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High performance IIR filter design with MOD-GDI based array multiplier

Ramya Katnam, Bujjibabu Penumutchi

Dept. of ECE AEC, Surampalem, AP, India

Received 2 January 2021, Accepted 17 January 2021, Available online 19 February 2021.

https://doi.org/10.1016/j.matpr.2021.01.476

Abstract

Due to an upsurge in technology, there is a need for development resemblance in portable devices besides its high speed and low power capability. The most critical factors are area, total power dissipation, and propagation delay to estimate a device's performance. Signal processing modules viz. Finite Impulse Response (FIR) or Infinite Impulse Response (IIR) filters are fundamental elementary logics in DSP systems. Performance optimization of a digital IIR filter is always trendy for VLSI DESIGN Engineers. We can also achieve by improving sub-modules' efficiency (like. adder, multiplier, and delay elements) required to realize the filter architecture. This paper aims to extract a layout of the IIR filter implemented using a high-speed 4-bit Array Multiplier. The multiplier for this IIR designed with Modified Gate Diffusion Input (MOD-GDI) technique reduces the additional circuitry, which reduces the area and average power dissipation of overall filter logic. Extracted the layout by using Mentor Graphics EDA tools (with 130 nm technology). Compared to the performance characteristics like area, delay, the power consumption of the proposed and conventional IIR filters. The proposed IIR filter is space-efficient and consumes less power than the traditional IIR filters.

Keywords

GDI; Mod-GDI; Array multiplier; IIR filter

Keywords

Power dissipation; Performance estimation; Scaling factors; Sub-system; Mentor Graphics EDA tool; FET dimensions

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Materials Today: Proceedings
Available online 19 February 2021
In Press, Corrected Proof ⓘ

A comparative study on machine learning based heart disease prediction

A. Kondababu, V. Siddhartha, BHK. Bhagath Kumar, Bujjibabu Penumutchi ✉

Dept. of ECE AEC(A), Surampalem, AP, India

Received 2 January 2021, Accepted 17 January 2021, Available online 19 February 2021.

https://doi.org/10.1016/j.matpr.2021.01.475

Abstract

Over the last few decades, the population worldwide is suffering from heart disease, which is considered one of the most significant fatalities. About 17.7 million people die on average every year because of heart disease, the World Health Organization (WHO). There will be many difficulties in the prognosis of heart disease due to various risk factors like diabetes, high blood pressure, high cholesterol, abnormal pulse rate, and many other factors. The main goal is to save humans' lives by detecting abnormalities in heart conditions, which would be achieved by identifying and processing raw data collected based on heart information. The healthcare industry has found that Machine Learning (ML) is a useful and accurate decision-making technique in the data collection produced in large quantities. The medical decision support systems developed were effective based on the software and the different algorithms proposed by many researchers. Here a study is done based on the various techniques using the different algorithms and their performance analysis. The predicting model was introduced with several combined features, and among the multiple methods and were other classification techniques. Many existing ways discussed, among which the accuracy level was found as 88.7% using the Hybrid Random Forest with a Linear Model (HRFLM) technique.

Keywords

Machine learning; Heart disease; Random forest; Support vector machines; Decision trees

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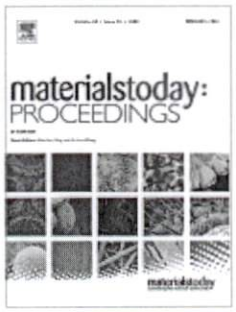

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Parametric analysis of schematic for efficient sub-system design with MOSFET's scaling factors

P. Bujjibabu [a] ✉, K. Babulu [b], M. Kamaraju [c]

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Abstract

Integrated Circuits (IC) focus on low power devices, as per the demand in industries. In VLSI circuits, for modern applications, power dissipation is an essential constraint as it plays a crucial role in the system's overall performance estimation. Many techniques, like power gating or clock gating, can be used to reduce unnecessary power consumption. Non-working parts would be switched off during the non-functional period. IC designers are still facing the problem of choosing the best logic among different styles for the set of user-defined constraints. It is easy to select the optimal, with the prior availability of metrics, to make the design efficient. In this paper, the analysis was done on Mentor Graphics EDA Tool with 130nm technology to predict the characterization of given logic with multiple scaling factors and tested through distinct voltages by continuously changing MOSFET dimensions. The clocked CMOS is like CMOS in some conditions at the cost of power dissipation (196.49uW in CCMOS and 100.24nW in CMOS). Pseudo nMOS is suffering from delay variations (with 117.97pS to 503.74 pS) by changing MOS size and input voltage in their characteristics, unlike CMOS logic. It is to notice that the CMOS and clocked CMOS logics are ideal in maintaining constant delays in response to change in FET dimensions or supply voltages. Similarly, pseudo-NMOS logic, otherwise, is a delightful choice to use (with an average power maximum of 108.54 nW) when a constant power dissipation is mandatory from the system even, it's far operated in vibrant conditions. Identified efficient schematic which is either essential to arrive the most effective sub-system, which in turn increases the overall system performance.

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PAPER • OPEN ACCESS

Determination of physico-chemical parameters of coal mines water samples and their correlation establishment with WQI using python programming

Satyajeet Parida[1], Abhishek Kumar Tripathi[1], D.P. Tripathy[2] and Purabi Bora[3]

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Abstract

The quality assessment of water is the need of the hour as water pollution has reached to an alarming level. The pollution of natural water bodies due to mine drainage system and mining activities is a major environmental concern worldwide. There are many potential reasons of water

2- Port MIMO Antenna Design for 5G Communications

Publisher: IEEE Cite This PDF

M. D. Nandanay ; S. B. G. Tilak Babu ; Sanjeev Kumar All Authors

Abstract: Two-port multi-input multi-output (MIMO) antenna for a 5G application is presented in this paper. The presented made of 2 monopole elements with an overall size of 11 x 4... **View more**

Metadata

Abstract:

Two-port multi-input multi-output (MIMO) antenna for a 5G application is presented in this paper. The presented made of 2 monopole elements with an overall size of 11 x 4.5 mm ^{2} . To reduce the effect of one antenna element to another element, an optimized study has been considered. To reduce isolation between the ports of the designed MIMO, a stub has been put into the ground plane. The presented MIMO for 5G wireless application has been carried out using HFSS software. The S 11 value of deigned MIMO antenna obtained at 26 GHz resonance frequency and bandwidth of 4.3 GHz (from 24.0 GHz to 28.3 GHz) and isolation is below -27 dB. The MIMO performance of the presented MIMO antenna gives good results such as impedance bandwidth, radiation pattern, isolation, and gain. The presented MIMO antenna shows a high-quality applicant for 5G mm-wave application.

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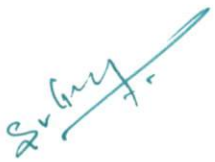

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Contents

I. Introduction

These days 5G technologies are being used in many realworld applications for example: use in Internet of Things (IoT), artificial intelligence (AI), and cloud computing applications. The development of 5G technology began in the last few years and has been implemented in 2019. Studies show that there would be rapid growth in existing technologies and the invention of new technologies. For better utilization, the change should be done by increasing bandwidth, reducing the clogging of the signals, and increasing the capacity of the channel. The present technology is not having all these flexible requirements. So the Engineers and the Researchers came forward to develop the technology and remodeled it and named it 5G technology. This 5G technology became one of the most trending technologies in the field of Antennas. Because of very few limited requirements the Scientists and Researchers are concentrating on the millimeter-wave spectrum. The frequency band of the millimeter-wave spectrum is about 29 GHz. This spectrum made the world concentrate more on it because of its efficiency [1]–[4]. This trending 5G technology is not only for implementing the basic requirements and also to implement the technologies that are coming up into existence. Especially this 5G technology is mainly used to implement the MIMO applications. This wireless MIMO will improve the transmission rate and also improves the communication quality to be constant. This MIMO technology consists of several antennas in the path of wireless communication. So this feature of MIMO increases the strength of the communication system. Nowadays, the best technology is based on the utilization of fewer components. But, this technology needs more number antennas to have consisted in a specific place [5]–[6]. The MIMO should have high separation in the middle of the antennas which in turn requires the high gap between the antennas. The most important task for the researchers is to check the balance between miniaturization and high isolation. The design of the antenna should be aware of millimeter-wave which depends on 5G technology. Many countries are trying to acquire this technology. For other purposes and they are having separate bands in GHz. To obtain this technology, different types of studies have been taking place for antenna designing. The designing of an antenna with a low gain is not accepted, due to which the 5G waves are highly propagated and the losses in the atmosphere are less. So the information that passes through the signal becomes weak when traveling from transmitter to receiver. So to overcome this drawback one must read the depth of antenna arrays with high gain and beam-steering array capabilities. This should be done to improve the strength of the signal [7]–[8]. Furthermore, for

Study of Soft-Starter based Induction Generator for Wind Energy Conversion System

Publisher: IEEE

Koneti Varalakshmi ; B V V L Kala Bharathi ; Tata Himaja All Authors

Abstract: This paper provides study of the working of a soft-starter based induction generator which is used in wind energy conversion system. Different configuration of soft start... **View more**

▸ **Metadata**

Abstract:

This paper provides study of the working of a soft-starter based induction generator which is used in wind energy conversion system. Different configuration of soft starter for 3-phase induction motor has been discussed in this work. Control mechanism of phase control of anti-parallel SCR has been discussed in this paper.

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Figures

References

Keywords

Metrics

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Highly Isolated Fork-Shaped MIMO Antenna for 5G Application

Publisher: IEEE

Penkey Amrutha ; K. L. V. Prasad ; Sanjeev Kumar All Authors

Abstract: This document presented high-isolation with small size ultra-wideband (UWB) "multiple-input multiple-output (MIMO) antenna" without using any extra decoupling network for... **View more**

▸ **Metadata**

Abstract:

This document presented high-isolation with small size ultra-wideband (UWB) "multiple-input multiple-output (MIMO) antenna" without using any extra decoupling network for millimeter-wave (mm-wave) 5G purposes. The presented MIMO geometry was made of two fork-shaped antenna elements and a microstrip feed-line use. The elements are placed perpendicularly and due to this, better isolation among the antenna's component was attained without using any extra decoupling architecture. Thus, isolation between ports is obtained below -22 dB in the entire functional frequency. The overall dimension of the presented UWB MIMO antenna is 11 x 7.5 x 0.762 mm3 and the frequency band is covered from 34.0 GHz to 52.0 GHz. The quality of the designed MIMO antenna demonstrates the viability of solution for a 5G millimeter-wave application.

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Contents

In the present era of high data rates, when we need to transmit and receive enormous volumes of high-definition films and heavy traffic, the demand for high data rates is always rising. It's not possible to satisfy the requirements for high absolute bandwidth at a frequency below 6 GHz due to the sub-6 GHz microwave frequency spectrum. So, to fulfill the high data rate need 5G technology. As 5G doesn't have much in the way of unused spectrum, 30–300 GHz is recommended as a frequency range that could offer large absolute bandwidth [1]–[2]. According to the current data, the amount of data traffic will be expanded at a speed of 50% each year per user, and it trend only continue in the coming days through the widespread usage of IoT and gadget-to-gadget communication. extend and facilitate There is no question that mm-Wave is a key element of the next generation (5G) communication and speed will achieve in term of Gbps. 5G cellular communication is planned for the use of mm-Wave concerning 5G, transmission models and propagation models research on mm-Wave communication is now being done in [3]–[5].

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Textile UWB MIMO Antenna for Wireless Applications

Publisher: IEEE

Mangam Surya Jyothi ; K. L. V. Prasad ; Sanjeev Kumar All Authors

Abstract: An ultra-wideband (UWB) compact size with high isolation two-port "multiple-input multiple-output (MIMO) antenna" is proposed. The presented MIMO geometry is made of two ... **View more**

Metadata

Abstract:
An ultra-wideband (UWB) compact size with high isolation two-port "multiple-input multiple-output (MIMO) antenna" is proposed. The presented MIMO geometry is made of two monopole antenna elements and a microstrip feed-line use. The elements are placed perpendicularly and due to this, isolation between antenna ports is attained without using any extra decoupling architecture. Thus, the minimum isolation between ports is 25 dB obtained in the entire operating frequency. The size of the presented antenna is 58 x 25 x 1 mm ^{3} and the frequency band (S 11 < -10 dB) is covered from 3.4 GHz to 11.5 GHz (8.1 GHz) and fractional bandwidth is 108.72%. The result of the presented UWB textile MIMO antenna shows that option for C-band applications.

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Contents

Wearable gadgets have been increasingly popular in recent years especially in the following fields: (i) Health monitoring (ii) Rescue operation (iii) physical training and (iv) emergency in disaster. The wearable-based antenna is a critical component for exchanging information between central data centre and on-body sensors. The textile substrate provides the facility to design an antenna for wearable applications, especially when considering the comfort and robustness considerations. There are challenges for designing an antenna based on the textile substrate on and off the body. The first and most obvious problem is dealing with the antenna deformations that occur when the antenna is worn on the body. It is necessary to take steps to guarantee that its performance does not deteriorate negatively. The coupling among antenna and human body is the second concern because it has an effect on the performance of the designed antenna and may have an impact on the health of those who use the antenna. One of the other issues is that textile antennas have a simpler topology than traditional printed circuit board (PCB) technology, which is a result of the larger manufacturing tolerances in contrast to established printed circuit board (PCB) technology [1]–[4].

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A Hybrid Machine Learning Strategy Assisted Diabetic Retinopathy Detection based on Retinal Images

Publisher: IEEE

R. Kiran Kumar ; K. Arunabhaskar All Authors

Abstract: Retinopathy is a serious disease occurred over the retinal area of the eye, in which it is mainly raised based on the Diabetic disease. This kind of retinal disease is na... **View more**

▸ Metadata

Abstract:

Retinopathy is a serious disease occurred over the retinal area of the eye, in which it is mainly raised based on the Diabetic disease. This kind of retinal disease is named as diabetic retinopathy; it may cause the permanent disorder of an eye. This retinopathy disease affects the blood flow ratio of the retinal veins and cause the blindness to the people as well as it is caused by the irregular blood flow over the veins. This kind of diabetic retinopathy disease results from the damage to the retinal back portion, in which it is caused due to the propensity to the retina. An improper maintenance of Blood Sugar level leads to such risk cases and the diabetic retinopathy can easily be identified by some earlier symptoms such as appearance of floaters, decreased visual acuity, redness, yellow, and orange colors and poor color perception. These are all the common symptoms raised on earlier stages of diabetic retinopathy disease, in which it is recoverable but in case of poor consideration regarding such causes leads to permanent blindness. At the low end of the spectrum, the condition can be managed with careful control of one's diabetes. For more difficult cases, surgery or laser resurfacing may be required. In this paper, a digital image processing logic is utilized to process the retinal images and classify the normal and severe states in clear manner with respect to machine learning principles. This paper introduced a new machine learning strategy by means of combining two powerful machine learning algorithms such as Random Forest Classifier and the AdaBoost Classifier, in which it is integrated together to make a hybrid algorithm called Hybrid Retinal Disease Detection Logic (HRDDL). This proposed approach of HRDDL assures the logic of identifying the retinopathy diseases in clear manner with proper classification logics. The digital retinal image dataset downloaded from Kaggle database is utilized to prove the efficiency of the proposed approach and the resultin...

