LEMBAR
HASIL PENILAIAN SEAWARE SEBIDANG ATAU PEER REVIEW
KARYA ILMIAH : JURNAL ILMIAH

Judul Karya Ilmiah/Artikel : Modelling of suspended sediment transport in coastal Demuuk Indonesia by using current analyzing
Jumlah Penulis : 6 (Enam)
Status Pengusul : Penulis pertama/penulis kedua/penulis korespondensi
Penulis Karya Ilmiah : Deuuy Nugroho Sugianto, Sugeng Widada, Anindya Wirasatriya, Aris Ismanto, Alfin Darari, dan Suripin
c. No. ISSN : 1819-6608
d. Nomor, Volume, bulan, tahun : No. 16 Vol. 12 Tahun 2017
e. Penerbit : Asian Research Publishing Network
f. Alamat Web Jurnal :
g. Terindeks di Scimagojr/Thomson Reuter ISI knowledge atau di..

Kategori Publikasi Jurnal Ilmiah : Jurnal Ilmiah Internasional / Internasional bercoretasi

(beri ✓ pada kategori yang tepat) Jurnal Ilmiah Nasional Terakreditasi

Jurnal Ilmiah Nasional Tidak Terakreditasi

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Catatan Penilaian Paper oleh Reviewer:
- Kesempurnaan isi sejauh mungkin analisis model dan dengan penelitian yang berkenaan
- Analisis langkah kritis dalam aspek pengembangan umpan balik penelitian
- Motivasi untuk analisis transport sedimen relatif mutakhir

Semarang,
Reviewer 1

[Signature]

NIP. 196207131987031003
Unit Kerja : FPIK UNDIP
LEMBAR
HASIL PENILAIAN SEJAWAT SERIDANG ATAU PEER REVIEW
KARYA ILMIAH : JURNAL ILMIAH

Judul Karya Ilmiah/Artikel : Modelling of suspended sediment transport in coastal Demak Indonesia by using currents analyzing

Jumlah Penulis : 6 (Enam)
Status Pengusul : Penulis pertama/ penulis ke 2/ penulis korrespondensi $$$
Penulis Karya Ilmiah : Denny Nugroho Sugianto, Sugeng Widada, Anindya Wirasatriya, Aris Ismanto, Alfin Darari, dan Suripin

Identitas Karya Ilmiah
b. No. ISSN : 1819-6608
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e. DOI Artikel (jika ada) : -
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Prof. Dr. Ir. Ambartiyono, MSc
NIP. 196104131982031002
Unit Kerja : FPIK UNDIP

\[27\]

Modelling of suspended sediment transport in coastal demak Indonesia by using currents analyzing

Sugianto, D.N.¹, Widada, S.², Wirasatriya, A.³, Ismanto, A.³, Darai, A.⁴, Surripin⁵

¹Department of Oceanography, Diponegoro University, Semarang, Indonesia
²Department of Physics, Diponegoro University, Semarang, Indonesia
³Department of Civil Engineering, Diponegoro University, Semarang, Indonesia

Abstract

Demak experienced severe abrasions in recent years and Demak coastal erosion has become a national issue. In this study we conducted through a case a study influence of ocean currents and soils structures abrasion. The study covered from 3 - 10th June 2016 with ADCP to record 7 x 24 hours. The shear stress in the flow above a bottom-mounted ADCP is estimated from the difference of velocity variance in the opposing ADCP beams. The dynamics of current velocity and validation with current measurement using Sontek Argonaut observation, it was obtained a value of RMSE. The result is the highest flow velocity occurs at a depth of 6 m flow velocities ranging between 0098-0126 m / s east and 0114-0149 m / s north. The yield on the scatter plot shows that the predominant direction of the current is moving to the Northeast. © 2006-2017 Asian Research Publishing Network (ARPN).

