Lokmanya Tilak Jankalyan Shikshan Sanstha's
PRIYADARSHINI BHAGWATI COLLEGE OF ENGINEERING
Harpur Nagar, Umred Road (Near Bada Tajbagh), Nagpur-24
(Approved by AICTE, New Delhi, Govt. of Maharashtra
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This is certified that Number of research papers published per teacher in the Journals notified on UGC care list during the last five years.

Year	2022	2021	2020	2019	2018
Number of Research papers	18	9	12	11	2
Total					52

Certified Document from page No. 01 to 12

NITIN KRISHNARAO CHOUDHARI
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3.3.1 Number of research papers published per teacher in the Journals notified on UGC care list during the last five years.

For the Year 2021				
Sr. No	**Title of paper**	**Name of the author/s**	**Name of journal**	**Is it listed in UGC Care list**
1	Review on toxic metal ions removal by using activated carbon prepared from natural biomaterials	Archana R Chaudhari	Journal of Physics conference Series	UGC Care
2	Role of Machine Learning and Deep Learning Approaches in Designing Network Intrusion Detection System	Mr. K. N. hande	Algorithms for Intelligent Systems	Springer (SCI)
3	Data Hiding Using Quotient Value Differencing and Remainder Value Substitution Avoiding Incorrect Extraction Problem	Mr. D. B. Khadase	Sensing and Imaging	Springer (SCI)
4	"Experimental Study on Characterization of Bitumen Mixed with plastic waste"	Dr. R.N.Patil	International Journal of Mechanical Engineering	Scopus Index
5	Design and Analysis of MIMO dual band Patch antenna for 5G New Radio Applications in Mobile Terminals	Ms.T. U. Pathan	IOSR Journal of Electronics and Communication Engineering (IOSR-JECE)	Scopus Index
6	Detection of an explosive material in landmine, aqueous and air medium through sensor operated unmanned guided vehicle	Prof. K.D.Ganvir	IOP Conference series: Materials Science and Engineering	Scopus Index
7	Selection of Qualitative & Quantitative Criteria	Shailendra Daf	Science,	UGC Care

	weight for Selection of plant layout by using numerical Scale Method		Technology and Development	
8	A Revolution: Leachate Recirculation Experimental Study	Dr. R. N. Patil	Design Engineering	Scopus Index
9	Suspicious Mass Detection Algorithm in Mammograms	Dr. P. M. Palkar	TOJQI	Scopus Index

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Review on toxic metal ions removal by using activated carbon prepared from natural biomaterials

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Abstract. Heavy metals has wide range of applications including industrial, domestic, medical, agricultural and technological field. Due to industrialization and urbanization variety of heavy metal ions are released in the environment. Toxicity of heavy metal ions depends on the route of exposure, media of exposure and its dose. Some of the metals, due to its high degree of toxicity are incorporated in CERCLA (Comprehensive Environmental Response, Compensation and Liability Act) priority list of hazardous substances. According to CERCLA, arsenic is the top most toxic metal followed by lead and mercury. These metals are proven to be carcinogens for human beings even at lower concentration. Contamination of water resources by toxic metal ions is a common problem since past years. There exists different methods for removal of toxic metal ions from waste water but adsorption is the most widely used and effective method. There are several adsorbents used for adsorption of toxic metal ions but, adsorbents prepared from low-cost and ecofriendly raw materials like coconut shells, rice husk, sugarcane bagasse, banana peels, potato peels, corncob, wheat straw, neem barks, almond shells and others are capturing researcher's attention due to its easy availability and effective removal efficiency. This review highlights low cost adsorbents used for elimination of heavy metal ions from waste water and its other usage possibilities based on the literature study. This paper also highlights emerging potential bio-adsorbents which can provide maximum removal efficiency.