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Contents

The major cause of vision loss in the entire globe is diabetic diseases with retinal disorders named Diabetic Retinopathy. In the beginning stage of diabetic retinopathy has certain symptoms to identify the disease, the symptoms like visibility of floaters, reduced visual acuity, eye redness, poor color perception on yellow and orange colors. These causes need to be immediately considered and provide proper treatment to prevent from

permanent vision loss. An irregular blood flow over the retinal vessels case the drastic risk factors over vision progressiveness and it compress the nerves to make severity further [1]. These mentioned symptoms are not common for all patients but some of the related symptoms can easily be identified on periodical checkups and scans. Once the disease is identified over the earlier stages, it can easily be rectified otherwise it will cause severe injuries on eye and vision [2] [3]. In the retinal disease prediction, a clinical studies show that exposure to natural sunlight has also been effective in treating non seasonal and severe depression [4]. The diabetic retinopathy and nephropathy are often associated with vision loss in diabetes. Changes on the retina, including intra-retinal hemorrhages and intra-retinal anomalies, must be taken into consideration in order to grade DR [5].

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Maximum Power Point Tracking for Photovoltaic Brushless DC Motor Connected Water Pumping System Based on GBDT-BOA Technique

Publisher: IEEE

Bapayya Naidu Kommula ; Venkata Reddy Kota ; Narsa Reddy Tummuru All Authors

Abstract: An efficient tracking of maximum power point (MPP) in PV brushless DC (BLDC) motor fed water pumping system using hybrid approach is presented in this paper. The proposed... **View more**

Metadata

Abstract:
An efficient tracking of maximum power point (MPP) in PV brushless DC (BLDC) motor fed water pumping system using hybrid approach is presented in this paper. The proposed method is a combined implementation of both the Gradient Boost decision tree (GBDT) and Billiards-inspired optimization algorithm (BOA) named as GBDT-BOA technique. The purpose of the proposed method is to monitor the maximal power of the PV brushless DC (BLDC) motor fed water pumping system. Among the various categories of DCDC converters, SEPIC converter is selected with the aim of maximum power taking out from PV as well as smooth starting of motor. GBDT plays to train the input data set, the trained value of the best parameters is optimized by the BOA in which it calculate the duty ratio of the single-ended primary inductor converter (SEPIC) to accomplish MPP. The duty cycle obtained through the proposed GBDT-BOA technique is applied to the SEPIC. SEPIC is connected to voltage source inverter (VSI) that is employed to power the BLDC motor. In the meantime, the proposed method is performed on MATLAB/ Simulink working platform and implementation is being explored with present methods like Perturb and Observation (P & O), Radial basis Function Neural Network (RBFNN). The performance of the system is assessed in terms of voltage, current, power of PV system and SEPIC voltage, current and the BLDC motor speed, torque, current, emf which shows the performance of the proposed system.

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In the modern world, the use of renewable energy sources is growing rapidly due to being free, environmentally friendly; hence the conventional energy sources are declining day by day [1]. In the remote area, the standalone photovoltaic systems are developed for water pumping function [2]. It is used for agricultural and household applications due to the absence of grid [3]. To drive the pumping system, different types of electric motors are used [4]. Moreover, due to the presence of electronic commutators, BLDC motor also possesses an added advantage of low maintenance and low noise production. [5]. Hence, for the PV pumping application DC motors are not frequently used. The low torque load is present which means that single-phase induction motors are used [6]. For the pumping application induction motors are not effective because of the complex control approach [7]. So, simple control design of BLDC motor was established [8]. Compared to AC motors it provides, low power range and which need maintenance-free operation [9].

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Malicious URL Detection using NLP, Machine Learning and FLASK

Publisher: IEEE

A. Lakshmanarao ; M. Raja Babu ; M M Bala Krishna All Authors

Abstract:A URL created to attack with spam or fraud is known as a malicious/phishing URL. Viruses are downloaded into the system if the user clicks such URLs. Malicious URLs can l... **View more**

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Abstract:

A URL created to attack with spam or fraud is known as a malicious/phishing URL. Viruses are downloaded into the system if the user clicks such URLs. Malicious URLs can lead to phishing and spam. With phishing, user credentials, valuable information is compromised. So, it is important to identify safe links and malicious links. Cyber-attacks are attempting with the origin of malicious URLs Phishers are manipulating their cyber attacking techniques rapidly. Machine Learning is a field of study where a system learns from previous experience and reacts to future events. Machine Learning methods are useful for resolving security applications. In this paper, authors proposed machine learning oriented solution for detecting malicious websites. For experiments, a Kaggle dataset with a large number of URLs (above 5, 00000 URLs) is used. We applied three techniques for text feature extraction count vectorizer, hashing vectorizer-IDF vectorizer, and later build a phishing website detection model with four ML classifiers Logistic Regression, K-NN, Decision Tree, Random Forest. The ML model with hash vectorizer and random forest achieved 97.5% accuracy. We also created a web app using Flask for detecting the entered URL is malicious or not.

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Contents

In today's digital world, the risk of malicious URLs is very harmful. Users have no time to think about the URL before clicking on that. The user faces a lot of cybersecurity issues after clicking malicious URLs. A user may receive a malicious URL through email or WhatsApp. A malicious URL is also similar to a legitimate URL. So, it is difficult to identify which is malicious, which is not. Unfortunately, all the URLs use the same structure with 5 component structure, "subdomain", "top_level domain", "2nd-level-domain", "subdirectory". For example, consider a URL https://shop.yourstore.com/hats.For this URL, HTTPS is a scheme, the shop is the subdomain, your store is the second-level domain, com is top-level domain and hats is the subdirectory. If the malicious URL clicked, the consequences are unknown. A virus file may be downloaded to the system or user credentials can be stolen or it can be a backdoor malware.85% of the spam emails received in our mailbox are malicious links [1], [2]. There are several ways to detect malicious URLs. Some of the common techniques are secure email gateway, sandboxing, installing security protection plugins in the browser. But all the techniques had limitations too. In recent years, ML and DL methodologies are widely using for cybersecurity. Machine Learning able to read large volumes of data for analysis. There is a vast number of algorithms available for data analysis. Choosing a right algorithm is a crucial part of applying machine learning to cybersecurity. So, with the invention of machine Learning, cyber experts are having more choices for detecting phishing websites.

Authors

A. Lakshmanarao

Ad Prediction using Click Through Rate and Machine Learning with Reinforcement Learning

Publisher: IEEE

A. Lakshmanarao ; S. Ushanag ; B. Sundara Leela All Authors

Abstract: Predicting the click-through rate (CTR) is an essential problem in enterprise systems such as online advertising. It is a crucial factor of advertisements platforms. It i... **View more**

Metadata

Abstract:
Predicting the click-through rate (CTR) is an essential problem in enterprise systems such as online advertising. It is a crucial factor of advertisements platforms. It is fed into auctions to determine the final ranking of advertising. Machine Learning techniques are often used to tackle challenges involving human-computer interaction. Almost every website on the internet displays advertisements. Companies who want to promote their products use these websites as a method of promotion. The goal is to determine which of the company's several advertisement versions can get the best conversion rate, i.e., the most number of ad clicks. The major issue for firms that rely on ad revenue is ad placement on websites. The placement of the ad has a significant impact on whether or not the ad gets clicked. This kind of challenge lends itself very well to Reinforcement Learning algorithms. In this paper, we applied the machine learning approach for Ad Prediction. We used a dataset from Kaggle and applied two reinforcement learning algorithms Upper Confidence Bound, Thompson Sampling for predicting Ad position based on ad clicks and achieved a good prediction rate. All the implementations are done in python.

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Contents

I. Introduction

Advertising via internet sources has become a significant element in internet browsing. These advertisements are generally paid for searches and are based on a keyword auction idea. The company uses pay-per-click advertising with cost-per-click billing. In the recent digital world, CTR (Click Through Prediction) got lots of attention. Online advertising is a massive sector with a market value of more than $50 billion. Because of focused advertising, internet advertisers are increasing. While major corporations can have capacity to consult personally in coordination to professional advertisers, minor scale organizations outsource their internet advertising to ad networks such as those supplied by Facebook, Google, and others. These ad networks deliver dynamic, rich, and appealing material with links to promote, and they reward their customers based on consumer clicks on those links.To boost their revenue, most e-commerce and search engine businesses are looking for tailored advertising. In general, internet advertising displays may be seen as different parties like media, marketers, and consumers. In the realm of internet advertising, one of the most important issues is how to promote to certain user groups. Inappropriate ads might degrade the user experience. Advertising does not always have the desired impact, and the media may be influenced as well. Text advertising on the internet is generally in the form of text, and marketers can buy media adverts using a cost-per-click (CPC) model. CTR is an indicator of online web users who intend to click advertising when they view advertisements on their websites. It's a ratio of the number of users that clicked on the ad to the number of times it was shown. A higher CTR value is always important when it comes to improving a company's income. Machine Learning is a field of study where predict by learning is famous in recent years. Machine Learning also has success stories in the advertising industry. In the internet serving of ads, machine learning has played a significant role. There has been a lot of studies done with Machine Learning in this area. The issue with displaying the ad in the same location is that after some time, the user will begin to ignore the space since he is accustomed to seeing ads in that location. As a result, he will begin to ignore that specific position in the future. As a result, the number of ad clicks will decrease. The problem with the first approach, which is to place them at random, is that it ignores the

Lens less Cameras for Face Detection and Verification

Publisher: IEEE

R. L. Anushka ; Samudrala Jagadish ; V. Satyanarayana ; Mahesh K Singh All Authors

Abstract: Face detection and verification based on the camera have progressed to such an extent that they may be integrated into several applications. Traditional cameras are shrin... **View more**

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Abstract:
Face detection and verification based on the camera have progressed to such an extent that they may be integrated into several applications. Traditional cameras are shrinking and driven, adopted by innumerable applications like from household to IOT's in drones. Some of these applications inflicted by some limitations like form factor, weight and cost. But they require lens. Flat cams have no lens and these can be fabricated like microchips and thinner than dime. However, lens less detectors cannot at yet give their optics equivalents the same spatial resolution and clarity. With almost acceptable same resolution, speed and much lesser cost these flat cams are available. These are even flexible, foldable, wearable and even disposable and can find myriad applications in security. We suggest the use of certain approaches to detect and verify the lens less cameras nowadays for resolution, noise and artifacts. The images acquired from lens less cameras, which pave the door to their integration into new applications, can be conducted with great exactitude both facial detection and verification.

Published in: 2021 6th International Conference on Signal Processing, Computing and Control (ISPCC)

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Contents

The digital revolution led to the drastic use of cameras in the last few decades. Cameras are the key selling features for recent smart phones (Google Pixel 3, Samsung Note 20, iPhone XS Max) [1]. On an assessment, it is found that more than a billion

camera modules are sold in the year 2017 alone. Shrinking and reduction of costs making them widely spread is the easy adoption. At present cameras are no longer taking photographs instead sensors have been used for face recognition from biometrics to surveillance and security [2].

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Keywords

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Stripe Noise Removal from Remote Sensing Images

Publisher: IEEE Cite This PDF

P.Mohana Satya ; Samudrala Jagadish ; V. Satyanarayana ; Mahesh K Singh All Authors

Abstract: Remote sensing images are in many domains used, including geographic, military, urban planning and environmental surveillance, but they are somewhat limiting their applic... **View more**

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Abstract:
Remote sensing images are in many domains used, including geographic, military, urban planning and environmental surveillance, but they are somewhat limiting their application due of additional stripe noise. Clear images from stripe pictures may be easily predicted in most existing stream noise reduction algorithms without considering the underlying characteristics of strip noise that cause the structure to be destroyed. Thus a new strategy was suggested in this study from the point of view of the image breakdown. The inherent qualities of strip noise and image properties are taken into consideration. The suggested methodology combines regularization, group regulation and television regularization in a framework for picture decomposition, into a (TV). The first two terms are used to execute stripe noise qualities through statistical analyses and regularization of the TV should evaluate the portions of the smooth structures of the stripe-free image. In addition, an effective alternating minimization methodology is proposed to solve the picture decomposition model.

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Contents

I. Introduction

"Remote Sensing Technology" is used to detect and classify objects on earth based on Satellite or aircraft sensor-based technology [1]. Different areas, such as Geography, Military, Economic Monitoring and most disciplines of earth science have been used in recent years with remote sensors such as hydrology, ecology, meteorology, oceanography, etc. However, in real applications due to the "Stripping Effect" which is caused by inconsistent response between different detectors and photon effects. These photos are contaminated with many kinds of sounds such as stripe noise, Gaussian noise, etc [2]. Remote sensing is often characterized as the acquisition of object information without direct physical contact. Examples of remote sensors include our ore, eyes and cameras. Remote sensing is, more particularly, the knowledge of gathering and analyzing EM information using sensors on platforms (balloons, aircraft) or in the space (satellites). Note that the gray-scale image produced using a single band is black and white shown in Figure 1. Remote sensing core points are platform types used for remote sensing, passive and active remote sensing and satellite orbits [3].

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Applications of Statistical Machine Learning Algorithms in Agriculture Management Processes

Publisher: IEEE

Karri Divya Jyothi ; M. S. R. Sekhar ; Sanjeev Kumar All Authors

Abstract: In any country's economic growth, agriculture plays a crucial function. In crops management, machine learning techniques are mainly employed, following the control of far... **View more**

Metadata

Abstract:
In any country's economic growth, agriculture plays a crucial function. In crops management, machine learning techniques are mainly employed, following the control of farming conditions and the management of animals. They are used in agriculture to anticipate crop yield and quality and the production of livestock. As the population increases, the climate changes are frequent and the resources are limited, it becomes a challenge to meet food demands of the people today. Machine learning (ML) is the mechanism for driving this advanced technology. It allows to the machine for learn without being programmed directly. The agricultural machinery enabled by ML and Internet of Things (IoT) is an important part of the future farm revolution. There has been a rigorous discussion on IOT based network technology involving network architecture and layers. In this research paper described a systematic examination of agricultural with ML applications. The focus areas are the prediction of soil factors including organic carbon and moisture content in the prediction of crop yields, diseases and the detection of weeds in crops as well as species.