Scival Topic Prominence

Topic: Acoustic Doppler Current Profiler | Suspended sediments | Acoustic backscatter

Prominence percentile: 82.203

Chemistry Database Information

Substances

Author keywords

Demak, Indonesia, Modelling, Sediment, Transport

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Advances in sediment transport under combined action of waves and currents
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Title: Renewable energy systems with integrated active filter capabilities
Author(s): Pathan Soheba Taj, J. Jayachandran and Malathi S.
Abstract: Conventional energy sources are not preferred, rather, wind energy is mainly used which is a renewable source of energy and is unlimited in nature. Wind turbines are of two types-variable speed wind turbine and fixed speed wind turbine. At distinct wind speeds, wind turbine has to run at variable rotor speed to obtain the maximum power. Power converters can be used to accomplish the maximum power. DFIG is one among variable speed wind turbine and is mainly considered, due to its high energy output, damping performance, low-converter rating and low cost. Another renewable source of energy which is nothing but solar energy is incorporated by applying Synchronous reference frame algorithm. For improving maximum power and to obtain maximum power wind energy conversion system (WECS) is provided with doubly fed induction generator (DFIG). The role of rotor side converter (RSC) is to distribute reactive power to DFIG whereas grid side converter (GSC) is used to get even DC voltage and reduce harmonics which is due to non-linear load. WECS acts like DFIG to reduce deviations and distortions of voltage and current from sinusoidal waveform even when the wind turbine is at halt. In case of solar system, for reactive power compensation and to get three phase active power the SPV system is linked to VSC. For extracting maximum power and to increase the efficiency from the SPV array, a single-stage three phase grid system is used along MPPT technique which is integrated with the synchronous reference frame algorithm. Both the sources are compared and the best system out of the two systems has been obtained using MATLAB simulation.

Full Text

Title: Modelling of suspended sediment transport in coastal Demak Indonesia by using currents analyzing
Author(s): Denny Nugroho Sugianto, Sugeng Widada, Anindya Wirasatya, Aris Ismanto, Alfin Darari and Surjito
Abstract: Demak experienced severe abrasions in recent years and Demak coastal erosion has become a national issue. In this study we conducted through a case a study influence of ocean currents and sole structures abrasion. The study covered from 3 - 10th June 2016 with ADCP to record 7 x 24 hours. The shear stress in the flow above a bottom-mounted ADCP is estimated from the difference of velocity variance in the opposing ADCP beams. The dynamics of current velocity and validation with current measurement using Sontek Argonaut observation, it was obtained a value of RMSE. The result is the highest flow velocity occurs at a depth of 6 m flow velocities ranging between 0.098-0.126 m / s east and 0.014-0.049 m / s north. The yield on the scatter plot shows that the predominant direction of the current is moving to the Northeast.

Full Text

Title: A comparison analysis of PWM circuit with Arduino and FPGA
Author(s): A. Zemmouri, R. Elqouri, Mohammed Alareqi, H. Dahou, M. Benbrahim and L. Hlou
Abstract: This paper discusses a comparison between two PWM circuits the first based on control boards such as Arduino by its IDE (The Arduino Integrated development environment) and the second FPGA mono processor architecture (Micro Blaze) as the circuit formed by the VHDL. This study compared the space occupied and the power dissipated by PWM circuit between both platforms Arduino and FPGA. The PWM circuit was simulated practically on Arduino boards and FPGA vertix5 by the oscilloscope and data acquisition with Signal Express software provided by NI LabVIEW.

Full Text

Title: Preliminary study design model for harmonic filter of power system stability using ETAP Power Station
Author(s): Erwin Dermawan, Deni Alamanda, Dede Erland Ramadhan, Ery Diniardi, Syawaludin and Anwar Ilmar Ramadhan
Abstract: Harmonic current and voltage harmonic are one of the problems that commonly occur in a power system which has a
 constituent component in the form of non-linear loads. Harmonic currents and harmonic voltage can affect the stability of the power system itself and have a negative effect on electrical components others, therefore we need a step that needs to be done to minimize the adverse impacts of the case one of them is to use passive filters. The method used is to use measurement data acquisition is then carried through a simulation calculation for the initial model designs using ETAP Power Station. Results obtained are: the average value of the magnitude of harmonic currents and harmonic voltage varies with the largest value occurs on the order of 3, therefore, the design of the filter is set on the order of 3. And the value of THD and THDV before and after the filter mounted on the initial design models using ETAP Power Station is the value of THD and THDV before installed are 18.87% and 5.33%, whereas once it's installed and the values THDI and THDV are 13.24% and 3.46%.

