effectively, thereby increasing the compatibility of adhesion with the resin. The alkali treatment was carried out at room temperature of 260 C, soaked for 4 hours, then rinsed to remove dust and other impurities. Alkalization serves to remove the lignin content in the fiber. The results of the FTIR test showed that the remaining lignin still persisted in the fiber at an absorption range of 1600 cm-1 with an aromatic group C=C which was shown from the FTIR peak graph. These results support the exploration of sansevieria fiber as a biocomposite booster

Keywords : biocomposite, sansevieria fibre, polyester, tensile stregth

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Carbonate Reservoir Characterization Based on Rock Type Analysis in Minahaki Formation and Tomori Formation, Hk Field, Banggai Basin

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Abstract

The research area is located in the Banggai Basin, Central Sulawesi, which is part of the eastern arm of Sulawesi Island which originated from the collision between the Banggai – Sula microcontinent and the West Arm volcanic arc from Sulawesi Island. In the research area, there are Minahaki Formation and Tomori Formation which are carbonate rocks. The problem limitation of this research is to characterize the carbonate reservoir based on the distribution of rock types in the research area. The intention of this study is to analyze carbonate reservoirs with petrophysical property parameters, and analyze reservoir characterization based on rock type distribution, while the purpose of this study is determine the petrophysical property values of the Minahaki Formation and Tomori Formation, then determine the distribution of rock types to determine the characterization of reservoirs in the study area. The research method begins with literature study, data collection, and data analysis. The results of the petrophysical analysis and pay zone in the Minahaki Formation obtained an average net pay thickness of 359.5 ft – 398.5 ft, vshale 23.55% – 34.48%, PHIT 13.33% – 22.84%, PHIE 9.9% – 16.89%, Sw 61.23% – 76.95%, and permeability 610.5 mD – 1360.1 mD. Meanwhile, in the Tomori Formation, the average net pay thickness is 52.5 ft – 679 ft, vshale 16.53% – 34.7%, PHIT 3.5% – 7.87%, PHIE 2.77% – 6.09 %, Sw 26.01% – 42.97%, and permeability 39 mD – 161.9 mD. Rock types in the study area are divided into six rock types, namely rock type 1 has an FZI value of $\leq$ 0.245 micrometers, rock type 2 has an FZI value of 0.314 – 0.48 micrometers, rock type 3 has an FZI value of 0.5 – 0.965 micrometers, rock type 4 has an FZI value of 1.04 – 2.35 micrometers, rock type 5 has an FZI value of 2.36 – 15.08 micrometers, and rock type 6 has an FZI value of 19.66 – 78.82 micrometers.

Keywords : Reservoir characterization, Petrophysics, Rock type, Banggai Basin

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[AR-0011]

Granitic Basement Fracture Analogue by Using Integrated Digital Outcrop Model and Fieldwork, at Muaro Silokek, West Sumatra

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Abstract

The aim of the study is to determining fracture characteristics such as orientation, fracture attributes, fracture density distribution, and mineral composition of quartz and feldspar. The study was conducted using photogrammetry data to know the distribution and geometry of macro scale fracture, linear scanline and windows scan data to know the characteristics meso scale fracture attribute, and thin section rocks data from oriented samples to determine petrographic analysis and micro-scale fracture. After each of these data is analyzed, analog basement fractured reservoir modeling could be build from the integration of the data and using modeling parameters based on available fieldwork data. The fault in the research area is represented as a Riedel shears with the orientation direction of NNW-SSE, NE-SW, and ENE-WSW. The fracture density is influenced by its position on the fault and increases in the fault damage zone. The granite type in the study area was divided into three type, namely alkali feldspar granite, syenogranite, and monzogranite. Each of the granite types has a different response to fractures and shows that the greater composition of quartz and k-feldspar in the fault damage zone, the fracture density will increase. Fracture permeability values are strongly influenced by geometry of fracture position, fracture aperture, and fracture length. This study produced a new perspective for basement fractured reservoir, especially for granitic rocks, which is generally the main target for basement fracture reservoir along Sumatra.

Keywords : granite, basement fracture, reservoir modeling, mineral composition, photogrammetry

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[AR-0013]

Middle Phase Behavior of SLS Surfactant Bagasse at Intermediate Crude Oil

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Correspondent author: (RJI-1-0071 Renato Aditya Patria Pradhana/Trisakti University)