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Contents

In the global economy, agriculture plays a vital role, through the continued progress of the human population, pressures on the agricultural sector will intensify. Agricultural with perfectionism farming, nowadays sometimes called digital agriculture and it is innovative fields of agriculture science. Which is used intensive data process to promote farm yield while reducing their influence on the environment [1]. Sensors in present farming systems create a ton of information, which is used to make informed decisions, that allow a more accurate and rapid decision-making process, making it possible to have a better grasp on the operational environment (the interplay between crop, soil, and weather) and operations themselves (machine data). With BMTs and high-performance computers, ML has developed new prospects in agricultural operational environments that can disassemble, quantify and recognize data-rigorous procedures [2]. ML can be described as the scientific field, among other definitions, which enables machines to study deprived of being firmly programmed [3]. Annually ML is applicable to increasingly scientific domains such as bioinformatics, biochemistry, medicine, meteorology, economics, robotics, aquaculture, food safety, and climate security [4]. Here describes in this study an exhaustive review of ML's applicability in agriculture. A variety of relevant studies highlighting the key and unique characteristics of popular ML models are provided [5].

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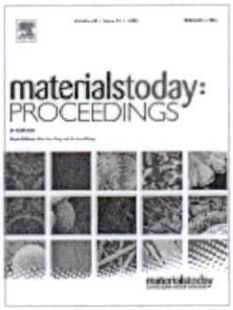

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Materials Today: Proceedings
Volume 47, Part 11, 2021, Pages 3210-3216

Development of a mechanism for seed cum fertilizer drill

Rashesh Vagadia [a], Hardik Kadegiya [a], Prit Desai [a], Anshul Gautam [a], Himanshu Chaudhary [a], N.R.N.V. Gowripathi Rao [b]

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[b] Aditya Engineering College, Surampalem, Andhra Pradesh 533437, India

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https://doi.org/10.1016/j.matpr.2021.06.331

Abstract

The seed metering mechanism is the heart of the seed drill. The seed drill is a machine that places the seeds upto a predetermined desired depth. This ensures that seeds will be distributed evenly. The main aim of the paper is to develop a new seed-metering mechanism. By developing the new mechanism, the goal is to reduce the inefficiency of the current mechanism in terms of seed crushing rate and maintenance time. Also, there was a focus on developing a versatile seed drill to adjust row-row and seed-seed distance which is a major factor related to the net productivity of the crop.

Keywords

Seed drill; Metering mechanism; Screw conveyor

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Materials Today: Proceedings
Volume 47, Part 10, 2021, Pages 2232-2236

Energy management with blockchain technology in DC microgrids

G. Sreeramulu Mahesh [a], G. Dilli babu [a], V.G.T. Rakesh [a], S.B. Mohan [a], P.S. Ranjit [b]

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https://doi.org/10.1016/j.matpr.2021.04.188

Abstract

The energy management is one of the key parameter in the Demand Side Management and is convinced application in an Industry 4.0 platform. To control the peak load demands and to improve the Demand Side Management objectives like power sharing technologies, electricity tariff, scheduling, incentives and policies, the Blockchain Technologies are to be enabled. In addition, the Blockchain Technology also helps to enable the decentralization in terms of energy consumption to various consumers, power estimation requirements and provides greater security in trading the electrical energy. In this paper, the concept of Blockchain Technology for the DC microgrid is defined, also, the power sharing between the energy storage elements and the electrical loads through Bi-Directional converters with Fuzzy Logic Controller are proposed. The proposed system is simulated with MATLAB Simulink software and various waveforms are shown.

Keywords

DC microgrid; Bi-directional converters; Islanded mode; Energy storage elements; Blockchain technology; Demand side management

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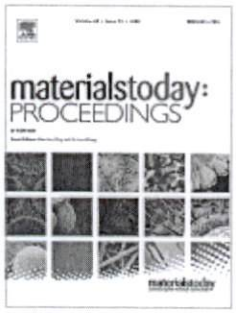

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Materials Today: Proceedings
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Influence of maskless electrochemical micromachining process parameters during microtexturing

S. Kunar [a], G. Kibria [b]

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[b] Department of Mechanical Engineering, Aliah University, Kolkata 700156, India

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Abstract

Maskless electrochemical micromachining (EMM) is a prospective procedure for elevated precision microtexturing. Particularly the microtexturing of substrates without any mechanical influence or heat affect is a substantial characteristic for this process. Moreover, the anodic dissolution performance of job material is only characterized by its electrochemical features. This creates maskless EMM an alternative procedure for electrochemically hard to machine materials. Maskless EMM method with developed vertical cross flow method has been recommended involving microtexturing with higher symmetrical uniformity that are produced on stainless steel (SS304) surface. In this paper, maskless EMM method is a promising cost-efficient substitute for microtexturing containing rectangular micropatterns. The advanced setup has the developed machining cell, flow system and unique electrical connection unit. The machining unit has fixturing arrangements of electrodes, flow system, and electrical connection arrangement. Within the machining unit, the advanced flow scheme is a vertical cross flow system that aids in the fabrication of high-quality microtextured surface. One coated textured tool can produce many rectangular micropatterns with high quality. The effect of process parameters such as electrolyte concentration, machining time, and inter electrode gap (IEG) is evaluated on surface roughness (R_a), length overcut, machining depth and width overcut when fabricating micropatterns is investigated. The best process variables i.e., 50 μm IEG, 6 s machining time and 15 g/l electrolyte concentration manufacture good quality micropatterns.

Keywords

Cited by (6)

Effects of on MnO<inf>2</inf> nanoparticles behavior of a sardine oil methyl ester operated in thermal barrier coated engine

2022, Journal of Thermal Analysis and Calorimetry

A Comprehensive Review of the Properties, Performance, Combustion, and Emissions of the Diesel Engine Fueled with Different Generations of Biodiesel

2022, Processes

Enhancement of Performance and Reduction in Emissions of Hydrogen Supplemented Aleurites Fordii Biodiesel Blend Operated Diesel Engine

2022, International Journal of Vehicle Structures and Systems

Bibliometric Analysis of 100 Top-Cited Articles on Neem Indexed in the Web of Science

2022, Tropical Journal of Natural Product Research

Research Productivity and Mapping on Neem: A Bibliometric Analytical Approach Indexed in Web of Sciences

2022, Tropical Journal of Natural Product Research

Experimental and empirical investigation of a CI engine fuelled with blends of diesel and roselle biodiesel

2021, Scientific Reports

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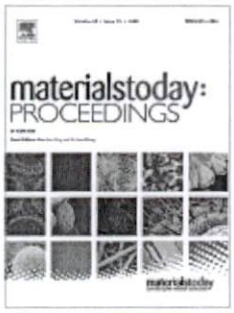

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Volume 47, Part 10, 2021, Pages 2247-2252

Improvement in performance criteria of varactor micropattern by pulsed maskless electrochemical micromachining

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https://doi.org/10.1016/j.matpr.2021.04.197

Abstract

With the progression of many types of micropattern generation using unconventional micromachining techniques has extensive applications in many advanced fields. In this paper, introducing a defined shape of varactor type micropattern generation on stainless steel samples using pulsed maskless electrochemical micromachining (EMM) is more imperative for the application of radio frequency (RF) and microwave communication systems. In this paper, maskless pulsed EMM system is developed for carrying out the investigation during generation of varactor micropatterns. One single masked tool can produce numerous high quality micropatterned workpieces. Pulse current is used to enhance the regularity of machining. Outcomes of EMM process variables i.e., duty ratio and pulsed frequency on machining criteria i.e., material removal rate (MRR), overcut, depth, surface finish and taper kerf angle are investigated during fabrication of varactor micropattern. From the experimental results, the best parametric combination such as 20 kHz frequency and 30% duty ratio can generate the regular varactor micropattern.

Keywords

Maskless EMM; Varactor; Micropattern; Reused coating tool; Machining accuracy; Surface finish; Machining depth

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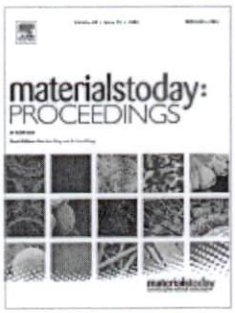

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Materials Today: Proceedings
Volume 47, Part 10, 2021, Pages 2288-2292

Parametric study of surface characteristics of laser micro-channel milling of zirconia (ZrO_2) at defocused condition

Omar Faruk Biswas [a], Abhishek Sen [b], Golam Kibria [a], Sandip Kunar [c]

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Available online 6 May 2021, Version of Record 30 September 2021.

https://doi.org/10.1016/j.matpr.2021.04.222

Abstract

Laser beam micro-channel milling (LBMM) is a recently emerged novel micromachining approach, which can be a useful technique for the machining of hard-to-machine advanced engineering ceramics. LBMM provides better competence compared with remaining non-traditional machining processing regarding the material removal rate, better surface characteristics, and ability to cut different nature of materials disregarding of electrical conductivity and hardness. Moreover, micro-channel with high accuracy and precision can be fabricated by this method. This process on zirconia (ZrO_2) ceramic materials was investigated in this paper using different parametric combinations. The surface roughness (Ra and Rz) was observed using a precision profilometer. Besides, laser milling operation at defocused condition was performed to reduce the surface irregularities of the machined surface. It was seen that the defocusing condition machining of laser beam results in a low value of surface finish (Rz and Ra) compared to results obtained in focused condition machining of the laser. The optical microscopic view of the machined surface also confirmed the better-machined surface at defocused conditions.

Keywords

Micro-milling; Fiber laser; Laser micromachining; Micro-channel; Zirconia

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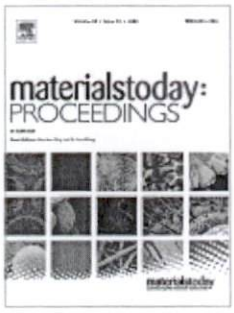

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Materials Today: Proceedings
Volume 47, Part 10, 2021, Pages 2463-2466

Experimental investigation on synthesis of biodiesel from non-edible Neem seed oil: Production optimization and evaluation of fuel properties

S.K. Dash [a], P.V. Elumalai [a], P.S. Ranjit [a], P.K. Das [a], R. Kumar [a], S. Kunar [a], N.H. Papu [b]

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https://doi.org/10.1016/j.matpr.2021.04.551

Abstract

Energy has always been an important part of society development. The traditional method of harnessing energy from fossil resources has proved to be not sustainable and environmentally disastrous. The energy crisis augmented with baffled economy affecting many poor and developing countries. However, with technology the difficulty has been brought to a safe level day by day. Researchers have been keen on developing several sustainable energy resources for meeting the required energy demand by reducing pressure on fossil fuel. This solves two main issues: first, it decreases the environmental pollution as burning of fossil resources leads to the emanation of harmful pollutants to the atmosphere and second, it preserves the fossil resources for future generation. Biofuel is part of such kind of development. In this study, Neem oil is selected for biodiesel preparation. Neem biodiesel is prepared from Neem seed oil using sodium hydroxide as base catalyst. The molar ratio of oil to alcohol, catalyst amount, reaction speed, temperature and time has been optimized and finally, the fuel properties are also evaluated as per ASTM standards. With optimal settings maximum yield found to be 96%. The acid value contained within 0.09 mg KOH/g and cetane number found to be 52, which is more than diesel cetane index.

Keywords

Biofuels; Biodiesel production; Neem oil; Fuel properties; Sustainability

Maskless EMM; Microtexturing; Reused coating tool; Machining accuracy; Surface finish; Machining depth

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Analysis on Photovoltaic Panel Temperature under the Influence of Solar Radiation and Ambient Temperature

Publisher: IEEE

Abhishek Kumar Tripathi ; Shashwati Ray ; Mangalpady Aruna All Authors

Abstract: The generation of electrical energy from solar energy is one of the most promising utilization of solar energy technology and it can be achieved by the application of sol... **View more**

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Abstract:
The generation of electrical energy from solar energy is one of the most promising utilization of solar energy technology and it can be achieved by the application of solar photovoltaic (PV) panel. In this paper an experimental study has been conducted to examine the effect of solar radiation and ambient temperature on the surface temperature of the solar photovoltaic panel. With the help of experimental measurements, a multi-linear regression model is developed relating the three quantities. The developed model validated with the actual measured values shows good accuracy with small values of root mean square error. During the study, the recordedvalue of maximum panel temperature was 78.50°C for the atmospheric condition which having solar radiation of 1140 W/m2 and ambient temperature of 36°C. The developed relation and subsequent outcomes of the study will help the PV panel designers and manufacturers incomprehending the effects of atmospheric parameters on the temperature of the photovoltaic panel.

Published in: 2021 International Conference on Advances in Electrical, Computing, Communication and Sustainable Technologies (ICAECT)

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Contents

I. Introduction

The fulfillment of the demand of electrical energy is the prime need of the modern civilization. But, the continuous growth of population and depletion of fossil fuels makes this task more challenging. Thus, it is important to discover supplementary methods of energy generation which can fulfill the demand of energy consumer. In this manner, solar energy, which is also termed as the renewable energy, could contribute a major share in the generation of electrical energy. The utilization of solar energy is not only promoting the green environment by reducing the use of coal-based electricity method, but also providingthe easy access of electricity in the remote location. The energy from the sun is coming in the form of sunlight can be comprised as light and heat[1]. This sunlight can be converted into useful electrical energy by using a conversion device namely solar photovoltaic (PV) panel. This PV device works on the principle of photovoltaic effect, thus it is called as photovoltaic panel[2]. In general, photovoltaic panels are made up of silicon semiconducting material[3]. As silicon is cheaply available in abundance in the earth crust which makes it the most suitable choice for photovoltaic material. Therefore, the usage of photovoltaic energy conversion becomes more popular in the present energy market. Despite many advantages of solar PV energy conversion, there are also some disadvantages associated with it. As the PV panels are designated to operate in an open atmosphere where it suffers from the variation of external parameters, namely, solar radiation, ambient temperature, dust, humidity, wind speed, shading, bird and ice droppings which is detriment to PV panel's efficiency [4]. These parameters severely affect the operation of PV panel and inordinate amount of any one of these parameters on PV panel can do the physical damages[5].