Title: Design and analysis of wind turbine Nacelle transport frame for road transport
Author(s): S. Ravikumar and S. Harish Kumar
Abstract: The Wind turbine is a machine which produces electricity by using Kinetic energy of the wind and convert to mechanical energy. There are many mechanical components involves such as blades, hub, Nacelle etc. Transportation of wind turbine components is a very critical process due to its large size and weight which to be handled with precaution. This paper deals with the transportation of wind turbine nacelle transport frame from manufacturing site to erection site. Road conditions in India have many bumps and uneven road surfaces which cause sudden impact and vibration are two major factors which have a direct effect on a nacelle is being transported by road. The vibration that occurs in Nacelle structures and its transport frame is undesirable, not only because of the resulting unpleasant motions, noise and dynamic stresses which may lead to fatigue and failure of the structure. The result of the vibrational condition causes damage to nacelle bed frame. The Nacelle bed frame with transport frame is taken in the consideration and checked for its performance for road vibration condition. A transport frame model with a bed frame and yaw top is modeled using 3D software Pro/Engineer wildfire 5 and Analyzed using analysis software code called Ansys Workbench 16. It is usually much easier to analyze and modify a structure at the design stage than modify a structure with undesirable vibration characteristics after it has been built. For the damages caused to a wind turbine nacelle bed frame due to random vibration, the operating frequency of the existing transport frame was modified and dynamic analysis has been performed to prevent such damage.

Title: Review on hole cleaning for horizontal wells
Author(s): Bashir Bushamhi, Nawaf H, Saeid, Gamal Alustia and El-Said M. M. Zahr
Abstract: Since the demand for oil is increasing worldwide, it is expected to drill more and more wells, like vertical, horizontal and directional wells. However nowadays the economy is a bit down, where the oil price is fluctuating. To decrease the cost of drilling operations and increase the recovery performance, the parameters that control the hole cleaning must be investigated and optimized especially in horizontal and deviated wells. In these wells the cuttings concentration is higher than in straight holes, therefore a usable hole then will be obtained. Currently the hole cleaning topic become more challenging subject matter and important issue for researchers. Therefore, in this study a set of analytical and a numerical model is presented for vertical and the horizontal well- bores. The critical transport fluid flow and the subcritical fluid flow i.e. moving upward or downward of the cutting bed concentrations is a major effect on hole cleaning. Inadequate hole cleaning and formation of beds lead to problems such as, premature bit exit, high torque and drag, stuck pipe and slow drilling rates which increase drilling time and costs. For vertical wells, as addressed in the literature, the proper hole cleaning is basically dependent on drilling hydraulics which includes; mud rheology i.e.mud viscosity, formation, near wellbore, gel strength, etc. Formation, near wellbore, gel strength, etc. is noticed near the section of the annulus and the transport of the cuttings in the annular section occurs in the form of multiphase flow regime. Drilling fluid flow rate, angle of inclination and rate of penetration have a major impact on cutting concentrations. Proper prediction of these parameters is important to avoid formation of cutting beds. This research will propose a numerical model for hole cleaning in the horizontal well-bores as well as the comparison between vertical and horizontal well-bore.

Title: Design and analysis of vibration isolation pad of a heavy load machine and to perform the progressive rate frequency analysis
Author(s): A. Krishnamoorthy and M. Jayavel
Abstract: Vibration isolator is a material which is placed at the bottom of the small or heavy machineries in mechanical industries to reduce vibration of machine in dynamic condition. Recent years, the materials used in the isolation pad are elastomeric pads or mounts, helical steel springs, wire rope springs, and air springs. In this paper, we deal with increasing the performance of isolation pad from existing one by changing the design and material of the isolation pad. Existing design has a spring isolator and two new design models are created using "Spring Isolator model". The redesigned model has a helical spring with a parabolic shaped part, attached to it and the other model is helical spring with the spherical ball shaped part, attached to it. The design models have been designed in solidworks. Static and dynamic analysis have been performed in ANSYS Workbench.