Keywords. adsorbent, adsorption, biomaterials, heavy metal ions

1. Introduction

Technological advancement give rise to many environmental challenges. Industrial, domestic, agricultural and mining activities are causing contamination of environmental resources like water [1]. World is currently struggling with a problem of water pollution. Water pollution is caused by natural activities such as volcanic eruptions and weathering of rocks which is responsible for heavy metal release. Heavy metals are naturally occurring, high atomic weight elements with density five times more than that of water. Some of the heavy metals like, zinc, copper, cobalt, chromium, manganese and iron are essential nutrients. These are required for biochemical, physiological

Role of Machine Learning and Deep Learning Approaches in Designing Network Intrusion Detection System

Kapil Hande and Urmila Shrawankar

Abstract There has been increasing number of attacks in computer communication networks including IoT and cloud infrastructure in recent years. Finding out malicious attacks from unknown sources is biggest challenge in network intrusion detection system. Identifying normal network traffic from malicious traffic is also a complex task in IDS. Good IDS requires highest detection rate and lowest false alarm. IDS acts as a second level of defence in addition to network firewall. Network IDS consists of three modules: data collection, feature selection and decision engine. IDS can be classified into two types namely misuse detection and anomaly detection commonly used in practise. To improve the IDS, detection efficiency researches are focusing on many deep learning techniques. Deep learning is an advanced subset of machine learning. These techniques are closer to artificial intelligence domain. Deep learning can be applied to many challenging learning problems and has generated good results. This paper investigates the appropriateness and analysis of application of deep learning and machine learning methods in implementation of network intrusion detection system.

Keywords IDS · Network security · Machine learning · Deep learning · IoT · Firewall

1 Introduction

Cyber security and information security are of utmost importance in today's digital world in view of increasing number of cyber attacks. We need to protect our data and information in the computer communication network from malicious user and attackers. As Internet traffic and data has been growing exponentially in recent years

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Data Hiding Using Quotient Value Differencing and Remainder Value Substitution Avoiding Incorrect Extraction Problem

Dipak Bhayyaji Khadse & Gandharba Swain

Sensing and Imaging **22**, Article number: 39 (2021)

Abstract

Steganography approaches designed using quotient value differencing (QVD) and least significant bit substitution provides better hiding capacity (HC) as compared to the steganography approaches designed using pixel value differencing (PVD). Some QVD steganography techniques suffer from fall off boundary problem (FOBP), and incorrect extraction problem (IEP). This research article proposes a steganography approach based on QVD and remainder value substitution (RVS). It addresses FOBP and IEP. It performs data hiding and retrieval on 1 × 3 pixel blocks. Three adjacent pixels are viewed as a block. From these pixel values, quotient values are created by quotient division, and remainder values are created by remainder division. Thus, we get 3 quotients and 3 remainders. To conceal data in remainders we apply RVS and to camouflage data in quotients we apply QVD. After applying QVD, appropriate adjustments are carried out to circumvent IEP and FOBP. The efficacy of this proposed approach is evaluated by peak signal-to-noise ratio (PSNR), HC, quality index (QI), and bits per byte (BPB). The recorded PSNR value is 33.59 dB and HC is 3.92 BPB. Furthermore, it is also observed that steganalysis tests are not capable of detecting this steganography technique.

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Design and Analysis of MIMO Dual Band Patch Antenna for 5G New Radio Applications in Mobile Terminals

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Abstract: ***This paper presents a dual-band MIMO antenna design with compact size for 5G communication under 6 GHz band frequency. The metallic monopole stub structure is used to miniaturization of antenna. The L-shape monopole antenna is modified by adding semi-circular element in radiating structure of monopole to obtain dual-band resonance. The High isolation is achieved by employing T-shaped stub in ground plane.It has compact size is 45 mm × 25 mm × 1.6 mm^3. The proposed Dual Band MIMO antenna has been design on FR4 material with εr = 4.4 with 1.6 thickness. The proposed antenna has 5G application in the bands of 2.5 GHz (2.34 GHz-2.62 GHz) and 3.5 GHz (3.20 GHz-5.20 GHz). The bandwidth of antenna getting 320MHz and 2500MHz at 2.5GHz and 3.5GHz respectively. The Isolation (S21) of proposed antenna is -31.2 dB at 2.5 GHz and -19.5 dB at 3.5 GHz. VSWR is less than 1.06 for both the bands. The designed dual band MIMO antenna covers 5G bands of 2.3-2.4GHz (n30/n40), 2.4-2.5GHz (n7/n38/n41/n90), and 3.2-5.2GHz (n77/n78/n80). The experimental and simulated results observed good matching except some slight variation. This proposed dual band MIMO antenna is suitable for 5G mobile Communications.***

Index Terms: Monopole, Dual-band, Miniaturization, 5G, ECC and MIMO.