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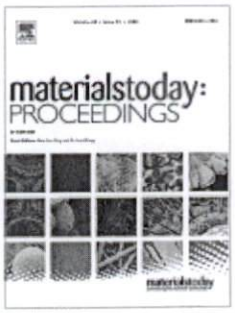

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Materials Today: Proceedings
Volume 47, Part 11, 2021, Pages 3387-3391

Experimental investigation on the proneness of coal samples to spontaneous heating using proximate analysis and crossing point temperature method

Jannela Yernaidu, Abhishek Kumar Tripathi

Department of Mining Engineering, Aditya Engineering College (A), Surampalem, Andhra Pradesh, India

Available online 21 July 2021, Version of Record 7 October 2021.

https://doi.org/10.1016/j.matpr.2021.07.165

Abstract

Auto oxidation or spontaneous heating of coal is one of the major problems in coal mining industries. Many coal mines fires were reported due to auto oxidation. Therefore, a detailed investigation of the coal properties against the proneness to the spontaneous heating is very much necessary. In this paper an experimental investigation on the field collected coal sample was conducted to identify the proneness of these samples towards the spontaneous heating. To perform this study, the five types of coal sample were gathered from the different part of Indian coal mines. The inherent properties of the coal samples namely, moisture content, volatile matter, ash content and fixed carbon were calculated in percentage in the laboratory. Further, the laboratory testing on the coal samples were performed to measure the crossing point temperature which is nothing but the temperature of coal at which the coal temperature equal to the reference sample (bath) temperature. This will help in understanding the susceptibility of coal samples to self-heating. In the experimental analysis the maximum values of proximate analysis of moisture content, volatile matter, ash content and fixed carbon are 21.48%, 43.09%, 26.84% and 44.81% respectively were observed among all five coal samples. Moreover, the maximum and minimum value of crossing point temperature of the field collected samples were correspondingly 179.6 °C and 135.4 °C.

Keywords

Coal; Spontaneous heating; Moisture content; Volatile matter; Fixed carbon; Crossing point temperature

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Performance Analysis of VSI-fed Single-Phase Induction Motor Drive Using Variable and Multi Pulse-Width Modulation Techniques

Publisher: IEEE

Satya Hemanth Appala ; Sai Durga Prasad Pasupuleti ; Jagruthi Vanka ; P.S.D Bhima R... All Authors

Abstract: This paper gives an insight into the operation of single-phase induction motor or asynchronous motor (ASM) using a single-phase Voltage Source Inverter (VSI). The operati... **View more**

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Abstract:

This paper gives an insight into the operation of single-phase induction motor or asynchronous motor (ASM) using a single-phase Voltage Source Inverter (VSI). The operation of VSI is explained in different modes. The variable-multi pulse width modulation (PWM) methods of a single-phase full-bridge inverter are presented comprehensively. The performance of the circuit and the ASM are estimated from the output voltage and current waveforms. The steady-state and dynamic response of the ASM in different PWM methods is also observed. The spectral performance of the modulation methods is also taken into consideration to highlight the merits and demerits of each method. MATLAB/Simulink software has been used to obtain the output results and Fast Fourier Transform (FFT) analysis.

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Contents

Power Electronic technology is finding several applications in industries, the power sector, as well as academia [1]–[4]. Many of the motor drives in chemical industries, power sector, manufacturing industries use the power electronic interface [5]–[8]. With the advent of high power rated power electronic devices like MOSFETs and IGBTs, several types of converters and inverters are begun to develop [9]–[11]. The application of power electronic technology to motor drive applications offers the advantages of a wide range of controllability, the ability to respond for step-changes in load, and lower cost. The asynchronous motor has the advantages of self-excitation, a higher degree of flexibility to respond for speed changes, a highly rugged structure, and robust nature.

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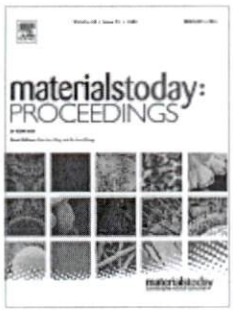

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Materials Today: Proceedings
Volume 47, Part 19, 2021, Pages 6830-6834

Experimental investigation of friction stir welding on aluminium AA6063

V. Hariharan [a], P.V. Elumalai [b], M. Nambiraj [a], J. Jayakar [a], M. Parthasarathy [c], V. Venkata Kamesh [b]

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Received 22 September 2020, Revised 16 March 2021, Accepted 6 May 2021, Available online 22 May 2021, Version of Record 16 October 2021.

https://doi.org/10.1016/j.matpr.2021.05.140

Abstract

Friction Stir Welding, at which relative motion between the specimen and tool generates heat, as a result of which the edges are connected. Because of its excellent properties including very strong resistance to corrosion, weldability, and high fatigue strength, aluminum alloy is used in aerospace applications. Experiments were carried out on Aluminum alloy AA6063 and AA6201 in a Vertical CNC Machine. The performance parameters were calculated and the results indicate a definite relationship with the strength in tension as well as process parameters. For a selection of desired process parameters, friction stir welding process variable database is, therefore, to be created. ANOVA test found the most important process parameter which affects the strength in tension.

Previous Next

Keywords

Friction stir welding; ANOVA test; Strength in tension

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Materials Today: Proceedings
Volume 43, Part 1, 2021, Pages 388-394

A rigidity approach to find distinct mechanisms of a planar kinematic chain

Vinjamuri Venkata Kamesh [a], D.V.S.S.S.V. Prasad [b], P.S. Ranjit [a], Bh. Varaprasad [a], V. Srinivasa Rao [c]

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https://doi.org/10.1016/j.matpr.2020.11.684

Abstract

In the type synthesis of kinematic chains, identification of distinct mechanisms of a kinematic chain is an important step. The links which are having same functional behavior are grouped as same inversion. In the present paper, a novel algorithm based on the Rigidity concept is proposed. Three parameters are defined in the present algorithm namely Primary Connectivity Index (PCI), Secondary Connectivity Index (SCI) and Net Connectivity Index (NCI). The proposed method is tested on various linkages (8, 9, 10) with different Degree of Freedom (DoF) and the results are in correlation with earlier literature. 8-link 1-dof chains findings are presented as an example for the proposed method.

Keywords

Robotic manipulator; Gripper; Distinct mechanism; Rigidity; Degree of Freedom

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An additive approach to find distinct mechanisms of a planar kinematic chain

2021, Materials Today: Proceedings

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Performance analysis of Fuzzy and Neural controller implementation in permanent magnet synchronous motor

Publisher: IEEE

Mula Sreenivasa Reddy ; V.S.R. Subrahmanyam ; Chennam Sai Prakash ; G.V.S. Uma ... All Authors

Abstract: This paper presents the implementation and the performance analysis of intelligent control schemes in permanent magnet controlled Synchronous motor. The PMSM of a drive c... View more

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Abstract:

This paper presents the implementation and the performance analysis of intelligent control schemes in permanent magnet controlled Synchronous motor. The PMSM of a drive can be achieved by the space vectors through a lookup table, and by using the pulse width modulation (PWM) inverters the regulated sine waves are generated. Permanent magnet synchronous motors (PMSM) generally have a non-linear characteristic whose dynamics are changing concerning time. The Intelligent controllers were used to emulate the base of the relative vector upon its classification. The intelligent controllers were implemented to regulate the performance of the PMSM motor drive. Under steady-state conditions, by the implementation of neural and fuzzy controllers the torque ripple factor and harmonics distortion are minimized and the induction machines can be controlled with DTC. Further to improve the torque response and ripples the Neural & fuzzy logic controllers are used in the PMSM motor drive. The above-obtained results by the (DTC) scheme which was applied to the PI (or) PD controller. The proposed network topologies effectiveness has been verified by using simulation tools like MATLAB/SIMULINK/AUTOCAD.

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Contents

1. Introduction

The Permanent magnet synchronous Motor (PMSM) drive can be controlled by a controlling method called the vector-controlled method which is under existence in many industries. The Permanent magnet synchronous motor (PMSM) has various performance characteristics depending upon it's energy and KVA ratings, and it is becoming popular due to its features like high torque, high power, low noise, and high efficiency. However, these PMSM drives will be playing an important role in the industry. These drives need to coordinate transformation, precise system parameters, and inner current loop. On the other side, the Direct torque control (DTC) method offers faster response in evading the torque and the coordinate transformation. Intensivity to variation parameter and reestablishment of the speed as a reference value with respect to the time and following the disturbances is the major criteria considered for the higher performance of the drive used in various appliances like rollers, robotics, grinding mills, wheat flour mills etc. The use of various controllers like PI and PID controllers under these criteria is more, and the energy and KVA ratings of the PMSM motor drive is best suitable for these applications. So, the results obtained from these applications leads to the calculation of certain parameters like reactance and efficiency of the motor drive in working condition and in normal condition. As, the PI and PID controllers are too sensitive, it is very difficult to control the speed and the gain of the motor drive, variations in the parameter readings and the disturbance occurring in the load. Hence a special type of controller for the PMSM drive should be designed to achieve the speed control in higher performance of the drive.
Figure 1:

Improved Execution of the BLDC Motor using 3- Phase Conduction Mode for Electric Vehicle

Publisher: IEEE

B Veera Narayana ; CH Govinda ; V Srinivasa Rao ; Raju P S D Bhima ; J Pavan ; N ... All Authors

Abstract: Electric vehicles are the best answer for green transportation because of their high productivity and zero ozone depleting substance discharges. Different electric motors... **View more**

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Abstract:
Electric vehicles are the best answer for green transportation because of their high productivity and zero ozone depleting substance discharges. Different electric motors have been utilized as the drive arrangement of electric vehicles. Execution of brushed Direct Current (DC) motors, acceptance motors, exchanged hesitance motors, and perpetual magnet Brushless DC (BLDC) motors are contrasted agreeing with the in-wheel motor innovation prerequisites under ordinary and basic conditions through re-enactment. This investigation shows that BLDC motors are the most appropriate electric motor for the superior electric vehicles. Direct torque control strategy is a sort of transition linkage based sensorless control strategies in the Brushless DC motors. In this theory, DTC exchanging procedure of the BLDC motor is talked about. Aftereffects of this examination show compelling torque control, decrease of torque swells and improved execution of the BLDC motor contrasted with the traditional exchanging control procedures.

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Date of Conference: 08-10 April 2021 **INSPEC Accession Number:** 20676782

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Contents

I. Introduction

Sensorless control calculations of the BLDC motor. In BLDC motors, generally three Hall Effect sensors are mounted inside the BLDC motor with 120 electrical degrees stage distinction to recognize perpetual magnet rotor position in the sensor mode control conspire. Killing rotor position identification sensors in the BLDC motor lessens the expense and development intricacy of the motor. Anyway the BLDC motor control calculation will be more confounded by implementing the sensorless control techniques [1]. In the sensorless control mode, rotor position is recognized through yield boundaries of the motor like voltage and current [2]. The primary drawbacks of sensorless procedures are Back-Electro attractive power detecting at low velocities and transient time and intermittent reaction because of high recompense rates. Important exploration works have been distributed on various Digital sign preparing controlled PWM Chopper with C-dump converter is available [3]. For keeping up the steady torque activity of the BLDC motor a double speed and current shut circle control are utilized to keep a consistent voltage to recurrence ratio.

Authors

A Single-Phase Inverter Topology with Seven-Level Output based on T-type Structure

Publisher: IEEE

D. Sai Sudheer ; Sowmya Reddy ; J. Satish Kumar ; Ch. B. Ayyapparaju ; M. Srinivas ... All Authors

Abstract: This paper introduces a novel single-phase seven-level inverter structure that is based on a modified T-type structure. This topology employs a reduced number of devices ... **View more**

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Abstract:
This paper introduces a novel single-phase seven-level inverter structure that is based on a modified T-type structure. This topology employs a reduced number of devices compared to classical multilevel inverter (MLI) topologies. It also uses a single DC source that renders this topology suitable for PV applications. The DC-link capacitors required in this topology have reduced size which in turn reduces the overall cost of the system. The working modes of the circuit and modulation method of the proposed structure are presented comprehensively. Finally, the introduced topology is simulated in the environment of MATLAB/SIMULINK and the obtained output results are presented.

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Keywords

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Phishing website detection using novel machine learning fusion approach

Publisher: IEEE

A. Lakshmanarao ; P.Surya Prabhakara Rao ; M M Bala Krishna All Authors

Abstract: The Phishing is a sort of social designing assault regularly used to take client information, including login accreditations and credit card numbers. With the enhancement... **View more**

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Abstract:

The Phishing is a sort of social designing assault regularly used to take client information, including login accreditations and credit card numbers. With the enhancements in internet technology, websites are the major resource for the cyber-attacks. There are several counter measures available for avoiding phishing attacks, but phishers are changing their attacking methods from time to time. One of the most widely used techniques for solving cybersecurity issues is machine learning. From last several years, Machine Learning and Deep Learning Techniques are suitable for solving security related issues. Machine Learning is most suitable for detecting phishing attacks because most of the phishing attacks have common characteristics. This paper has applied several machine learning techniques for detecting the phishing attacks. Here, two prioritybased algorithms are proposed. Based on the results of these algorithms, the final fusion classifier is decided. We used a dataset from UCI and applied a novel fusion classifier and achieved an accuracy of 97%. We used Python for implementing our experiments.

Published in: 2021 International Conference on Artificial Intelligence and Smart Systems (ICAIS)

Date of Conference: 25-27 March 2021

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Contents

I. Introduction

Social Engineering is the most widely used term today. Every individual facing lots of problems with cyber threats. One of the most widely used attacks in social engineering is phishing. It happens when an attacker behaves like a trusted source and hoodwinks a casualty into opening an email, text, or instant message. Phishing can be done in different ways. For example, a spam email from some university is distributed to many faculty members. The email may ask the user to click on the link. On clicking the link, it opens a duplicate website page. The attacker monitors and hijacks the new password. In a phishing attack, the users are forced to link to illegal websites and revealed their critical information like bank-related information, credit card details, passwords, etc. One of the most widespread solutions for cyber-attacks is using an antivirus or firewall. But unfortunately, antivirus software is unable to fully prevent phishing attacks.

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Figures

References

SMS Spam Detection using Machine Learning and Deep Learning Techniques

Publisher: IEEE

Sridevi Gadde ; A. Lakshmanarao ; S. Satyanarayana All Authors

Abstract: The number of people using mobile devices increasing day by day. SMS (short message service) is a text message service available in smartphones as well as basic phones. S... **View more**

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Abstract:
The number of people using mobile devices increasing day by day. SMS (short message service) is a text message service available in smartphones as well as basic phones. So, the traffic of SMS increased drastically. The spam messages also increased. The spammers try to send spam messages for their financial or business benefits like market growth, lottery ticket information, credit card information, etc. So, spam classification has special attention. In this paper, we applied various machine learning and deep learning techniques for SMS spam detection. we used a dataset from UCI and build a spam detection model. Our experimental results have shown that our LSTM model outperforms previous models in spam detection with an accuracy of 98.5%. We used python for all implementations.