Title: Video based Indian sign language recognition using block zig-zag DCT features and Mahalanobis distance classifier
Author(s): Sunilta Ravi, M. Suman and P. V. V. Kishore
Abstract: The objective of this paper is to recognize discrete words from videos of Indian sign language. Sign language recognition is still not popular research area in India till recently. This paper introduces a fast model to extract hand form the video sequences and to generate features. We introduce a local cosine feature (LCF) to describe the hand shapes with minimum number of features. It is based on 2D discrete cosine transform (DCT) applied through total variational model. The features for each sign video are classified with Mahalanobis distance classifier. Mahalanobis distance based pattern analysis is becoming popular due to their compactness and faster time to execution. A total of 2D isolated words are from Indian Sign Language (ISL) are trained and tested. Experimental results using the proposed model produced a recognition rate of 90.44%, which when compared to system with DCT features which is 81%.
Title: Evaluating the effect of viewing angle in different conditions for gait recognition
Author(s): Nahid Ameer Makhdooom, Teddy Surya Gunawan and Mira Kartiwi
Abstract: Gait recognition has gained interest of researchers as it performs identification of subjects at a distance from the camera. However, due to the changes in the viewing angles, it gets cumbersome for a system to perform recognition based on the walking pattern of an individual. In this work, the aim is to present a baseline method for the purpose of human recognition based on the shape of its body and walking pattern when the subject is observed from different viewing angles. The recognition is also tested on the subject in two different scenarios, apart from being observed at different viewing angles. Gait periodicity is estimated after extracting the silhouettes of an individual, followed by obtaining the total silhouette representation of an individual using Matlab. The total silhouette representations obtained from the probe gait data are compared to the gallery gait data representations for the purpose of similarity computation by calculating the RMS value between the said representations. Higher the value, lesser is the similarity & vice versa. The experiments are conducted on the CASIA gait dataset and obtained the gait recognition rate ranging from 23% to 69% in different scenarios. The results show that the proposed method outperforms the other existing methods & puts a decent fight to the base algorithm.

Title: An automatic hybrid approach to detect concealed weapons using deep learning
Author(s): Sahad Al-Shoukry
Abstract: Detecting concealed weapon underneath a person’s clothing is important for public safety in places such as airports. The success rate of our proposed approach in detecting concealed weapons based on fused images is higher than that of the bag-of-features approach. Our approach uses a traditional discrete wavelet transform with hybrid bag-of-words to obtain fused imagery. We then utilized convolutional neural network (CNN) with a pre-trained CNN model using the CNN features of the fused image to train a multi class SVM classifier. Our approach works well with X-ray images. The experimental results indicate the efficiency of the proposed hybrid approach.

Title: Analysis of combined metal casting thermal conditions: The pressing process during conform installation
Abstract: The outlet temperature of the profiles is determined by the thermal conditions of the combined Conform process and exerts a decisive influence of this process’ effectiveness. Therefore, designating the thermal conditions for continuous pressing via the Conform method is an important task instrumental in rationally devising a manufacturing technology for profiles. The temperature conditions for the pressing process may be calculated via numerical methods since an augmentation in the tool’s rhythm and factors would only result in an increased quantity of calculations and the need to utilize COMPUTERS with the corresponding storage spaces and speed. At the same time, the application of engineering calculation methods, especially when analytical dependence is obtained with a reasonable degree of accuracy, is still important and useful. This article presents engineering methods designed for determining thermal conditions based on a heat balance equation that are easily realized in the Microsoft Excel program and allow us to determine temperature conditions in the course of pressing in the case of discrete initial data input. The practical application of this obtained solution does not require the special skills that engineers and technicians possess and provides a means to analyze the influence of the process’s key parameters in the event of a change in temperature conditions during the course of pressing for the purpose of developing an optimum manufacturing technology for profiles.

Title: Dynamic load balancing using Queuing Interface System
Author(s): Sairam R., Neshan Anand and V. Deeban Chakravarthy
Abstract: Software-Defined Networking (SDN) has grown to become a very promising network architectural design in which network devices are controlled by a SDN Controller. Employing SDN offers an attractive solution for network security especially for brute force attacks in SDN environments. This project analyzes the characteristics of the traffic flow upstream to an ISP server during both states of normal and brute force traffic attacks. Based on the traffic analysis, an SDN-based Attack Prevention design is constructed which proposes to capture and analyze incoming flows on-the-fly. A channel search prevention mechanism was then designed using both hard decision thresholds and Queuing Inference System to detect the Brute force attack. The system is designed in a way which releases attack flows based on the demands from the control plane in order to detect and determine the presence of attacks.

Title: Welding power supply with improved power quality
Author(s): Sridiva A. S., S. Melathi and J. Jayachandran
Abstract: A switched mode power supply for Manual Metal Arc Welding (MMAW) is proposed in this paper. This is done as a comparative study, using two different converters at the front end - namely, Zeta converter and Canonical Switching Cell converter. Both the converters operate in discontinuous Inductor current mode (DICM) to accomplish inherent Power Factor Correction (PFC). This mode of operation reduces the intricacy of control and provides considerable dc-voltage regulation. A pulse width modulated (PWM) isolated full bridge dc-dc converter is used at the load side, for both the devices to provide high frequency isolation. A closed loop for current is being incorporated to incorporate dc voltage regulation at the output and to provide over current protection, so that the designs are suitable for the intended application. The designs have been simulated and the results obtained show how these two designs satisfy the requirements of the power supply for arc welding processes. These have been evaluated on the basis of power supply current, dynamic characteristics, power factor and voltage regulation.