I. INTRODUCTION

The fifth generation (5G) communication has been widely discussed to provide high data-rate communications in the future. The design and testing of the 5G communication system huge on the understanding of the propagation channels [1], and a large body of channel measurements is thus required. In recent development of wireless communication techniques, multiple-input multiple-output (MIMO) technology is attracting solution [2]. Currently, 5G mobile systems are broadening their spectrum to support a high data rate. In the World Radio Communication Conference (WRC) in 2015, the 5G candidate frequency bands below 6 GHz have been widely discussed, and the following frequency ranges have been suggested: 470–694, 2300–2700, 3300–3800, and 4500–4990 MHz Among them, 2.5 GHz & 3.5 GHz has been widely considered, as it can be accepted for most of countries. Therefore this paper was focused on the propagation channel characterizations at 2.5/3.5 GHz bands.

Previously, 2.5/3.5 GHz propagation channel has been studied mainly for the Wireless applications with limited bandwidth & large size [3] [4] [5]. Compact Dual band MIMO antenna is reported in [6] with an orthogonal ground plane to have isolation more than 18 dB The Dual band monopole MIMO Antenna used T-shaped junction to improve the isolation [7]. Also high isolation is achieved by orthogonally arranging the antenna elements [8-11] which is further enhanced by using neutralization line [8], partially stepped ground (PSG) [9] and λ/4 open narrow ground slots [10]. Multiple slits-ground are used in [11] to improve isolation. Few works has been conducted on Dual band MIMO antenna for the 5G NR in mobile terminal applications.

But all this antenna [6-11] having low bandwidth and large size so with the improved bandwidth, isolation & compactness which has been taken as an objective for this research work. In this paper, a compact dual-band MIMO antenna is proposed. In proposed antenna covers 2 frequency bands of 2.5 GHz and 3.5 GHz with excellent impedance bandwidth of 320MHz & 2500 MHz respectively. The high Isolation S12< -28dB and S12< -18 dB over the lower and higher frequency band are achieved.

II. ANTENNA DESIGN AND GEOMETRY

The dimensions and geometry of the proposed dual band MIMO antenna is shown in Fig. 1. The proposed dual band MIMO antenna has been design on FR4 Substrate with εr=4.4 and thickness (h) is 1.6mm. Partial ground plane with T shape stub element is used to improved isolation character tics of dual band MIMO antenna. Each antenna element has an inverted L shape monopole antenna with semi-circle strip attached and is fed by a 50 Ω Microstrip line. The two antenna elements of the diversity antenna are a separation distance of 18 mm in the *y*-axis direction. The inverted L shape monopole operated at high freq 3.5GHz. The total length (L1+L2) of monopole calculated using Eq. (1),

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International Journal of Mechanical Engineering

Experimental Study on Characterization of Bitumen Mixed with Plastic Waste

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ABSTRACT:

The disposal of waste plastic is a major problem. It is non-biodegradable and mainly consists of low-density polyethylene. The burning of these waste plastic bags causes environmental pollution. To find its utility in bituminous mixes for road construction and to contain this problem, experiments have been carried out on whether this waste plastic can be reused productively in the construction of roads. The experimentation at several institutes indicated that the waste plastic, when added to hot aggregate, will form a fine coat of plastic over the aggregate, and that such aggregate, when mixed with the binder, is found to give higher strength, higher resistance to water, and better durability over a period. Therefore, it is proposed that we may use waste plastic in the construction of rural roads. In this study, the shredded plastic waste is mixed in hot aggregate and the plastic modified mix is prepared using 5.5%, 7.5%, 9.5%, and 11.5%, plastic by weight of bitumen. It has been found that the Marshall stability value is at its maximum when 9.5% plastic waste is added to the mix. The other Marshall parameters are also improved with the addition of plastic waste into the bituminous mix.