Published in: 2021 7th International Conference on Advanced Computing and Communication Systems (ICACCS)

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Contents

The number of mobile phone (smartphone) users increases from 1 billion to 3.8 billion in five years [1]. The top three countries using more mobiles are China, India, US. Short Message Service or SMS is a text messaging service available for the last several years. SMS service can be availed without internet also. So, SMS service is available in smartphones and basic mobiles also. Although smart phones bring several apps like WhatsApp for text messaging, this service can be availed with the help of the internet only. But SMS can be availed at any time. So, the traffic for SMS service increasing day by day. A spammer is a person/company which is responsible for unsolicited messages. For their organization benefits or personal benefits, spammers sending a vast number of messages to the users. These messages are called spam messages. Although there are various SMS spam filtering techniques available [2], still there is a need to handle this problem with advanced techniques. Mobile users may get annoyed because of spam messages. Spam messages can be two types, SMS spam or email spam. The purpose of email spam or SMS spam is the same. Generally, these spam messages are spent by spammers for the promotion of their utilities or business. Sometimes, the users may also undergo financial loss due to these spam messages. Machine Learning is a technology, where machines learn from previous data and made a prediction on future data. Nowadays, machine learning and deep learning can be applied to solve most of the real-world problems in all sectors like health, security, market analysis, etc. There are various techniques available in machine learning like supervised learning, unsupervised, semi-supervised learning, etc. In supervised learning, the dataset is having output labels, whereas unsupervised learning deals with datasets with no labels. We used a dataset from UCI with labels, So we applied various supervised learning algorithms for SMS spam detection.

A Crystalview on Multi-Focus Image Fusion Methods

Publisher: IEEE

Cite This PDF

K.H.K. PRASAD ; S.B.G. TILAK BABU ; R.V.V. KRISHNA All Authors

Abstract: Multi Focus Image Fusion (MFIF) is used to compensate depth of field problem of cameras in which an amalgamation of the corresponding features from two are more images to... **View more**

▸ **Metadata**

Abstract:
Multi Focus Image Fusion (MFIF) is used to compensate depth of field problem of cameras in which an amalgamation of the corresponding features from two are more images to a single image which gives all significant features of input images. According to the optical lens formula, in the captured image some objects are in focus some are out of focus due to depth of field problem of cameras. In MFIF two or more different images of same scene having diverse focuses are fused to generate all in focus image. The resultant fused image improved in terms of visual perception, efficiency. The applications of MFIF involves several fields like medical diagnostics, military, forensic, multi-focus image integration, pattern recognition, remote sensing, biomedical imaging etc. In this paper we mainly concentrate on various MFIF methods. By reviewing the applications, advantages, challenges and limitations in the fusion methods this review article provides wide range of references for the researchers working in the area of MFIF.

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Image fusion is a method which amalgamates the corresponding features from a sequence of input images of the same scene. The resultant fused output image is more informative, contains better quality features, and as well contains all redundant, complementary information of the input images. Depending up on the consideration of the input images for fusion, different image fusion types exist. In the fusion process we need to consider the different images of the same scene obtained from different sensors, different view positions or different times. The main objective of image fusion process is to reduce redundancy and uncertainty. Image fusion process got more significance due to its benefits such as more spatial and temporal coverage, better reliability and reduction in uncertainty.

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Figures

References

Keywords

Metrics

Heart Disease Prediction using Feature Selection and Ensemble Learning Techniques

Publisher: IEEE

A. Lakshmanarao ; A. Srisaila ; T.Srinivasa Ravi Kiran **All Authors**

Abstract: Cardiovascular diseases (heart-related diseases) are the reason for the deaths of 18 million people every year in the world. According to WHO,31% of the deaths worldwide ... **View more**

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Abstract:

Cardiovascular diseases (heart-related diseases) are the reason for the deaths of 18 million people every year in the world. According to WHO,31% of the deaths worldwide are due to heart-related diseases. In this paper, we proposed a novel machine learning model for heart disease prediction. The proposed method was tested on two different datasets from Kaggle and UCI. We applied sampling techniques to the unbalanced dataset and feature selection techniques are used to find the best features. Later several classifier models were applied and achieved good accuracy with ensemble classifier. The experimentations on two datasets shown that the proposed model is effective for heart disease prediction. Python was used for all implementations.

Published in: 2021 Third International Conference on Intelligent Communication Technologies and Virtual Mobile Networks (ICICV)

Date of Conference: 04-06 February 2021

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Contents

I. Introduction

Cardiovascular diseases are a cluster of diseases caused due to heart problems. Some of these diseases are coronary heart disease (CHD), peripheral arterial disease, congenital heart disease, cerebrovascular disease, etc. People with the peripheral arterial disease are having more chances of heart attack or stroke. The risk with PAD is generally increasing with the age. For some people, the structure of the heart is problematic from birth. Congenital heart disease is a such type of disease. This disease changes blood flow direction and creates heart-related problems. The cerebrovascular disease damages the blood vessels. If the blood supply to the brain is stopped then there may be a chance of brain damage. Improper food habits, continuous use of tobacco, and alcohol [1] are the major reasons for heart-related diseases. The common symptoms of the disease are pain in the left shoulder or elbow, pain in the chest. But, in some cases, there are no symptoms to identify these diseases. Among all the countries, the United States is the main country that is suffering from more deaths due to this disease. Traditional methods for identifying this disease are by analyzing the patient's previous records, but this method always not sufficient for diagnosing the disease.

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Figures

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COVID-19 in India: Lockdown analysis and future predictions using Regression models

Publisher: IEEE

K Prathyusha ; K Helini ; Ch V Raghavendran ; NSL Kumar Kurumeti All Authors

Abstract: The new virus named COVID-19 identified in Wuhan, China causes a severe impact on the respiratory system of the human. In considering its effect and spread in the communi... **View more**

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Abstract:

The new virus named COVID-19 identified in Wuhan, China causes a severe impact on the respiratory system of the human. In considering its effect and spread in the community, the Government of India has imposed World's biggest Lockdown from 25th March 2020. Later on, it was extended in another three phases as Lockdown 2.0, 3.0, and 4.0 with some relaxations in each Lockdown. In this paper, we have studied the COVID-19 patients' data of Confirmed cases, Recovered cases, and Deaths based on before, after, and during lockdowns. The data analysis is done basing on the daily growth rate of confirmed cases, recovery rate, and fatality rate. We have applied Regression techniques viz., Linear Regression, Polynomial Regression of Machine Learning (ML) to predict the future spread of this virus in India. The Polynomial Regression has given accurate predictions comparing with the Linear Regression.

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Contents

SECTION I.
Introduction

The world is facing one of its most horrible crises regarding public health due to COVID-19, which was first identified in China in late December 2019 [1]. Infection of this virus is no longer limited to Wuhan. By January 2020 nine cases of COVID-19 infection have been stated in Thailand, Japan, Korea, USA, Vietnam, and Singapore through air travel is likely [2] [3]. It has spread to almost all parts of the globe with major impacts on health and the economy. The World Health Organization (WHO) has warned that the COVID-19 pandemic is deteriorating worldwide and things won't return to the old normal for some time [4] [5] [6] [7]. An important source for infecting this virus is asymptomatic carriers. Fever, cough, and breathing problems are important symptoms and the infection can be transmitted during the incubation period [8]. The infection rate of COVID-19 looks to be greater than that for the seasonal flu and MERS, with the kind of possible estimates covering the infection rates of SARS and Ebola.

In India, the first COVID-19 case is confirmed on 30th January 2020 in Kerala state. By March 4th, the country has witnessed a sudden jump of 29 cases. The positive cases crossed 100 by March 15th, 2020. The Government has called for a "Janata Curfew" on 22nd March. To face this pandemic, the Government of India has imposed Lockdown for three weeks from 25th March 2020 to 14th April 2020. By the end of March, the number of cases crossed 1000. The Lockdown is further extended in three phases as 2.0, 3.0, and 4.0 with phase by phase relaxations. On 30 May, the Government stated that the current lockdown would be more prolonged till 30 June in containment zones, with amenities restarting in a phased manner, beginning from 8 June,

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Materials Today: Proceedings
Volume 46, Part 20, 2021, Pages 11054-11060

An additive approach to find distinct mechanisms of a planar kinematic chain

Vinjamuri Venkata Kamesh [a] ✉, D.V.S.S.S.V. Prasad [a], P.S. Ranjit [a], Bh. Varaprasad [a], V. Srinivasa Rao [b]

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Received 31 December 2020, Revised 28 January 2021, Accepted 4 February 2021, Available online 1 March 2021, Version of Record 23 September 2021.

https://doi.org/10.1016/j.matpr.2021.02.162

Abstract

In the type synthesis of kinematic chains, identification of distinct mechanisms of a kinematic chain is an important step. The links which are having same functional behavior are grouped as same inversion. In the present paper, an additive approach based on connectivities of the links is proposed. The functional behavior of any link as a part of k-chain can be found by means of topological analysis. In general, adjacency of a link with other links is a primary tool for the topological analysis. In the present paper, the extent of adjacency consideration is the main criteria by which similar functional behavior leading to same inversion is identified. A new parameter 'Additive Adjacency' is defined in the algorithm. A new computation table 'Remote Adjacency Influence Table' (RAIT) is introduced to control the progress of the adjacency calculations. The proposed method is tested on various linkages (8, 9, 10) with different Degree of Freedom (DoF).

Keywords

Adjacency; Kinematic chain; Link; Distinct mechanism; Remote influence

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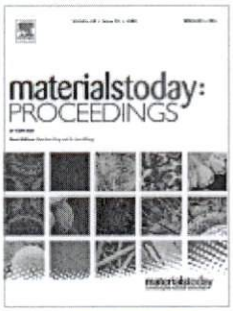

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Materials Today: Proceedings
Volume 46, Part 20, 2021, Pages 11140-11148

Experimental investigations on gaseous hydrogen supplemented Aleurites Fordii biodiesel in a direct injection diesel engine for performance enhancement and reduction in emissions

Ranjit P.S. [a], Swapnil Sureshchandra Bhurat [b], Dash Santosh Kumar [a], Venkata Kamesh Vinjamuri [a], Saravanan A. [a], Varaprasad Bh. [a], Murugan M. [c], Yashvir Singh [d], Sreeramulu Mahesh G. [e]

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https://doi.org/10.1016/j.matpr.2021.02.368

Abstract

The exponential increase in energy demand and the unavailability of fossil fuels and environmental issues accelerated researchers' work on alternative fuels. Aleurites Fordii biodiesel is one such alternative biofuel derived from its biomass can sequestrate the carbon dioxide and emit the oxygen which balances the environment is being considered as pilot fuel supplemented with 5% and 10% high energy gaseous hydrogen in a 4 S, 3.5 kW, constant speed, water-cooled, constant speed engine. Performance, combustion and exhaust out emissions were analysed. All precautionary steps involved in handling the gaseous hydrogen-like NFPA Class I Division 2 Group B standards were considered. 10% gaseous hydrogen supplemented Aleurites Fordii biodiesel shown better performance and reduction in emissions. Further, same results were compared with 90 °C preheated Aleurites Fordii straight vegetable oil, pure Aleurites Fordii biodiesel, 5% hydrogen supplemented Aleurites Fordii biodiesel and conventional petro-diesel operations.

Keywords

Aleurites Fordii; Straight vegetable oil; Biodiesel; Performance; Combustion and emissions

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Enhancement of Performance and Reduction in Emissions of Hydrogen Supplemented Aleurites Fordii Biodiesel Blend Operated Diesel Engine

2022, International Journal of Vehicle Structures and Systems

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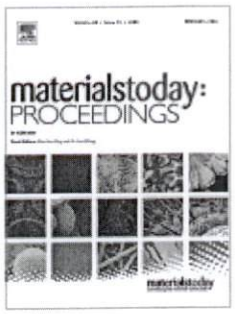

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Materials Today: Proceedings
Volume 46, Part 20, 2021, Pages 10879-10883

A novel approach to find optimum group replacement period

Vinjamuri Venkata Kamesh [a], D.V.S.S.S.V. Prasad [b], P.S. Ranjit [a], Bh Varaprasad [a], V. Srinivasa Rao [c]

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https://doi.org/10.1016/j.matpr.2021.01.894

Abstract

In the replacement of items that fail suddenly, it is always better to compare the replacement policy adopted whether it is with Pure individual replacement or Group replacement after optimum period. In pure individual policy, failed item is replaced immediately by procuring in the local available market spending the amount at market price. As the usage time increases, the rate of failure increases. In that case, the individual replacement cost always increase proportional to usage period. Replacing the total lot of items as a whole or lot is a better option to consider. In group replacement, lot is replacement at a specified period irrespective of the usage period and condition of the item. As the failure rate in the initial days of the usage period, item replacement cost in the individual replacement case as well as group replacement case is more or less in a narrow price region. We need to take a better decision by comparing Average cost in both the cases. In the present paper, a novel approach is proposed to minimize the number of steps to find the average cost using Table method. The proposed algorithm is programmed in EXCEL. The proposed algorithm can be extended for any number of periods of operation.

Keywords

Replacement; Optimum period; Group replacement; Individual replacement; Number of items

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Materials Today: Proceedings
Volume 46, Part 20, 2021, Pages 11149-11154

Use of Schleichera Oleosa biodiesel blends with conventional diesel in a compression ignition engine – A feasibility assessment

P.S. Ranjit [a], Swapnil Sureshchandra Bhurat [b], A. Saravanan [a], M. Murugan [c], Vinjamuri Venkata Kamesh [a], Pramod Kumar [c], Yashvir Singh [d], G. Sreeramulu Mahesh [e]

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https://doi.org/10.1016/j.matpr.2021.02.370

Abstract

Unconditional extraction of fossil fuels on one side and exponential demand with minimum emissions makes the researchers think for alternative fuels. Schleichera Oleosa is one such alternative fuel whose physicochemical properties are at par with conventional diesel and also having more than 40% saturated free fatty acids recommended to make use of its biodiesel blends 10% (SO BD10), 20% (SO BD20) and 30% (SO BD30) with conventional diesel. Moreover, tested these blends in a single cylinder, 4 stoke, 7.35 kW, 1000 rpm constant speed, water cooled, natural aspirated, vertical lister, oil engine for its feasibility. Performance parameters like brake thermal efficiency and brake specific energy consumption and emissions like NOx, Smoke, CO and HC were examined. SO BD30 shown better performance at par with diesel operation when compared to all other blended environments. Performance parameters like: brake thermal efficiency of 28.90%, brake specific energy consumption of 12.45 MJ/kW-hr were recorded, which are near by the conventional diesel operation. With respect to emissions, oxides of Nitrogen of 462 ppm, Smoke with 32 HSU, Carbon Monoxide with 0.32% by volume and unburned Hydrocarbon of 8 ppm were measured. Oxides of Nitrogen was reduced when comparing to conventional diesel operation. Smoke was remain same, whereas carbon monoxide and unburned Hydrocarbons were slightly higher than the conventional petro-diesel operation.