Title: SDN enabled packet based load-balancing (PLB) technique in Data Center networks
Author(s): J. Saisagar, Prashant Kathari D., Rutraj U. Kadikar and V. Deeban Chakravarthy
Abstract: The traffic in Data Center networks has been increasing constantly in the past few years. It is almost impossible for one server to handle all the requests coming from the client because of this huge traffic. Hence the solution is to balance the load by transferring the traffic to the underutilized core switches. Traditional load balancers use very expensive and inflexible hardware. Since these load balancers are locked in by the vendors, only few fixed algorithms can be used which neither can be modified in the future nor innovative algorithms be created by the network administrators. An alternative of these hardware based load balancers is to use SDN Load balancers. These SDN load balancers do not require costly hardware and can be programmed, which makes it easier to implement user-defined algorithms and load balancing strategies. In this paper, we have implemented packet based load balance technique using OpenFlow v1.4 Switches connected to ONOS controller.

Title: Design and implementation of E-commerce web application
Author(s): Vinitha Stephie V. and M. Lakshmi
Abstract: The primary focus of this paper work is about the design of Web portal for the trading and welfare for pets. A "usability subculture" has evolved as a result of emerging web technologies. The user centered design will become more important in an increasingly competitive market. Because of this application the users can make an ease approach into Veterinary Science, clubs, buying and selling of pets and its accessories. By viewing this site, one can make clear decision while buying a new pet initially. Further one can get to know information about the breed and its life cycle, in regard with its nature, habits, food culture and purpose. The people who are fond of animals can opt themselves as a social reformer. A user can also enroll themselves as a community member and have a full access towards its responsibilities. In additional, anyone can get to know about nearby locations anywhere related to pets. Thus this web application enables one’s mind to be enlightened and one to get their loved ones & their necessities at one spot.

Title: Finite element analysis of mode I and mode II micromechanics of mid - diaphyseal femur transverse fracture based on cortical bone homogeneity
Author(s): Nurul Najwa Mansor, Ruslamin Daud, Khairul Salieh Baseredin, Fauzi Mat and Yazid Bajuri
Abstract: The mechanic of diaphyseal fracture in human cortical femur bone depends on the bone fracture resistance. At microscale, composition and nanomechanical properties of diaphysis femur at all cortices may contribute to the fragility of fracture. This paper present a finite homogenity model of two-dimensional micromechanical diaphysis cortical femur bone subjected to Mode I loading condition. The fracture parameter e.g. stress intensity factor (SIF) and strain energy release rate are evaluated based on linear elastic fracture mechanics (LEFM) theory. The finite element (FE) modeling were simulated for four anatomical positions in cortical bone which are posterior, anterior, medial and lateral at different variability of bone properties, associated to transverse crack which is isotropy linked to its microstructure. The results indicate a good agreement to the analytical formulation for brittle fracture. However, by using displacement extrapolation method, all cortices resulted with same value of SIF but not for strain energy release rate.

Title: Preliminary study on the effect of the inclusion of palm oil fuel ash (POFA) in foamed concrete on compressive strength and porosity
Author(s): Wenny Arminda and Hanizam binti Awang
Abstract: Utilization of palm oil fuel ash (POFA) in concrete is increasing in recent years as an effort to mitigate the global warming and environmental damage caused by the high energy consumption due to the production of cement. Many researchers investigated the POFA as an alternative binder to mitigate the cement usage in producing concrete. A foamed concrete mixes have been prepared having a density of 900-1500 kg/m3 with a filler to binder ratio of 1:1.5 and three levels of POFA replacement. A polycarboxylate based super plasticizer was added to the mixes at a dosage of 0.75% by weight of the binder. The compressive strength and porosity have been investigated for preliminary study. The results reveal that at 28 days, the LFC-PF30 concrete obtained higher compressive strength and porosity of 1.78 MPa and 56% respectively, as compared with the normal foamed concrete (NFC).

Title: Water absorption of styrofoam concrete
Author(s): Andi Prasetiyo Wilowo
Abstract: Styrofoam concrete in this paper is a concrete that made from aggregates that derived from waste pieces of styrofoam as a substitute for coarse aggregate in order to reduce the weight of the concrete. Volume composition ratio of sand and bits of styrofoam as the fine aggregate in 60:40. Styrofoam concrete has a weight only 1510.86 kg / m3 and can be used as a building wall material. Styrofoam concrete also possesses a waterproof ability, because the water absorption capacity is only 11.97%.