Abstract

The middle phase emulsion is the most important parameter in the compatibility test that determines the success of the surfactant in the Enhanced Oil Recovery (EOR) process. The purpose of this research was to observe the mid-phase emulsion formed on the use of Sodium Lignosulfonate (SLS) surfactant at various concentrations. One of the compatibility tests that will be used is the phase behavior test. Phase Behavior is carried out to determine whether SLS surfactant forms a middle phase emulsion when used in a crude oil. The method used in the phase behavior test is 2 mL of surfactant solution with a certain concentration mixed with 2 mL of crude oil which is inserted into a scaled test tube. Then the surfactant and crude oil solution in the test tube was shaken slowly. During the test, the test tube was placed in an oven at a temperature of 60o C for 21 days. The first observations were made during the first shaking process, then observed at 30 minutes, 60 minutes, 2 hours, 1 day, 2 days, 7 days, 14 days and 21 days. The formation water salinity where used at 40,000 ppm, 60,000 ppm and 80,000 ppm. From the results of this phase behavior test, the best mid-phase emulsion was formed at a surfactant concentration of 2.5% at 40,000 ppm of formation water salinity with an emulsion value of 11.3%. While the 60,000 ppm and 80,000 ppm formation water salinity formed the upper phase emulsion. From this research, it can be concluded that the formation of the middle phase emulsion of SLS surfactant bagasse in the intermediate crude oil was influenced by the salt content of the formation water used.

Keywords : bagasse, enhanced oil recovery, middle phase emulsion, SLS surfactant

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[AR-0014]

Performance of SLS Surfactant Bagasse Using Imbibition; Methode: Literature Research

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Correspondent author: (RJI-1-0072 Ulil Amri/Universitas Trisakti)

Abstract

The purpose of this study was to determine the oil recovery that occurs through the imbibition method. Imbibition is a flow that causes an increase in the saturation of the wetting phase. Imbibition begins when the saturation of the wetting fluid increases and the saturation of the non-wetting fluid decreases. The wetting phase will enter spontaneously into the porous media and push the non-wetting phase with capillary pressure. With the entry of water into the porous rock that is saturated with oil, the water will push the oil grains trapped in the pores. The oil is generally trapped in rock media because the sweeping process has not been maximized in the primary recovery and secondary recovery. This research method was carried out experimentally by measuring imbibition using Amotts cel. The use of the core that has been inserted into the oil is inserted into the cell and observations are made on the appearance of the oil that is read in the Amotts cell tube. carried out for 30 days. The research was conducted on samples of intermediate crude oil using Sodium Lignosulphonate (SLS) bagasse surfactant at concentrations of 1%, 1.5%, 2% and 2.5%. The salinity of the formation water used was 20,000 ppm. Based on the results of this study, it turned out that the best imbibition occurred in the surfactant with a concentration of 1.5% which resulted in an oil recovery of 60%. From this research, it can be said that imbibition can determine the performance of the surfactant before the injection process is carried out into the rock.

Keywords : amotts cell, bagasse, enhanced oil recovery, imbibition, SLS surfactant

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Analysis of The Efficiency Level of Value Chain on Livestock with FMEA (Case Study: Chicken Meat)

(AC-0408 Hana Catur Wahyuni / Universitas Muhammadiyah Sidoarjo), (AC-0409 Ika Ratna Indriastuti / Universitas Muhammadiyah Sidoarjo), (AC-0410 Rima Azzahra / Universitas Muhammadiyah Sidoarjo),
Correspondent author: (RJI-1-0075 Hana Catur Wahyuni/Universitas Muhammadiyah Sidoarjo)

Abstract
In health, livestock products are a source of animal protein which is important for human health. However, in its development, there is a problem of inefficiency in the value chain of livestock products. This study used a case study on the chicken meat value chain. The research objective was to identify the value chain flow of chicken meat, identify the types of inefficient activities, and measure the level of inefficiency of each of these activities. The research method used is Failure Mode Effect Analysis (FMEA). The research was conducted in two stages. The first stage is carried out through observation to identify value chain flows and types of inefficient activities. The second stage is used to conduct an assessment so that the results of the inefficiency level are obtained. The results showed that there were several actors in the chicken meat value chain, including breeders, chicken distributors, chicken slaughter companies, chicken meat distributors, and chicken meat retailers. Overall, there are 25 inefficient activities in the chicken meat value chain. Activities with a high level of inefficiency occur in the process of slaughtering chickens. Therefore, the process of slaughtering chickens needs to be a priority for improvement in the future

Keywords : value chain, livestock, meat, efficiency

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[AR-0018]

The Near Future Growth Expectations of The City Gas Covering The Historical Sites in Jakarta-Indonesia

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Correspondent author : (RJI-1-0076 Andry Prima/Universitas Trisakti)