Keywords

Schleichera Oleosa; Biodiesel; Blends; Performance and emissions

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Blending and emission characteristics of biogasoline produced using CaO/SBA-15 catalyst by cracking used cooking oil

2022, Fuel

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Enhancement of Performance and Reduction in Emissions of Hydrogen Supplemented Aleurites Fordii Biodiesel Blend Operated Diesel Engine

2022, International Journal of Vehicle Structures and Systems

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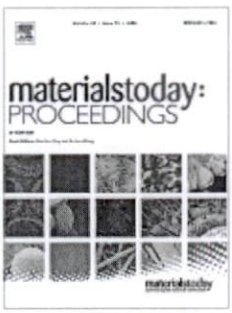

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Materials Today: Proceedings
Volume 46, Part 7, 2021, Pages 2682-2685

Encapsulation of bioactive agent (Curcumin, Moringa) in electrospun nanofibers – Some insights into recent research trends

D. Sundhari [a], N.R. Dhineshbabu [b], S. Sutha [c], M.E. Raja Saravanan [d]

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https://doi.org/10.1016/j.matpr.2021.02.367

Abstract

As the epidemic of coronavirus disease (COVID-19) has spread rapidly, health organizations around the world has made wearing face mask obligatory to prevent the spread of the infections for the wellness of the society. As wearing face masks become a daily routine, the usage of cloth facemasks from textile fabric, is popular among the public. Since antiquity, textiles have been proven to be intertwined with human lives and the integrant of these crucial materials are fibers. Particularly, nanofiber fabrics manufactured by electrospinning have attracted attention, owing to the better filtration efficiency and breathability. In addition, the electrospinning process provide opportunities to fine tuning of the surface functionality through polymer chemistry and an encapsulation of bioactive agents in single step process. This review opens up a new horizon in possible textile applications especially, an active layer of bioactive agent (Curcumin and Moringa) loaded nanofibrous fabrics-based facemasks for day to day life.

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Virgin Coconut Oil as a New Concept for Periodontal Tissue Regeneration via Expressions of TNF- α and TGF- β 1

2022, International Journal of Biomaterials

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2021, Applied Sciences (Switzerland)

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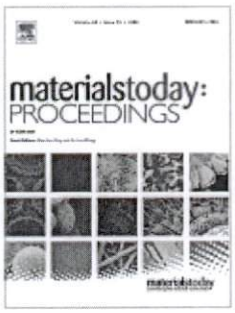

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Materials Today: Proceedings
Volume 51, Part 1, 2022, Pages 961-964

A study of internet of things oriented smart medical systems

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https://doi.org/10.1016/j.matpr.2021.06.363

Abstract

Aging populace ratios are increasing drastically. Health monitoring systems (HMS) based on IoT in smart environments have developed quickly to developed into a feasible substitute to conventional healthcare solution by using IoT. The major objective of HMS is not merely decreasing the expenditure but to also provided e-health service timely to persons. It is feasible when using IoT aspiration to preserve their self-determination. By this way, aged populace be able to avoid, for as extensive as achievable. In any communication by healthcare institution are connecting through internet as example hospitals and nursing homes. It is in turn to reduce the pressure on the health system. To completely realize this revelation of unspoiled IoT based e-health service sustaining the people in requirement of them. Quantities of challenge that require additional examination unmoving survive. At the conclusion, it is provided a summary of the existing condition for smart health monitor system by IoT. Here presented a combined image of the most significant function as well as services obtainable by HMS for the detecting and monitoring human behavior. It is counting its processing techniques, approaches and concepts etc. Furthermore, it is provided a general, in detail study and assessment of the obtainable research conclusion in the field of e-health systems through IoT.

e-Health; Health-care; IoT health monitoring system; Emergency medical services; Sensor networks

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2023, Smart Innovation, Systems and Technologies

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2023, Smart Innovation, Systems and Technologies

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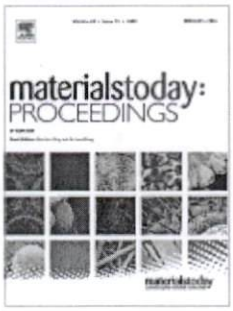

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Materials Today: Proceedings
Volume 51, Part 1, 2022, Pages 850-853

Neuromorphic advancements architecture design and its implementations technique

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Abstract

Neuromorphic Architectures (NA) is hardware network systems which, designed on the principles of neural functions. The network systems are inspired from biological neural networks. Each node or neuron in the artificial Neural networks (ANN) are connected to each other using a synapse. Similar to the biological brains, the connection will be controlled with the amplitude of the connection between nodes, which termed as synaptic weights. Unlike in the conventional architecture, in ANNs consists of huge quantity of extremely organized dealing out elements operational in union to resolve the real world problems. NA is considered as the main soft-computing knowledge and has been widely researched. It is applied during last decades for the computational model. This paper basically focuses on the NA and neural networks and implementation. Neural network and machine learning algorithms are used by data classification in NA. This data will be provided a number of of the modern advancement, including super-computer, and single device implementations, approaches dependent on spiking and non-spiking neuron. Machine learning hardware devices are used to utilization of memristive device.

Keywords

Neuromorphic architectures; ANN; Deep neural networks; Biological synapse; Computational model; Energy efficiency

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A Comparative Study of Different IOT Sensors
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 Selection and peer-review under responsibility of the scientific committee of the 1st International Conference on Computations in Materials and Applied Engineering – 2021.

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Materials Today: Proceedings
Volume 51, Part 1, 2022, Pages 909-913

Vehicle tracking and detection techniques using IoT

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https://doi.org/10.1016/j.matpr.2021.06.283

Abstract

This manuscript focuses on the basic idea of vehicle detection techniques used for its detection. Here discussed the common idea for vehicle detection techniques that are used for different scenario. Traditional and modern methods that are used for vehicle detection method are explained. Statistic method is one of the traditional methods that are used for tracking of vehicles. Blob detection and its analysis is one of the processes in detecting vehicles. You only look once-v3 (YOLO-v3) is a detection method base on the idea of single shot detector (SSD) which is fully optimized and enhanced the exposure capability of small scale target objects. The results show that all the techniques can be used for detection but modern technique based on deep learning is more optimized and accurate. It is very necessary that great attention be paid to image and video recognition be paid to the efficiency of the device. It is difficult to locate and distinguish when flows are high. Using the principle of spatial consolidation, it then updates the network structure to enable real-time detection and statistical flow recalculation.

Keywords

YOLOv3 mode; Traffic flow; Vehicle detection; Intelligent transportation; Feature extraction

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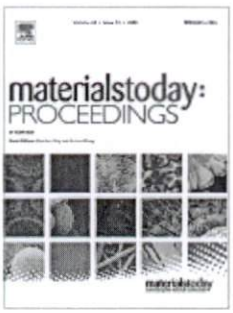

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Materials Today: Proceedings
Volume 51, Part 1, 2022, Pages 924-927

Spliced images detection by using Viola-Jones algorithms method

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https://doi.org/10.1016/j.matpr.2021.06.300

Abstract

Photographs are measured to be a useful document that is used to stored life proceedings. The new progress in the representation of image expurgation software cause image operation. The additional and familiar image splicing, will not disappear with any illustration sign that having it interfered. Consequently, it turns complicated to identify whether the images are genuine or not. There are mostly three types of image forgery, these are image splicing, copy-move, and image retouching. There are dissimilar techniques accessible to ensure the dependability of the image. This manuscript proposed a **Viola-Jones algorithms** technique to detect the splice in images consisting of a human being. The primary stage, detected all the facts presented in the image then it is distorted addicted to dissimilar color spaces. Then it is used illuminant maps of every color space is achieved. Extracted the special feature for example quality of color and a number of the image classes are measured. The SVM classifier is used to detect whether the images are fake or real.

Keywords

Image splicing; Face detection; Image quality measure; SVM classifier; Viola-Jones algorithms

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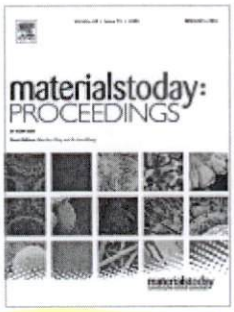

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Materials Today: Proceedings
Volume 51, Part 1, 2022, Pages 1017-1020

Design and analysis simple microstrip low-pass filter for wireless application

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https://doi.org/10.1016/j.matpr.2021.07.075

Abstract

In this article, high-performance compact defective ground technique based microstrip low-pass filter with and without dumble -shaped structure is proposed. By etching of dumble geometry on to ground plane, the presented filter gives a wideband operating frequency and sharp cut at stop band with high attenuation. The presented geometry is designed on software. The simulated outcomes shows that the presented low pass filter has very significant advantages in term of wide band stop band from 2.5 GHz to 6.6 GHz with the S_{21} much better than –35 dB and the presented LPF can meet the requirements of wireless communication systems and microwave applications with its stated efficiency.

Keywords

Low-pass filter; Planar passive filters; Defected ground structure (DGS); Wireless communication

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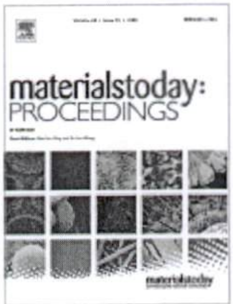

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Materials Today: Proceedings
Volume 51, Part 1, 2022, Pages 914-917

Recognition of plant's leaf infection by image processing approach

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Received 31 May 2021, Revised 13 June 2021, Accepted 19 June 2021, Available online 29 June 2021, Version of Record 7 February 2022.

https://doi.org/10.1016/j.matpr.2021.06.297

Abstract

Disease recognition in plants plays a vital role in agriculture applications. Having diseases in plants is a general fact. The detection of these diseases at the initial stage is very important to avoid loss in quality, quantity, and production in the crop. Manual detection of diseases in plants could not only be a time taking and costly process but also a difficult task in the case of large fields. The main objective of this research paper is to recognize and categorize the infection precisely from the folio descriptions. This step is compulsory in the improvements for training, pre-processing, and identification. The infections are measured by Downey Mildew and Powdery Mildew which can cause heavy loss to grapes fruit. For recognition of illness features of folio such as the main axis, small axis are removed from leaf and specified to classifier for identification. As a result, applied of the image processing method to come across and categorize the disease in the undeveloped application is helpful.

Keywords

Plant disease; Disease diagnosis; Extraction; Image processing; Disease recognition; Segmentation

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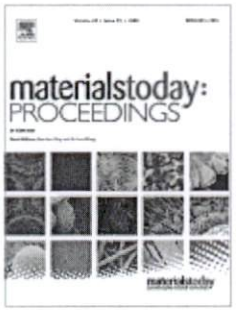

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Materials Today: Proceedings
Volume 49, Part 5, 2022, Pages 1210-1214

Generation of square micropattern using electrochemical micromachining

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Received 5 April 2021, Revised 6 May 2021, Accepted 20 June 2021, Available online 30 June 2021, Version of Record 7 January 2022.

https://doi.org/10.1016/j.matpr.2021.06.290

Abstract

Surface microtexturing accomplishes a substantial role in enhancing the interfacial functional performance of machine-driven components. For producing good-quality square micropatterns, maskless electrochemical micromachining (EMM) is a viable option. Maskless EMM is employed for producing micropatterns, wherein the workpiece remains close by interaction with the mask tightly enclosed to the coated tool surface, and the electrolysis of job involves in the enclosed cell. The special micropatterning setup is developed to produce the good quality square micropatterns including micropatterning cell, pulsed electrical unit and perpendicular cross flow electrolyte system. The developed flow method on the job surface in this unit produces better good quality micropatterns. A reused textured tool and developed flow method is applied in maskless EMM in an enclosed unit, which eradicates the sludges and fabricate micropatterns with higher depth. This unique method is an efficient approach for improving the dimensional accuracy of micropatterns. The influences of input criteria, viz. voltage, duty ratio and frequency are studied on surface roughness, current efficiency, length overcut, and textured depth using this technique. The experimental outcomes show that the best parametric combination, viz. 30% duty ratio, 5 kHz frequency and 8 V voltage, enhances the micropatterned quality. A study has been approached based on micrographs for attaining the best input criteria combination.

Keywords

Maskless EMM; Microtextures; Square micropattern; Reused masked tool; Dimensional accuracy; Depth; Surface roughness

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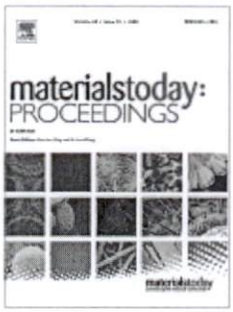

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Materials Today: Proceedings
Volume 51, Part 1, 2022, Pages 1115-1119

Design of Unmanned Aerial Vehicles for various wireless applications

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https://doi.org/10.1016/j.matpr.2021.07.108

Abstract

This paper will incorporate a survey of Unmanned Aerial Vehicle (UAV) and associated problems and present important challenges. Drones have attracted a lot of attention because of their innumerable applications as they are highly movable and provide applications such as service delivery, farming, pollution mitigation, rescue operations. Drones or Unmanned Aerial Vehicles (UAVs) which is one of the components of Unmanned Aerial System (UAS) are equipped with different IoT devices such as sensors, cameras, and actuators. They have a potential market because of their ubiquitous usability. They can be remotely controllable and regulating them in a well organized manner is a challenging task. Different communication technologies can be used such as Wi-Fi, WiMax, and Satellite Communication (SATCOM).

Keywords

UAV; IoT; Wi-Fi; Wi-Max; Drone

Cited by (1)

EEOMA: End-to-end oriented management architecture for 6G-enabled drone communications

2022, Peer-to-Peer Networking and Applications

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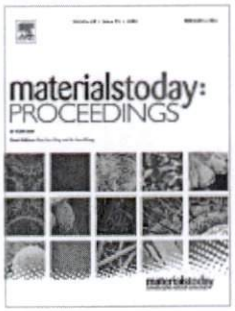

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Materials Today: Proceedings
Volume 51, Part 1, 2022, Pages 156-160

Intensive analysis of intrusion detection methodology over Mobile Adhoc Network using machine learning strategies

M.V. Rajesh ✉

Department of Computer Science, Aditya Engineering College, Surampalem, India

Received 10 April 2021, Revised 28 April 2021, Accepted 5 May 2021, Available online 24 May 2021, Version of Record 7 February 2022.

https://doi.org/10.1016/j.matpr.2021.05.066

Abstract

Mobile Adhoc Network (MANET) recently gained prominence due to the prevalence of handheld connectivity and their flexibility to supportability in specific non-permanent and instantaneous applications like floods and military situations. MANET offers great network utility, but comes with specific security challenges due to the fact that there is no central control, changing network topology, transient existence and uncoordinated communication. There are numerous proposals to use encryption and authentication measures to decrease the risk of security issues, especially as a first-line protection options. Although these risks cannot be removed entirely, an effective intrusion detection scheme is vital to keep unauthorized intrusion out of Mobile Adhoc Network. The role of intrusion identification on Mobile Adhoc Network is extremely difficult due to open medium, complex topology, dispersion, lack of centralized administration, and resource-constrained node groups. There is no direct analogue of a traditional intrusion detection system designed for Mobile AdHoc Networks Technology that can be used on the wireless network. The technology used in it must be flexible enough to accommodate ad hoc changes. This system implements new machine learning architecture that enhances detection to be much more. Intelligent Decision Support incorporates the high accuracy of Enhanced Support Vector Machine (eSVM) with the improved scalability of Rough Set Theory (RST).