Title: Coupling thermal mass and water systems as urban passive design in hot climates
Author(s): Puter Shireen Jhan Kassim, Nurul Syala Abdul Latip and Mustaffa Kamel Bashar Mohd. Fauzi
Abstract: The impact of water in buildings is studied as a combination of vertical walls and horizontal pools that creates a...
combined passive cooling system for public spaces in hot climates. The paper draws from traditional water-based systems principles and forms in Mughal architecture, with the aim of studying its thermal cooling impact using CFD. Due to rapid urbanization in cities, there is a heightened demand for cool, dry comfort yet energy use can be saved by focusing on the cooling of workplace spaces while public areas are naturally cooled to reduce the carbon lock-in effects of cities. Selected sections of 16th and 17th century Mughal complexes are analysed in terms of their combination of both thermal mass (thick, high density walls), water pools, water walls and channels. The study initially looks at water to ground ratios of different Mughal gardens and enclosed courtyards, the overall integration of pools, channels, and water walls in past forms. More importantly, it analyses the impact of the coupling of thermal mass and water elements in a passive system within an infrastructure to achieve almost zero reliance of non-renewable energy for its public areas.

Title: Design enhancement of an oscillating water column for harnessing of wave energy
Author(s): Sadam Shareen Abbasi, Teh Hee Min, Siti Hibahah Shafai, Sea Yi Theng and Lim Chai Heng
Abstract: Renewable energy resources are in increased demand due to environmental and economic problems associated with the conventional energy resources like fossil fuels. In the past few decades, different ideas, designs and devices have been put forward to extract energy from sea waves. Oscillating water column (OWC) technology is one of these new tools being adopted for wave energy extraction. An OWC device converts wave energy into electricity using high speed air flow caused by fluctuations in water level induced by incoming sea waves. This paper briefly describes two main components of an OWC i.e. air chamber and power take off system. The air chamber, being the major component in energy conversion process, holds significant importance in research studies. Geometric components of an OWC chamber affecting the efficiency of an OWC are also discussed. Although studies have been done on improvement of air chamber designs; however, very few researchers have explored OWC applications under mild sea waves. This paper also addresses development of an OWC with a modified design with reference to the guidelines stipulated by previous researchers. It is anticipated that the proposed OWC model will have better energy extraction performance in the low wave energy climates.

Title: Effect of vortex induced vibration on fatigue damage of top-tensioned riser subjected to current load
Author(s): Ke Xin Lai, Do Kyun Kim and Eileen Wee Chin Wong
Abstract: Over the last decade, offshore deepwater developments in the oil and gas industry have outrun the onshore and shallow water field developments. Researches, designs, and developments have been focusing on the deepwater environment in recent years. Safe and robust design of structures and systems for offshore deepwater development is relatively complicated due to the impact of high current and wave. Top tension riser (TTR), which is capable to adapt to the superior motions of the vessel, has been a reasonable and advisable option in deepwater field for transporting hydrocarbon from seabed to the platform. Hence, investigation on the effect of current on the fatigue performance of TTR in associated with vortex-induced vibration (VIV) is relatively important, considering VIV as one of the most important factors causing fatigue damage in deepwater TTR. In this study, the effect of uniform and sheared current on the VIV fatigue damage of TTR is studied. It is observed that the VIV fatigue damage increases with increasing current velocity. Besides, parameters such as water depth, riser diameter, and riser wall thickness are varied to investigate the sensitivity of the parameters in the VIV fatigue damage of TTR. The results indicated that VIV fatigue damage increases as the wall thickness increases in the bare riser; whereas the VIV fatigue damage for strake riser shows improvements. Further studies and continuous validation and improvement shall be done to increase the accuracy and precision of this study.