Abstract

By far, the National Energy Policy has underlined the significance of renewable energy development in Indonesia and also strengthened targets for the national energy mix. As for this fundamental goal, an array of strategies, blueprints, and collaborations with unprecedented wide networks should be explored in the long term. Moreover, one of the prioritized alternatives is to exploit natural gas as a primary and environmentally friendly energy resource. Gas, which is also known as green energy, is projected to contribute significantly at least 22% of total energy to increase the national economic growth. Thus, approximately, 10 million city gas connections are expected to be onstream by 2025. In line with Indonesia's National Energy Policy, the first phase is to develop 266,070 gas connections by 2020. This project was later toward the end of the year adjusted to 127,864 after the Covid 19 pandemic broke out. Surprisingly, this realization exceeded the first planned target by more than 6% or equal to 135,286 extra connections. Henceforth, such figures of achievement has built strong confidence on the development of a minimum of 10 million city gas pipeline connections by 2025. In this particular scope of research, the community living in the historical sites namely Kota Tua in Jakarta, the capital city of Indonesia. Furthermore, this study might function as pre-Feasibility Study providing a general overview of the LPG needs that are routinely consumed by the residents in the area. The need is then projected as the total volume of city gas that will substitute the LPG. By using the multivariable linear regression method, it is expected that the results of the study could reveal a number of variables that can affect the forecast for city gas needed in the Historical Sites of Kota Tua. Moreover, it is also possible for the Provincial Government

of DKI Jakarta to adopt the model as means to project city gas needs in the DKI Jakarta area.

Keywords : green energy, city gas, gas connection, linear regression

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[AR-0021]

The Implementation of Science Techno Park for Introducing Renewable Energy to The Remote Island Communities: The Case Study of Talaud Island

(AC-0402 Meita Rumbayan / Faculty of Engineering, Sam Ratulangi University, Indonesia), Correspondent author: (RJI-1-0081 Meita Rumbayan/Universitas Sam Ratulangi)

Abstract

This is a progress report of the community service program on the implementation of renewable energy technology in a coastal community in the remote island of Talaud, North Sulawesi, Indonesia. Energy security is a problem existing at the Talaud island which is located in the border between Indonesia and Phillipines. Energy utilisation is one of the most important issues to facilitate good living for the people in the remote and rural communities. This method of implementation includes literature review, survey and data collection, and data analysis of the case study in Science Techno Park that is developed in Kiama village. The discussion in this paper gives some conclusions as well as recommendations for further study and guidelines as well as action plan to support sustainable development goals for the island communities.

Keywords: Community service, Science Techno Park, Renewable Energy, Remote Island, Talaud

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[AR-0022]

A New Method of Applying Corona Plasma to Enhance the Process of Purifying Wastewater

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Abstract

Coal mining activity by using an open mine system has the potential to destroy the environment; one of which is the production of mine acid water. The goal of this research is to acknowledge the acid mine water quality of the PT X mining site before getting involved in Plasma and Electro coagulant and after being tested. The result of the AAS test shows a pH value of 3.3 which means that the acidic level is high. The overall water condition in the PT X coal mining site shows high acidity. Based on that, a trial to increase pH and lower heavy metal was conducted. The effective way is by conducting a physics treatment that consists of a combination of electro coagulant and corona incandescent plasma, which has been proven to be able to produce a pH level of 5 and a heavy metal compound of 1101.

Keywords : pH, AAS, mine acidic water, corona plasma, electro coagulant.

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[AR-0023]

Determination of Polymer Injection Method to an Oil Field Using Screening Criteria: Literature Review

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Correspondent author: (RJI-1-0082 Hayafa Fakhriyatul Ummah/ Trisakti University)

Abstract

The amount of oil reserves in Indonesia is currently still large, but has not been able to meet the needs of enegi. To overcome this imbalance, one of the efforts that the government has made in improving oil lifting is through Enhanced Oil Recovery (EOR). The purpose of this research, is to determine the right EOR method for a reservoir by conducting a screening criteria on one of the fields in Indonesia. EOR is a method of increasing the volume of oil that previously could not be produced. This condition usually occurs in heavy crude oil, poor permeability and irregular faultlines. EOR is applied to fields that have been produced long enough (mature field) with the aim of taking the remaining oil that cannot be produced by primary and secondary (water flooding) methods. Some of the EOR techniques that are widely known to date are steam flooding, chemical flooding, and gas injection (gas flooding). The study is a reservoir X that has a six-aspect match from seven aspects suggested by Taber et al. namely polymer injection as an EOR method. The six aspects are the magnitude of oil gravity, oil viscosity, porosity, permeability, depth and temperature. From this research it can be concluded that, in Field X is very suitable for the EOR Method with the Chemical Flooding Method, by injecting polymer compounds.