Mobile Adhoc Network; MANET; Machine learning; Intrusion detection; Rough set theory; RST; Enhanced support vector machine; eSVM

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Routing of Data Between the Nodes in Mobile Adhoc Networks using Machine Learning Modelling

2022, Proceedings of the International Conference on Electronics and Renewable Systems, ICEARS 2022

Multivariable heuristic approach to intrusion detection in network environments

2021, Entropy

Dr M V Rajesh has 14 years of teaching and research experience. Presently, he is working as Associate Professor in Aditya Engineering College, Surampalem, Andhra Pradesh. He completed his research work in the area of Mobile Computing, especially in the scope of MANETS and obtained Doctorate degree from JNTU Kakinada. He has 10 national and international reputed journals in his credit. Now he is switched for advanced mode of applying machine learning techniques in his earlier work.

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Materials Today: Proceedings
Volume 59, Part 2, 2022, Pages 1388-1393

Mechanicalproperties of 304 stainless steel plates and friction stir welded Al 2219 alloy

Selvakumaran Thunaipragasam [a], Gururaj Hatti [b], R. Dhanaraj [c], R. Giri Prasad [d], P. Satheesh Kumar [e], M. Saravanan [f], S. Rajkumar [g]

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Available online 20 December 2021, Version of Record 19 May 2022.

https://doi.org/10.1016/j.matpr.2021.12.100

Abstract

The study examined the impact of different operating conditions of 2219 aluminium (Al) sheets and 304 stainless steel FSW. Recently, the FSW procedure has been utilised to fastening various materials as it was able for conventional fusion welding techniques to remove local casting errors. The microstructure and mechanical characteristics of the weld nugget depend primarily on several FSW parameters such as rotation of the instrument, feeding speed, offset and pin profile. The current paper examines and discusses the effects of instrument speed, feed rate, offset and the cleaning process for tensile behaviour. As demonstrated by the decrease in velocity from 710 to 500 rpm and the increase in feed rate from 40 to 80 mm/min, the joint was improved. Furthermore, by raising offset to 1.5 mm, the defect in the twisted area was reduced. The use of the ringing method also successfully enhanced the extension and tensile strength by 100% and 9%.

Keywords

FSW; Dissimilar materials joint; Al2219 Alloy; 304 stainless steels; Annealing; Weld nugget

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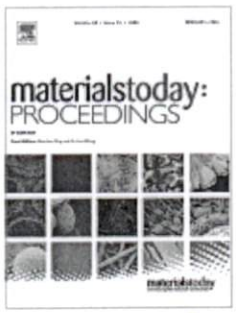

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Sustainable utilization of waste slag aggregates as replacement of coarse aggregates in concrete

Sumit Choudhary [a], P. Ravi Kishore [a], S. Pachaiappan [a]

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Available online 22 November 2021, Version of Record 18 May 2022.

https://doi.org/10.1016/j.matpr.2021.11.103

Abstract

The current study mainly aims on the usage of waste coarse slag aggregates (CSA) to prepare coarse slag aggregate concrete (CSAC). The waste slag aggregates are the by-products mainly obtained from the iron and steel industries. These wastes are mostly disposed off into the landfills and the newer alternative method of disposing are being researched. Also, the increasing rate of construction has resulted into the diminishing of natural raw materials. The present paper focuses on incorporating CSA as the replacement of 20 mm natural coarse aggregates to prepare CSAC for various volumetric replacement of 20%, 40%, 60%, 80% and 100%. Cube and beam samples having different percentages of CSA were casted to undergo the experimental analysis. The fresh, mechanical and durability parameters has been studied by performing workability, density, compressive strength, split tensile strength, ultrasonic pulse velocity, water absorption and water permeability tests, for the in-depth analysis. The outcomes from the experiments has shown decrease in the strength and durability properties for increasing count of CSA. Decrease in compressive and split tensile strength of 39.08% and 37.50% respectively was observed for 100% CSA replacement. In case of durability properties, the penetration depth has increased up to 69.84% for the 100% CA replacement sample. However, a very marginal decrease in the values were observed for the replacement content up to 40%. The study concluded that the utilization of slag aggregate is a sustainable approach by preserving the naturally available raw materials and also construction can be made economical.

Previous Next

Keywords

Coarse slag aggregate concrete; Waste slag aggregates; Mechanical properties; Durability properties

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PAPER • OPEN ACCESS

Cognitive OFDM-NOMA System: A succinct Study

Chavatapalli Tarun Vamsi Krishna[1], Chandana Mani Deepika[1], B.S. Saranya[1] and Murrey Neeladri[1]

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Journal of Physics: Conference Series, Volume 1714, 2nd International Conference on Smart and Intelligent Learning for Information Optimization (CONSILIO) 2020 24-25 October 2020, Goa, India

Citation Chavatapalli Tarun Vamsi Krishna *et al* 2021 *J. Phys.: Conf. Ser.* **1714** 012054

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https://doi.org/10.1088/1742-6596/1714/1/012054

Abstract

Integration of non-orthogonal and orthogonal multiplexing used to enhance the capacity of the system is presented here. This is also called as cognitive OFDM- NOMA. Here we overcome some problems which are divided into sub problems i.e., the power allocation optimization, user scheduling and sensing duration, respectively. Orthogonal frequency division multiplexing (OFDM) for multiusers can also be done by clustering based radio allocation (RA) scheme. This will improve maximum usage of wireless communications by optimizing the sum capacity of secondary users. The users in same group have the same OFDM sub channels to enhance spectrum utilization. Mobile networks have used time/frequency/code domain for multiple access, while in NOMA the power domain will be used.

PAPER • OPEN ACCESS

Study on Power Minimization techniques in SAR ADC Devices by Using Comparators Circuits

P. Divya Sree[1], B. Jyothsna Raj[1] and B. Srinivas[1]

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https://doi.org/10.1088/1742-6596/1714/1/012043

Abstract

Comparators play an important role in designing of SAR ADC. In this paper we achieve the required performance of SAR ADC at minimum power usage. Using of comparators will reduce the power and noise, Dynamic latch circuit used in comparator increases the speed. The differential amplifier is also discussed. Here we will get to know about Ramp ADC and also about various DAC's like M-DAC and AUX-DAC. The time-interleaving technique is the design technique that is used to increase the speed.

PAPER • OPEN ACCESS

Study of Echo Cancellation approach by using Least Mean Square (LMS) Algorithm

I. PavanKalyan[1], G. Jaya Santosh[1], K.H.K. Prasad[1] and Durgesh Nandan[1]

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https://doi.org/10.1088/1742-6596/1714/1/012053

Abstract

Sound is the origin of communication. We are using sound channel for interaction. The acoustic signal introduces echo signal properties which lead the original signal as error signal. In most of applications the adaptive filters implemented in time domain works quite efficiently. However, the complication of the adaptive filter increases as the impulsive reaction becomes quite large hence it cannot be implemented efficiently in time domain. Acoustic echo cancellation is one example where this can happen. In this paper we will explain about to acoustic cancellation and different methods

PAPER • OPEN ACCESS

Study on Energy Reduction Techniques in STT-RAM

Vura Sai Durga Eswar[1], K Devi Bhavani[1] and Durgesh Nandan[2]

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Journal of Physics: Conference Series, Volume 1714, 2nd International Conference on Smart and Intelligent Learning for Information Optimization (CONSILIO) 2020 24-25 October 2020, Goa, India

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https://doi.org/10.1088/1742-6596/1714/1/012041

Abstract

Spin Transfer Torque Random Access Memory (STT-RAM) is suitable to be considered for cesnic memory. In STT-RAM the altercative period of attractive burrowing intersection is exchanged by the showing up of turn enraptured current over the intersection and it appear to be the most preparing elective with the more thickness and low introduction power, one of the major test for STT-RAM is the more write current, this paper proposes dual source write assist circuit method to reduce the equal compose vitality that prompts a diminishing in power utilization and the limit voltage of dynamic transistor to rising temperature. The MTJ temperature will increase than the write error rate is reduced. The final result is by effective use of VDD and threshold voltage values

PAPER • OPEN ACCESS

Power Efficient Bit Lines: A Succinct Study

J. Bhaskara Veeraveni[1] and K. Devi Bhawani[1]

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https://doi.org/10.1088/1742-6596/1714/1/012042

Abstract

Reducing the consumption of power in VLSI circuits is challenging. A low power circuit in multi-port memories for power consumption reduction in bit lines is presented here. In this circuit the power of wide gates used in memory bit lines is decreased by reducing the voltage swing of the pull-down network. Wide gates were simulated and the results showed 40% lower power consumption. Processors are another component where power dissipation is high. Various methods are used to decrease the power dissipation. A number of methods reduce bus transitions to limit the power dissipation.

PAPER • OPEN ACCESS

A Review on Image Processing Sensor

M.V.V. RadhaKrishna[1], M. Venkata Govindh[1] and P. Krishna Veni[1]

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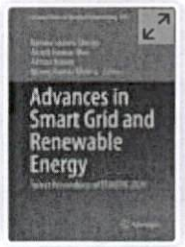
https://doi.org/10.1088/1742-6596/1714/1/012055

Abstract

Image sensors are used in all digital cameras, mobile phones and all other devices where images are to be captured. The most common parameter used by consumers to compare the different cameras is the pixel array size which is usually given in Mega pixels. The image quality is better with a higher megapixel count. Another parameter to distinguish between the different cameras is the type of imaging technology used like CMOS (Complementary metal oxide semiconductor) or CCD (Charge coupled devices). In this review we will present the working principles of an image sensor and conversion of light to electrical signals and subsequently to an image. The functional differences between the CCD and CMOS sensors will also be presented.



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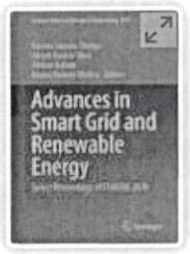

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Analysis of Received Signal Strength Based on User Position Locating by Using ML Methods

L. Sathish, Y. Satya Bhuvaneswari, B. Satya Sri Devi & Durgesh Nandan

Conference paper | First Online: 05 January 2021

Part of the Lecture Notes in Electrical Engineering book series (LNEE,volume 691)

Abstract

In this paper, we study an administered AI calculation approach dependent on Gaussian procedure regression (GP) to limit clients in a disseminated enormous numerous information various yield multi-input multi-output (DM-MIMO) framework from their uplink got received signal strength (RSS). The prepared machine learning calculation with the commotion free RSS information and utilizing this prepared calculation to gauge the client areas from their loud RSS. In

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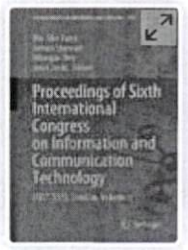

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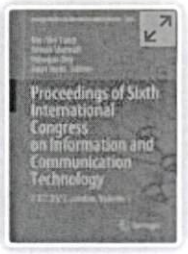

Proceedings of Sixth International Congress on Information and Communication Technology pp 555–567

Design and Implementation of an Efficient IIR Filter Architecture Using Merged Delay Transformation

P. Bujjibabu ✉, M. Kamaraju & K. Babulu

Conference paper | First Online: 10 September 2021

Part of the Lecture Notes in Networks and Systems book series (LNNS,volume 216)

Abstract

Signal transformation is such an essential function in modern applications. The filter is a vital element in signal processing for conversion and is designed with effective functioning and efficient naturally. Indeed, a filter design must ensure less area and the least power consumption. One can also reduce the hardware complexity and achieve a much better critical path delay by using infinite impulsive response (IIR) instead of finite impulsive response (FIR) filters. IIR filters are superior to FIR filters to a keep flat frequency phase response for all sample rates. From an area point of view, the existing IIR decimation filter implementation method is not up

Gudlavalleru, ApplyVolt, Vijayawada for their timely help and permission to utilize the Tools to carry out the experimentation with MATLAB Simulink/System Generator, in concluding these outcomes.

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Conference proceedings info: IPROMM 2020.

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Advances in Industrial Machines and Mechanisms pp 219–227

Improved Design and Development of Crop Conveying Mechanism in Reaper Machine

Anand Kumar Jangir, Narendra Achera, Saurav Khandelwal, Chirag Gupta, Himanshu Chaudhary & N. R. N. V. Gowripathi Rao

Conference paper | First Online: 21 July 2021

Part of the Lecture Notes in Mechanical Engineering book series (LNME)

Abstract

Mechanization of agriculture plays an important role for improved crop productivity. In harvesting, machines reaper is used to harvest wheat crops. In the existing machines, there is a need to improve the crop conveying mechanism which can also uplift the slant crops occurred due to wind and nature occurring problems. Thus, in this paper, an improved mechanism is proposed which can contribute to increase the efficiency of the machine. Kinematic analysis is also performed to validate and compare the experimental to design data. Torque

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Advanced Informatics for Computing Research

4th International Conference, ICAICR 2020, Gurugram, India, December 26–27, 2020, Revised Selected Papers, Part I

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Sections

International Conference on Advanced Informatics for Computing Research
ICAICR 2020: **Advanced Informatics for Computing Research** pp 62–70

Cancer Prediction Using Novel Ranking Algorithms and Machine Learning

A. Lakshmanarao, A. Srisaila & T. Srinivasa Ravi Kiran

Conference paper | First Online: 20 June 2021

Part of the Communications in Computer and Information Science book series (CCIS,volume 1393)

Abstract

Cancer is the second leading cause of death globally. Especially, breast cancer is the most problematic cancer with more death rates. In this paper, we proposed a novel fusion classifier model based on a combination of various machine learning algorithms to improve accuracy. First, the base level models are trained and then we applied a ranking based algorithms for predicting final accuracy. The proposed model is tested on two different cancer datasets from UCI, Kaggle repository. The experimental results on two different datasets shown the effectiveness of the

Mihai, I.C., Hsiung, P.A., Mishra, R.B. (eds) Smart Computational Strategies: Theoretical and Practical Aspects, pp. 13–24. Springer, Singapore (2019). doi: https://doi.org/10.1007/978-981-13-6295-8_2

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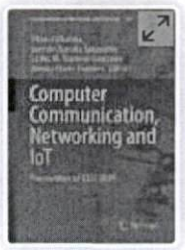

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Sections

Computer Communication, Networking and IoT pp 147–153

Finding MST by Considering Increasing Cost Order of the Edges Incident on Vertices

Rayudu Srinivas ✉, R. V. S. Lalitha, T. Rama Reddy & B. Durga Anuja

Conference paper | First Online: 19 June 2021

Part of the Lecture Notes in Networks and Systems book series (LNNS,volume 197)

Abstract

Finding a minimum cost spanning tree (MST) plays a key role in many applications. For a given graph $G(V, E)$, there may be more than one spanning tree (ST) that can be constructed, but out of all these STs, the ST which has least cost edges is called MST. Finding MST in linear time is important. In this paper, a novel approach is proposed to find MST. The approach used in finding the MST is based on the selection of vertices and least cost edge incident on that vertices. The approach proposed is simple and easy to implement. The time complexity of this algorithm is $O(n\log n)$.