Title: Quasi static axial crushing of kenaf fibre reinforced epoxy composite fabricated by VARTM method
Author(s): Md. Radzel Said, Sajid T. W. Lau and Mohd. Yuhazi Yaakob
Abstract: Fibre reinforced plastic (FRP) composites have been increasing put into daily life application such as in transportation and sport industries due to its lightweight and good mechanical properties. However, less work has been done on using natural fibre reinforced plastic composites as energy absorbing device. Therefore in the current study, it is aimed to investigate the potential application of kenaf fibre reinforced epoxy (KFRE) composite as energy absorber. In the study, two types of KFRE have been used namely random orientated KFRE (R-KFRE) and unidirectional orientated KFRE (U-KFRE). These composites have been fabricated into square hollow section (SHS) by using vacuum assisted resin transfer molding (VARTM). For the test, R-KFRE and U-KFRE were compared with neat epoxy (NE) SHS by mean of quasi static axial crushing at speed of 2mm/min. From the test, U-KFRE exhibited the best result which has the highest energy absorbed at 1453.77J. Moreover, it crushed progressively compared to the other two which failed catastrophically.

Title: Investigation on the effect of drive train system for Archimedes screw turbine
Author(s): A. Nurul Suryaya, J. Ummu Kultum and N. M. Muhammad Ammar
Abstract: Nowadays, the Archimedes screw turbine has become one of alternative in generating electricity. It is low in terms of cost and sourceful as the Earth is covered more than 70% of water. The objective of this study is to investigate the effect of the drive train system that may influence, power generated from the Archimedes screw turbine. This paper focused on studying the relationship between drive train system and rotational speed. An experiment was conducted with two different types of drive train system to compare the rotational speed of the turbine at the same flow rate range from 0.012 m³/s to 0.016 m³/s (diameter of driver Pulley A is 102mm and diameter of driver Pulley B is 150mm). By increasing the diameter of the driver pulley up to 150mm, the maximum power generated of 0.444 Watts at low rotational per minutes (RPM) of 70. In conclusion, increase the diameter of driver pulley requires low RPM to produce maximum power output.
Title: Effect of n-butanol addition on soot formation of n-heptane in a micro flow reactor with a controlled temperature profile
Author(s): Mohd. Hafidzul Bin Mohd. Hanafi, Hisashi Nakamura, Takuya Tezuka and Kaoru Maruta
Abstract: The effect of n-butanol addition on the sooting limit of n-heptane was studied by using a micro flow reactor with a controlled temperature profile. Pure n-heptane and n-butanol + n-heptane (10:90) were employed in this study. The experiments were conducted for various equivalence ratios, \( \eta = 1.5 \) to 3.5, and the jet mean velocity was 0.0 \( \times \) 10 cm/s. Maximum wall temperature was 1300 K under atmospheric pressure condition. The results showed three types of flame and soot responses: flame, flame with soot and only soot. In addition, the experimental results showed that the presence of n-butanol extended the sooting limit. Pure n-heptane started sooting at \( \eta = 1.9 \) for 10% additional n-butanol, whereas for 10% additional n-butanol, it started at \( \eta = 1.9 \). As the equivalence ratio increases, experimental results showed more soot moving to lower temperatures. Computational results also showed Pyrene, A4 mole fraction increased as the equivalence ratio increases. Furthermore, soot was formed in a range of \( \eta = 1200 \) K to 1300 K. At higher equivalence ratios (3 and 3.5), experiments showed similar starting point of soot at lower temperature for pure n-heptane and blended fuel with 10% mole percentage addition of n-butanol. Computational A4 mole fraction was slightly decreased when 10% of n-butanol was introduced to the n-heptane. In computational results, a large difference in A4 mole fraction was shown between higher equivalence ratio (3.0 and 3.5) and lower equivalence ratio (1.5 to 2.0). Further study on chemical reactions focusing on A4 reaction is necessary in order to accurately describe the tendency of soot formation.

Title: The axial crushing of circular tube under quasi-static loading
Author(s): Minah Mohammed Fareed, Omar Abdulhassan Lafta and Md. Radzi Said
Abstract: This paper presents the effect of round hole on the peak load and energy absorption of circular tube structure. Circular tube made of mild steel was used to observe modes of deformation and load-displacement characteristics during the experiment. Axial crushing tests were carried out on the tubes under quasi-static loading condition. The load-displacement characteristics of tested curves are presented. Experimental results of round hole with 10mm diameter at the middle of samples showed 10.45% decrease of peak load than without hole. Energy absorption experimentally slightly decreased than without hole. It has been found the diameter of round hole has a considerable effect of the collapsed characteristics of tubes. Comparison of theoretical and experimental of crushing behavior of circular tube under axial quasi-static loading is presented.

