jims
Sector-5, Rohini, Delhi

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DELTECH UNIVERSITY
DELHI TECHNOLOGICAL UNIVERSITY

PRASTUTI 2020

(Annual Students' Convention)

"POLLUTION CONTROL AND SUSTAINABLE DEVELOPMENT"

Annual Student's Convention
On

Pollution Control And Sustainable Development

PRASTUTI2020

7th March 2020

Organized by

JAGAN INSTITUTE OF MANAGEMENT STUDIES
3 ,INSTITUTIONALAREA ,SECTOR -5 R0HINI, DELHI

IN AssociatioN 'w'ith

DELHI TECHNOLOGICAL UNIVERSITY
SHAHBAD DAULATPUR, MAIN BAWANA ROAD, DELHI

Message from Director

jims
Sector-5, Rohini, Delhi

PRASTUTI2020

We at JIMS are aware of the greatest challenge faced by the world today i.e. Environmental degradation by the human race for achieving higher growth in all the sectors of the economy. The human wants are unlimited and all world economies weather developing, underdeveloped or developed, seek more growth and development for their current consumer demands. The issue of sustainable development has been a topic of debate and discussions in esteemed global formats but lacks implementation at the ground level.

Prastuti, a Presentation contest has been designed for the young minds to deliberate and discuss the innovative ideas and technologies that can help to control pollution levels and curb environmental degradation. This event has received a remarkable response from students from various academic institutions across the country from the 12 last years.

I wish the entire team of Prastuti 2020 for their excellent efforts for making the event a grand success.

Dr. Pooja Jain
(DIRECTOR)

Message from Dean

jims
Sector-5, Rohini, Delhi

PRASTUTI2020

"Prastuti", an Annual Students convention aims to inject motivation and promote knowledge and learning amongst the students over various important issues of today and tomorrow. The convention attempts to present viable working solutions to the environment challenges faced by the world. Over-population, pollution, waste production & disposal, deforestation, lack of biodiversity etc. are the genuine troubles faced by the globe as a whole. The resources of the world cannot be changed, they are limited and cannot be enhanced. We need solutions and we need to take back control over the situation to ensure sustainable development and to conserve resources for the future generations. We need to put a limit on the usage of the resources and generate more products to meet the requirements.

It is indeed a pleasure for me to host Prastuti 2020 on the theme "Pollution Control and sustainable development" as environmental challenges facing the world today is growing in scale and complexity. I am very happy to share that this time also we have received a huge participation of the students all across the country and I am very sure that this convention will do justice in finding innovative solutions to various environmental challenges being faced by the world. This convention is conceptualized and designed to arouse a feeling of responsibility and accountability among the younger generation towards the present and future use of world's resources.

I congratulate the conveners and wish this Students Convention a great success.

Dr. Praveen Arora
(DEAN)

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Waste Management And Its Treatment

Mayank Girdhar, Mukul Gupta

BBA From Jims , Rohini sector-5 , New Delhi and 110085 , India
BCA From Jims , Rohini sector-5 , New Delhi and 110085 , India

Abstract:

The researchers chose this topic of waste management and its treatment as it is a big problem in India nowadays. The water bodies are also polluted due to untreated sewage. The landfill is increasing day by day having major portions of plastic and non-biodegradable as waste. The purpose is to study and analyze the current waste management system and finding solutions to the flaws in the current waste management system that would benefit society. The solution to the flaws is Generation legacy bin which further leads to the creation of Paver blocks and manures for farmers at subsidized rates. From this bin, the waste would be segregated leading to the welfare of public and farmers.

Objectives of the study:

- To study the current waste management system in India.
- To Find and analyze the flaws in the current waste management system.
- Find the solutions for the flaws in the current waste management system.
- To learn and adapt various waste management systems used all over the world.

The Implication of Idea:

- We can develop a reverse vending machine named **'Generation Legacy Bin'** in which when a user dumps a waste, the waste gets **segregated automatically** with the help of **detectors** present inside the bin and accordingly user will get the **incentive as the reward**. Further, Biodegradable waste can further be utilized in the **conversion of manures** which could be sold to farmers at **subsidized rates**. And Non-Biodegradable waste is used to make **pedestrian blocks**. This replaces cement with plastic waste in a pedestrian block and to reduce the cost of a pedestrian block when compared to that of conventional concrete pedestrian blocks. In India, **56 tones** of plastic are produced every year at present.
- The basic, and at the same time most important, types into which **we can divide the waste are biodegradable and non-biodegradable.** Sorting waste in this way can even reduce by half the amount of waste that must be taken to the recycling or landfill.

Keywords:

- Waste Management
- Sustainable Development
- Innovative ways to handle waste management.

Regression Model to Predict AQI parameter on Air Pollution Data of Delhi And Its Neighboring Areas

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Abstract:
According to the WHO, Delhi has been concluded as one of the most polluted cities in the world. While Delhi's AQI is generally moderate (101-200) between January to September, it deteriorates to very poor (400-500) and even severe (500+) between October to December due to various factors. Nearby town of Ghaziabad, Noida, Gurgaon and Faridabad have been equally. Tracing the same trends and statistics, this study will predict air pollution levels with respect to different toxic pollutants using predictive modelling and data science tools.