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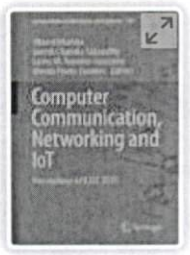

Computer Communication, Networking and IoT pp 85–91

A Novel Approach to Find Minimum Cost Spanning Tree (MST) of a Graph

Rayudu Srinivas, T. Rama Reddy, R. V. S. Lalitha & Shaik Vahida

Conference paper | First Online: 19 June 2021

306 Accesses

Part of the Lecture Notes in Networks and Systems book series (LNNS,volume 197)

Abstract

Finding minimum cost spanning tree plays a major role in many applications like transportation, communication, network, design of computer, etc. There are a number of algorithms proposed in literature but popularly used algorithms are Prim's and Kruskal's algorithms. The time complexity of these algorithms is not linear, so still finding MST in linear time is open to do research. These algorithms require the edges of the graph in sorted order. In this paper, a novel approach is proposed to find the MST for given graph which processes the edges based on levels of the graph. This proposed method requires level-wise sorted order of edges.

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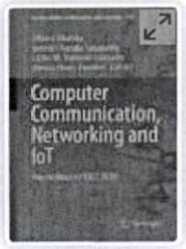

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Sections

Computer Communication, Networking and IoT pp 329–337

Self-automated Fault Diagnosis System for Internal Combustion Engines

Nitla Stanley Ebenezer, Abdul khurshid, K. Anjani Devi, Chodisetti Naga Sandeep, Penke Pragnana Manipal, Gorthi Siva Vijay & Thotakura Sri Satya Dhanesh

Conference paper | First Online: 19 June 2021

Part of the Lecture Notes in Networks and Systems book series (LNNS,volume 197)

Abstract

A heat engine often coined as a system transmutes thermic and chemic energies to mechanical energy. The current review employs a traditional heat engine, i.e., an internal combustion engine, where a self-automated optimization technique is incorporated for determining best optimal parameters and for diagnosing the flaws thereby enhancing the overall efficacy. Several difficulties are witnessed during the effective functioning of an IC engine which eventually roots to multiple energy losses leading to the fatigue failure of the entire

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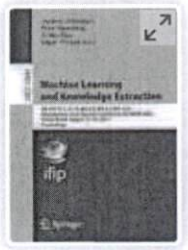

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Machine Learning and Knowledge Extraction

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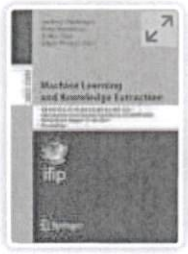

International Cross-Domain Conference for Machine Learning and Knowledge Extraction

CD-MAKE 2021: **Machine Learning and Knowledge Extraction** pp 51–60

Text2PyCode: Machine Translation of Natural Language Intent to Python Source Code

Sridevi Bonthu, S. Rama Sree & M. H. M. Krishna Prasad

Conference paper | First Online: 10 August 2021

716 Accesses

Part of the Lecture Notes in Computer Science book series (LNISA,volume 12844)

Abstract

Natural Language Processing has improved tremendously with the success of Deep Learning. Neural Machine Translation (NMT) has arisen as the most powerful with the power of Deep Learning. The same idea has been recently applied to source code. Code Generation (CG) is the task of generating source code from natural language input. This paper introduces a Python parallel corpus of natural language intent and source code pairs. It also proposes a Code Generation model based on Transformer architecture used for NMT by using code tokenization and code embeddings on the custom parallel corpus. The proposed

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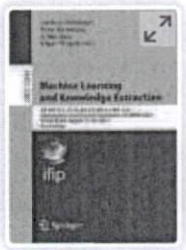

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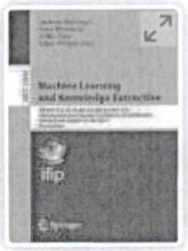

International Cross-Domain Conference for Machine Learning and Knowledge Extraction

CD-MAKE 2021: **Machine Learning and Knowledge Extraction** pp 61–78

Automated Short Answer Grading Using Deep Learning: A Survey

Sridevi Bonthu, S. Rama Sree & M. H. M. Krishna Prasad

Conference paper | First Online: 10 August 2021

Part of the Lecture Notes in Computer Science book series (LNISA,volume 12844)

Abstract

Automated Short Answer Grading (ASAG) is the task of assessing short answers authored by students by leveraging computational methods. The task of ASAG is investigated for many years, but this task continues to draw attention because of the associated research challenges. One of the core constraints of ASAG is the limited availability of domain-relevant training data. The task of ASAG can be tackled with several approaches and they can be broadly categorized into the traditional approaches based on handcrafted features and the Deep Learning based approaches. Researchers are applying Deep Learning Approaches for the past five years to address this problem owing to the

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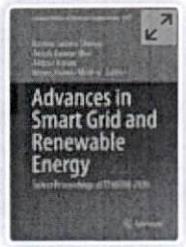

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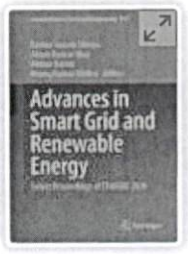

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A Review of Diverse Procedure for Extraction of Fetal ECG

K. M. L. Narasimhulu, N. Murali, M. Girish Kumar, T. Srinivasa Rao & Durgesh Nandan

Conference paper | First Online: 05 January 2021

Part of the Lecture Notes in Electrical Engineering book series (LNEE,volume 691)

Abstract

This paper emphasized the fetal ECG by conducting different methods to the observed maternal ECG. So that the heart conditions are depended on fetal, during the early stages of pregnancy and during birth. Here, using only non-invasive method proposed for reducing the harm for the fetal and mother. If it is using non-invasive method inserted some components into the mother, it will be only used during the labor. So, this is the best method to use non-invasive and get the fetal in ECG. Non-invasive methods for fetal's feature extraction are

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Computer Networks and Inventive Communication Technologies pp 907–913

Shape and Texture Features Extraction Using Segmented Histopathological Images

U. Rajyalakshmi, K. Satya Prasad & S. Koteswara Rao

Conference paper | First Online: 03 June 2021

Part of the Lecture Notes on Data Engineering and Communications Technologies book series (LNDECT,volume 58)

Abstract

For women, breast cancer occupies the second position in causing the occurrence as well as mortality. Optimum segmentation and feature extraction play a crucial role while categorizing medical images. The proposed paper integrates marker-based watershed approach with K-means clustering data for optimum segmentation. It deals with detail component protection. The work focus on feature extraction from the segmented histopathological images. Feature selection is necessary for minimizing the redundant parameters. Optimum features necessary for image

redundancy. IEEE TransPattern Anal Mach Intell 27(8):1226–1238

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Data Engineering and Communication Technology

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Sections

Data Engineering and Communication Technology pp 113–122

Privacy by Design Approach for Vehicular Tripdata Using *k*-Anonymity Perturbation

Nanna Babu Palla ✉, B. Kameswara Rao, Kaladi Govinda Raju & A. Vinaya Babu

Conference paper | First Online: 24 May 2021

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Abstract

Vehicular communication in intelligent transport system offers data dissemination among vehicles in rapid transmission of road incident log to trusted entities. The adversary attacks having background knowledge are often a side effect due to re-identity and linkage attacks by innocuous public data sharing provisions. The proposed work spotlight on attacks with background knowledge who attempts to extract individual's data using high end data extraction algorithms by linking with the vehicular trip database. Enhancing location privacy and

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Sections

Intelligent Computing in Control and Communication pp 117–126

Adiabatic Logic-Based Area- and Energy-Efficient Full Adder Design

Krishna Saladi & B. Leela Kumari

Conference paper | First Online: 05 January 2021

Part of the Lecture Notes in Electrical Engineering book series (LNEE,volume 702)

Abstract

Low energy- and area-efficient digital circuit design is unique among the significant navigational challenges of digital VLSI design suitable for real-time applications. Full adders are essential functional elements in complex arithmetic circuits; a 1-bit adder is developed by using adiabatic logic in this operation to get low power consumption. The intended 1-bit adder cell with adiabatic logic results in very less heat dissipation with its surrounding circuit atmosphere. As a result, this logic has minimal energy loss due to overheating dissipation. The proposed adiabatic logic circuit is compared with CMOS and pass transistor logic (PTL) with TG 1-bit adder topologies. The results show that there

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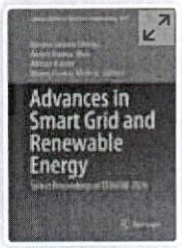

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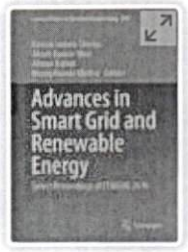

International Conference on Emerging Trends and Advances in Electrical Engineering and Renewable Energy

International Conference on Emerging Trends and Advances in Electrical Engineering and Renewable Energy

ETAEERE 2020, ETAEERE 2020: **Advances in Smart Grid and Renewable Energy** pp 257–266

Analysis of Quadcopter Technology as an Emergency Service

Prasanthi Magapu ✉, Sarthika Danthuluri, Vidheya Raju Boni & Durgesh Nandan

Conference paper | First Online: 05 January 2021

Part of the Lecture Notes in Electrical Engineering book series (LNEE,volume 691)

Abstract

Due to the traffic jam and due to the delay of the ambulance to the emergency area, many people died and still dying to date. Currently, this is a major problem. When there is no chance of saving lives due to the mentioned problems, there the usage of technology plays a major role. As many technologies are being developed day to day, Unmanned Aerial Vehicle (UAV) is one of the best technologies. The quadcopter technology with Global positioning system is the best way to reach the accident place in an emergency. The drone is

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Sections

Intelligent Computing in Control and Communication pp 127–133

Comparative Analysis of Rapid Single Flux Quantum (RSFQ) Circuit Technique Multipliers

Yamini Devi Ykuntam & Katta Pavani

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Part of the Lecture Notes in Electrical Engineering book series (LNEE,volume 702)

Abstract

The primary operation of any processor is to perform basic arithmetic operations. In all basic arithmetic operations, multiplication consumes more time to be performed. Multiplier is the component which performs the multiplication operation. Its performance speed is going to affect the speed of the entire processing unit. The major operation of multiplier is to generate final product from partial products. To perform this major operation, the required architecture may require more area which intends to increase in latency in operation. In order to improve the performance of processor with minimum area, fast multiplier must

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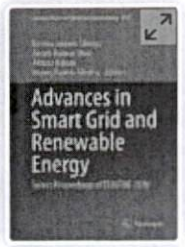

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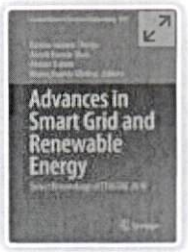

International Conference on Emerging Trends and Advances in Electrical Engineering and Renewable Energy

International Conference on Emerging Trends and Advances in Electrical Engineering and Renewable Energy

ETAEERE 2020, ETAEERE 2020: **Advances in Smart Grid and Renewable Energy** pp 321–328

Error Correction Code: Study, Challenges, and Applications

V. Vydehi, A. Lishitha, G. Pranathi, N. V. Satyanarayana & Durgesh Nandan

Conference paper | First Online: 05 January 2021

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Abstract

This abstract states that there is a chance of occurrence of an error during the transmission of the signal through a channel and while these errors can be a single bit or multiple bits. During these space applications, it is observed that we have to consider various parameters like power, area, and delay. Various codes are compared for the error correction codes. These codes can also manage and even enhance error in memory coverage in accordance with the Matrix and CLC codes. In space applications, there is a chance of occurrence of

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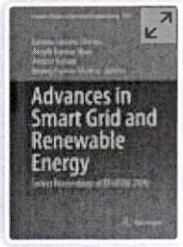

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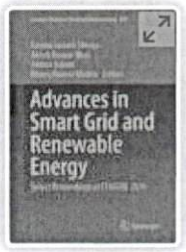

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Review on Different Types of Multipliers and Its Performance Comparisons

Bocha Dileep Venkata Prasad, Nalla Satya Sai Sanjeev, Krishna Saladi & Durgesh Nandan

Conference paper | First Online: 05 January 2021

Part of the Lecture Notes in Electrical Engineering book series (LNEE,volume 691)

Abstract

Multipliers are mainly used in digital signal processing (DSP) applications. The multiplier is the most popular one out of all existing arithmetic operations. It is used to perform the multiplication between two numbers in different types of approaches. Mainly the multiplier focuses on the four aspects to form an efficient multiplier, i.e., speed, power consumption, area, and accuracy. In this article, it covers all existing popular multipliers like booth, array, Wallace tree, sequential,

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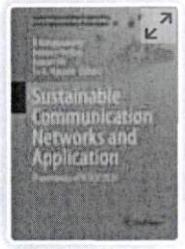

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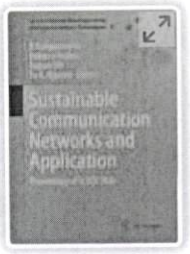

Sustainable Communication Networks and Application pp 643–654

An Efficient Energy Management of Hybrid Renewable Energy Sources Based Smart-Grid System Using an IEPC Technique

K. Bapayya Naidu, B. Rajani, A. Ramesh & K. V. S. R. Murthy

Conference paper | First Online: 26 January 2021

Part of the Lecture Notes on Data Engineering and Communications Technologies book series (LNDECT,volume 55)

Abstract

In this paper, a grid-connected microgrid (MG) is proposed to find energy scheduling for optimal energy management. Here, the MG system has a photovoltaic system, wind turbine, battery storage (BS), as well as microturbine (MT). An improved emperor penguin colony (IEPC) technique can continuously track the necessary load demand of the MG system connected to the grid. Here, the huddling behavior of EPC is improved by crossover and mutation operator. The goal of the IEPC

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