Keywords: Plastic Waste, Bitumen, Marshall Stability

I. INTRODUCTION

Nowadays, we get snacks in plastic, food items packed in plastic, clothing and everything in plastic. The increasing dependency on plastic is a warning bell for us. Today, the availability of waste plastic is enormous, as plastic materials have become part and parcel of daily life. They either get mixed with municipal solid waste or thrown over land. If not recycled, their present disposal is either by land filling or by incineration. Both these processes have a certain impact on the environment. Under these circumstances, an alternate use for the waste plastic is also needed. In today's world, a complete ban on the use of waste plastic cannot be implemented. Sensible steps should be taken from the floor level to solve the threat of the disposal of plastic waste. It is possible to improve the performance of bituminous mixes used in the surfacing course of roads. The use of waste plastics in road construction is gaining importance these days because plastic roads perform better than ordinary ones and the plastic waste, considered to be a pollution menace, can find its use. Plastic is a very resourceful material. Due to the industrial revolution and its large-scale production, plastic seemed to be a cheaper and more effective raw material. Plastic is a non-biodegradable material and researchers found that the material can remain on earth for 4,500 years without degradation. Several studies have proven the health hazard caused by improper disposal of plastic waste. This paper investigates the effective use of waste plastic for coating the aggregates of the bituminous mix to improve its performance characteristics and to design an optimum bituminous mix. Recycled polythene carry bags were shredded into small pieces and mixed with aggregates of the bituminous mix at a specified temperature. Bituminous mixes were prepared with 60/70

Detection of an Explosive Material In Landmine, Aqueous And Air Medium Through Sensor Operated Unmanned Guided Vehicle

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Abstract: Various explosives and harmful materials are most dangerous for human beings; detection of such materials is growing concern with curiosity as well. This paper identifies the broad array of possible mediums of explosions. As it is very difficult to find explosive material which is hidden, saving the life of an individual or whole from chemical explosion is need for the safety of our nation. The study focuses on detection of explosives which works on landmine, water and air. Searching for an explosive material manually is difficult task for any person; hence an attempt has been made to fulfil the necessity of need to design such equipment which will help researcher and engineers to find the explosive material to save lives. This work intends to design the unmanned vehicle i.e. drone which will work under ground, water and in an air with remote control. The sensors are used to find the hidden explosion in various medium. To detect non-contact type metal object, proximity sensor is used. A clarification of the crucial investigation for each approach is joined by its overall appropriateness to the pertinent the relevant scientific findings.

1. Introduction

Terrorism is of the major concern in the world, because of the terrorist one cannot live their life with full of freedom and also in the communal zones or places there is fear to have any explosive in that areas and the bomb squad cannot reach to the explosive on time [2]. Inductive proximity sensors issued to find out metallic objects which are not contacted physically. Active principle is based on a coil and oscillator that generates an electromagnetic field in the nearby areas of the detecting surface. The existence of a metallic thing (actuator) in the functioning area causes a stifling of fluctuation generosity. The increase or tumble of such oscillation is predictable by a threshold circuit which vagaries the output of the sensor. The modules are selected from the variety of brushless motors, battery technologies and cell arrangements, and static area propellers appropriate to use in a four rotor suspended vehicle.
A quad copter is a floating vehicle where four rotors are used for lift, steering, and steadiness. Like other in-flight vehicles, a quad copter can attain upright flight in more steady form. There is no effect

Selection of Qualitative & Quantitative Criteria Weight for Selection of Plant Layout by Using Numerical Scale Method

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ABSTRACT

The aim of this paper is to design the criteria that affect the effectiveness of a Plant Layout. The design criteria can be classified into two categories which are qualitative and quantitative. The survey serves as a guide to those interested in how to evaluate and select the most appropriate criteria which can handle objective of good layout. This research give the clear idea about the selection of criteria and their importance (score) by using numerical scale method (NSM) These methods are particularly suitable to deal with complex situations, including various criteria and conflicting goals which need to be optimized simultaneously.