Keywords : Enhanched Oil Recovery, Chemical Flooding, Polymer Injection, Screening Criteria

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[AR-0024]

Reservoir Simulation Using Water and Chemical Injection Scenarios On B Structure of "X" Field

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Abstract

B Structure is part of "X" Field has been producing oil since 1993. Cumulative oil production until December 2020 is 32.3 MMSTB, around 36% of OOIP and contribute arround 80% total oil production of PSC area. The oil production declining fastly due to reservoir pressure depletion. In order to recover the remaining oil, efforts to increase reservoir pressure such as water and chemical EOR injection are needed. The main objective of this study is to get best scenario for producing remaining oil in B Structure. Static and dynamic reservoir model with updated data were created to obtain multi scenario production oil recovery. Economical evalutions are needed to make sure that project scenarios reliable to be implemented. Black oil method in reservoir simulation applied in E-314 formation was the limitation of this study. Four exploitation scenarios were applied to drain remaining oil in B Structure. Scenario-4 by injecting Water + Alkaline Surfactant Polymer (ASP) + Polymer was the most optimum scenario, which gave incremental oil production of 9.4 MMstb or increasing 11% Recovery Factor (RF). Economic analysis in scenario-4 is carried out using the term PSC Gross split, resulting the economic parameters of Government Take of 83 MM$, Contractor NPV of 29.3 MM$, IRR 31.4% and pay of time 5.6 years.

Keywords: Static Modeling, Reservoir Simulation, Water Injection, Alcaline- Surfactant- Polymer, Economics Evaluation

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[AR-0025]

Effect of Tool Diameter And Feeding Speed on Surface Roughness in The AISI 1045 Steel Milling Process

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Abstract

This paper discusses how the influence of the tool diameter on the surface roughness of the workpiece, how the effect of feeding speed on the surface roughness of the workpiece and whether there is an interaction between the tool diameter and feeding speed on the workpiece surface roughness in the AISI 1045 steel milling process. Variables that are varied in this study were the tool diameter, namely 6 mm, 8 mm, and 10 mm and the variation of feeding speed used was 33.5 mm/min, 59.4 mm/min and 111.9 mm/min. After the AISI 1045 steel milling process by varying the specified parameters, and then the surface roughness test of the workpiece is carried out. From the results of research that has been done, it can be concluded that, tool diameter and feeding speed together have a significant effect on the surface roughness of the workpiece in the AISI 1045 steel milling process.

Keywords : Effect ,Feeding Speed,Milling Process

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[AR-0026]

Implementation of Load Balancing and Management Bandwidth PCQ Type Queue Tree in The Coffee Shop

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Abstract

In a coffee shop not only sell food and beverages but there are also other facilities such as free internet connection to attract the customers. In fact despite having two ISP, inequality traffic still happens due to the number of users is not well distributed. Therefore we need a system that can management network. The purpose of this research is to design the distribution of the load connection is evenly distributed to both the ISP using the method of PCC and bandwidth management using the method of PCQ Queue Tree and Limitations of using the features of the router mikrotik User Manager for an bandwdith. The results of network testing showed the occurrence of the distribution of the load connection and the bandwidth on the second ISP as well as in testing the QoS obtained very nice results based on standard TIPHON and ITU-T. So with the existence of a network system are expected to be able to an internet network at a coffee shop.

Keywords : Bandwidth; Load Balancing; PCC; PCQ

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[AR-0027]

Smoke detection system in room with webcam camera equipment

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Abstract

Abstrak: Cigarettes are a mixture of tobacco, cloves and other materials wrapped in paper. The content of substances that exist in cigarettes consists of nicotine, carbon monoxide, tars that are carcinogenic and free radicals, such as radical nitric oxide and so on. Air is one source of human life that can be obtained freely. Good bad air quality can affect human health and activities. The MQ2 sensor is used to detect the presence of smoke and forwarded to the arduino microcontroller to be processed by the ouputan of the character writing form on the Liquid Crystal Display and turn on the buzzer. The MQ2 sensor has a detect distance between the sensor and the smoke center point at a 45° angle state between the front, right side, left side more than 60 cm. While parallel straight between the center of the smoke with the sensor distance of more than 90 cm at the time of detection 132 seconds. Very effective ie with the state of the campus that a lot of lighting allows webcams to capture a good image and efficient ie with a small tool does not need many places .

Keywords : Microcontroller; MQ-2 gas sensor; Cam Camera Web; LCD; buzzer

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Design of Information System Ordering Service Design and Print Web-Based in Digital Printing Indesign Store

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Abstract

Abstract. In the current era of globalization, the advancement of information systems is now needed because it can facilitate performance in a company, one of which is in the business of design and print services. INDESIGN is a small company engaged in services, especially design and printing, in serving customers and managing sales reports still using its system. So that a useful system is needed to facilitate print performance in providing the best service for customers. Therefore, the purpose of this research is to design a system that is the design of a web-based design and print ordering information system in the Indesign digital printing store. The system development method used in this study is the Waterfall Method. The stages of data collection used are literature studies, observarsi, and interviews. PHP is a programming language in system creation, and mySQL as its database. The results of system testing from this study using blackbox testing by providing input on the program showed that the features in the system had no errors and were running in accordance with the function very well.

Keywords : Black Box Testing; Bussines; Information System; Waterfall

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