Title: Application of water as pressure medium in hydraulic hybrid system
Author(s): Saliful Akmal Saburuddin, Ahmad Anas Yusof, Mohd. Noor Anril Saadun and Rozaimi Ghazali
Abstract: Typical hydraulic hybrid system vehicles depend on oil as a base fluid. Therefore, natural concerns of environment and safety promote the use of water-based hydraulic hybrid system. The main focus of this paper is to simulate the potential of water hydraulic technology in hydraulic hybrid system vehicles. This research will include extensive study on the mathematical modeling and simulation by using MatLab/Simulink to determine the value of torque, power and efficiency of hydraulic hybrid system and diesel engines. The simulation result indicates that the resulted value of torque and efficiency verify the good combination of water-based hydraulic hybrid system in assisting diesel engine. Therefore, this novel water-based hydraulic hybrid system will reduce the usage of diesel fuel that eventually create a new green technology.

Title: The experimental study of waste kinetic energy recovery system (WKERS)
Author(s): J. B. Goh, Z. Jamaludin, F. A. Jafar, N. Ali Mokhtar and M. Mat Ali
Abstract: This project is intended to convert waste kinetic energy into electrical energy from the source of wind energy discharged from a cooling tower. The design of the blade of the vertical axis wind turbine (VAWT) is inspired by the pectoral fin of the Humpback whale (Megaptera novaeangliae) with its tubercles. After the process of flow simulation of the whale-inspired blade with the geometry of Aerofoil BACXXX-I, a prototype is fabricated by 3D printing for further evaluation process. The experiment is illustrated using a floor fan which produces an average wind speed of 4.37 m/s, which is compatible with the wind speed produced by a small size cooling tower. According to the pitch angle setting from 0° to 90° for every interval of 5°, the best angle of attack is selected based on the highest rotational speed of the wind turbine produced by the wind, eventually coming to an end where the highest output power generated by the generator is considered.

Title: Handgrip pressure study on Perodua car's steering wheel among male drivers
Author(s): Mohd, Faz' W., Ahmad Aiman C. Z. and Seri Rahayu K.
Abstract: High gripping pressure on steering wheel can cause discomfort to a driver while driving a car for a long period of time. The purpose of this project is to study the differences of handgrip pressure on steering wheels for two types of Malaysian national cars while identifying factors that can affect the handgrip pressure. The experiment was done on a standard Perodua Myvi and Perodua Alza. A group of five male drivers, were gathered as respondents. They were required to drive on a selected highway route in Malaysia for a specific time period. The force measurement responses were taken and evaluated by using the Tekscan tactile grip and pressure measurement (Grip System) device. The study surprisingly founds that the average handgrip pressure for Perodua Alza's driving wheel is lower than the average handgrip pressure for Perodua Myvis' steering wheel. For both vehicles, most of the right hand average pressure is higher than left hand average pressure. Three factors that affect the results were the road surface condition, curve road, and the traffic environment. The results can be used as a guideline for future studies, that primarily in solving the driving fatigue problem among the Malaysian’s drivers.
Title: A dual-polarization reconfigurable antenna with beam switching characteristics for band applications

Authors: M. Ajay Babu, B. T. P. Madhav, B. Mohan Reddy, R. Divya Chaitanya, T. Satish and T. Anilkumar

Abstract: A simple polarization and beam switching reconfigurable antenna is presented in this paper. The circular patch with annular slot is used as the radiating element. The circular metallic conductor positioned below the substrate with the air dielectric acts as the ground plane for the antenna. The proposed antenna is intended to operate at 2.4 GHz band with switchable polarization capability. Four PIN diodes have been placed diagonally covering the corresponding switch ability and moreover the proposed antenna provides the beam switching characteristics. The proposed circularly polarized reconfigurable antenna is designed and simulated in ANSYS Electronics Desktop HFSS package and studied several parameters such as return loss, gain, axial ratio, current distributions etc.

Full Text

Title: Audio signals processing with digital filters implementation using MyDSP

Authors: Ruthber Rodríguez Serrezuela, Adrián Fernando Chávarro Chavarro, Miguel Ángel Tovar Cardozo, Adriana Gisela Rey Caicedo and Carlos Arturo Cabrera

Abstract: In this document, a software application for Digital Signal Processing is implemented with a MyDAQ device; in the designed application, audio signals from MP3 files are used as input data. A Labview based software tool GUI is developed for this purpose to visualize frequency spectrum response. Two specific filters as the Finite Impulse Response (FIR) or (IIR) Infinite Impulse Response were implemented and compared. The procedure and simulation are designed in Matlab to understand the process carried out by the Digital Signal Processor (MyDSP) from National Instruments as a study case in educational activities.

Full Text