Keyword:Plant layout, Criteria, Multi-criteria decision making (MCDM), NSM (Numerical Scale Method)

I. INTRODUCTION

To operate production and service systems efficiently, systems should not only have to be operated with optimal planning and operational policies, but also have a plant layout that is well designed. The layout of a plant or facility is concerned with the physical placement of resources such as equipment and storage facilities, which should be designed to facilitate the efficient flow of customers or materials through the manufacturing or service system. The layout design is very important and should be taken very seriously as it can have a significant impact on the cost and efficiency of an operation and can involve substantial investment in time and money. The decisions taken with regards to the facility layout will have a direct influence on how efficiently workers will be able to carry out their jobs, how much and how fast goods can be produced, how difficult it is to automate a system, and how the system in place would be able to respond to any changes with regards to product or service design, product mix, or demand volume. So Optimal design of physical layout is an important issue in the early stage of system design and has a big influence on the long-term viability of the manufacturing system. A poorly designed layout will results in reduced productivity, increased work-in-process, increased manufacturing lead time, disordered material handling and so on. A lot of research has been dedicated to present the different approaches for the generation of layout. Detailed review is provided by (Kusiak and Heragu 1987), (Meller and Gau 1996), (Singh and Sharma 2006), (Drira et al 2007), and (Nordin and Lee 2016). However, no research has been found to survey the multi-criteria layout evaluation and selection approaches through a literature review since except (Lin and Sharp 1999). The aim of this proposed study is to present a survey about the criteria and the techniques considered by the decision makers for evaluating and selecting the most appropriate layout.

Muhlemann, Oakland and Lockyer (1992) explained that the plant layout process is rather complex, “which cannot be set down with any finality, and one in which experience plays a great part”. Design of good layout depend upon various criteria like Material Handling distance(Cost) which is measured (In meter) by the sum of the products of flow volume and

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A Revolution: Leachate Recirculation Experimental Study

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Abstract The aim of this Paper was to conduct a Experimental study on leachate characterization and to treat it by leachate recycling or recirculation to achieve the highest MSW biodegradation rate and to observe the BOD, COD levels. Landfill leachate is the liquid that forms when rain water percolates through landfill deposits, landfill waste contaminates the water making leachate which is both anoxic & acidic, distinct odor and high BOD, COD values which make it unmanageable to treat on site but can be transported to Wastewater Treatment plant. So the study is conducted to enhance the process of waste stabilization and to manage the leachate on site.
Keywords: MSLandfill, leachate recirculation, Parameter analysed

1.0 Introduction - Landfill leachate is a complex wastewater with considerable variation in both quality & quantity. The composition and concentration of pollutants are influenced by the types of waste deposited, hydrological factors, and more significantly by the age of the landfill site. Past visual images of municipal solid waste landfill leachate have typically been on the order of toxic sludge or black ooze[1]. Earlier national studies have reported extremely wide ranges in leachate pollutants concentrations, with very high figures of both organic compounds/constituents and metals, and low pH values. So, landfill leachate is an important issue of the waste management system in municipal areas because high contents of ammonia nitrogen and COD/BOD ratio present difficulties in treatment of landfill leachate[2].In a majority of Indian towns municipal solid waste is commonly disposed off by dumping on low lying areas, where the waste is likely to come in contact with either surface or ground water. The municipal waste is commonly disposed off in raw state which introduces a large variety of pollutants when it comes in contact with water[4]. Even refuse disposal has been conveniently carried out by land filling but not in an effective manner as they are older, unlined, undrained where solid wastes were received with very little monitoring or screening programs as the result whatever leachate is produced pollute the GWT which defiantly invites health risks[8]. For that we require a sanitary landfill in a control manner which not only helps in disposing the MSW but also solution for onsite treating the leachate. Many methods are there for the management of leachate[12].

Suspicious Mass Detection Algorithms In Mamn

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Suspicious Mass Detection Algorithms In Mamn

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Abstract

In the recent years the death rate due to breast cancer among women has and now it is a recognized world health problem. Early detection and tr death rate of breast cancer effectively. Presently numbers of imaging tech detection of breast cancer. Mammography test is the most efficient and re cancer early. But finding and detecting breast cancer on mammogram fatigue obligation to radiologist; hence sometimes it may be overloc Computer-Aided Detection system require to be extended and combined provide automatic detection of suspicious mass that meets the needs of point out the occurrence of breast cancer. Suspicious mass detection acc which will assist the radiologist to classify the breast cancer. This paper detect the suspicious mass in mammogram image, and also extract GLCM mass. These extracted GLCM features are graphically represented and ba these features; the mammogram is analyzed and classified as malignant ar

Keywords:

Mammography, GLCM features, Graphical Representation, Malignant an

1. INTRODUCTION