Keywords: air pollution, AQI, prediction analysis, regression

Waste Water Management: A case study of Kota city

Ankita Pareek, Department of Civil Engineering, University Department (Rajasthan Technical University)-Kota
Anurag Paroliya, Department of Civil Engineering, University Department(Rajasthan Technical University)-Kota

Abstract:
The Chambal River is the major source of the water for the entire city. By the analysis of data obtained from the various raw water treatment plants and sewage treatment plants, it is observed that the amount of sewage treatment is very less than as compared to the treatment of ram water, the remaining untreated sewage is directly flowing into the fresh water source, due to this many negative impacts arising which is leading to environmental degradation, damaging aquatic life and affecting human health. To overcome from this problem, various beneficial, efficient and ecofriendly sewage treatment technology have been proposed viz. Fluidized Aerated Bed (FAB), BIOFOR Technology, and Facultative Aerated Lagoon (FAL).

Keywords:
Fluidized Aerated Bed, BIOFOR Technology and Facultative Aerated Lagoon.

Emerging Green Market as an opportunity for Green Entrepreneurs and Sustainable Development

Garima Srivastava

BBA(CAM), GGSIPU

Abstract:

A new era of sustainability is rising and it's touching every corner of the world. Driven in part by consumers, governments, corporations and the growing visible effects of pollution, sustainability initiatives are becoming more ubiquitous, more aggressive and more expected. Looking for better lifestyle, consumers are searching for options that are healthier for them and for their homes. There has been major shift in the consumer taste and preferences. Green entrepreneurs can make profit through the market as well as social recognition in the society. Perhaps, this is the reason that there are opportunity for those companies who believe in innovation and redesigning their products and services in ecological manner. The purpose of this paper is to aim in general to understand the opportunities for green entrepreneurs in changing scenario of market shift through various case studies. The study is conceptual in nature and it tries to bring novel idea which can be applied in current market scenario.

Keywords- Green market, Consumer behaviour, Environment, Green entrepreneurs, Opportunities, Sustainable development, Green products

Green Marketing

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BBA, JIMS
BBA, JIMS

Abstract:

Green Marketing is where we introduce a product which is environmentally safe, and satisfies the customer's needs. Having a product that is both profit making and environment friendly can be a challenge. With brainstorming and coming out of a new innovative idea, producing an eco-friendly product can help to solve the problems that we face today.

Green Marketing Mix : Where we talk about the product, price, place and promotion of a product which is eco-friendly. We introduce a new idea which is eco-friendly and is cost effective with a 5 star ecolabel.

Conclusion: Green Marketing as a new trend, should be followed be all as it not only helps our environment be safe but also helps in sustainable development. As today, our environment has become very complex, with these new innovative ideas which are environmentally safe can help reduce the bad effects of human activities on environment.

Keywords: Green marketing, product ,price, promotion eco label sustainable development ,customer satisfaction ,customer needs .

PARIVARTAN (RE-USE IT IN A DIFFERENT WAY)

Rahul Ranjan, Ankita Parameswaran

BCA, GGSIPU

BCA, GGSIPU

Abstract:

E-waste or Electronic Waste refers to those electronic or electrical devices which have been disposed off. These e-wastes are very hazardous for both nature as well as human beings. The depletion of greenery, uncertain change in weather, etc. are all because of pollution and these e-wastes are also contributing, thus causing danger to health of human beings. The waste electronics are polluting the drinking water, land and our ecosystem. Therefore it's time to do something serious about it. Also many people are unaware as to how to discard these e-wastes and thus ending up polluting the environment. Our project aims at dealing with e-waste and making people aware of how to discard their e-waste.

Keywords: e-waste, pollution, hazardous, danger, human health

GREEN MEMORIES

Jai Jha, Jaanvi Sharma

BCA, Institute of Innovation in Technology and Management

Abstract:

Green memories, is based on rented plantation that provides a hassle free way to plant more trees to save the environment. There are many people living in cities and towns who are willing to save the environment for their future generations but aren't able to do that due to various reasons. So we are just providing a platform to all those people where the user can login and select the tree for plantation and fill their details and make payment for the seeds and plant. Also the user can name the tree and also can visit the location where the tree is planted. All the further expenses for growth of the tree would be taken care by the organization.

Keywords: environment, plantation, memories, generations, payment, hassle free.

Environment Sustainability and Development Through Agriculture

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Abstract:

With the advent of development of high yielding variety crop production increased many folds. However, these varieties needed high fertilizer dosage and irrigation. This lead to grey patches in many areas due to secondary salinization on account of excessive irrigation, also the environment pollution, is witnessed on account of high use of synthetic chemicals and over mining nutrients from the soil. This makes it necessary to restoration of mined soil nutrients and health of the ecosystem. Sustainable agriculture entails in its objective that high production should be coupled with high productivity, high profitability and environment sustainability. This is feasible by replenishing the mined nutrients including micro nutrients and rhizosphere health by addition of organic matter in the soil pool.
Restore the nutrients by natural or we say in our traditional way. Enrich the soil with micro flora and fauna. Control the pollution caused by the use of synthetic chemicals.
To achieve the objective, we need to focus on the following priorities:

Organic farming
To sustain soil microbial population for enhanced ecosystem effectiveness, soil organic matter must be preserved.
Use of resource optimizing technologies
Acts must be employed to conserve and care of all available resources
Biological oriented sustainable crop production system
Use of organics and bio fertilizer should be emphasized, which help in controlling pollution done by synthetic chemicals
High profitability
The crop must be crop cost efficient and give high output, in the manner of cost
Smart integration of crop and livestock.
A growing body of evidence shows that a smart integration of crop and animal production can be a recipe for more efficient, profitable farms.

Keywords: Smart integration, secondary salinization, grey patches etc.

GREEN FASHION

Wareesha Jabeen
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Abstract:

As the title itself say that fashion also need to be eco friendly if fashion which u follow today or every Year harm our environment and nature than that fashion is useless. After my long hour research, I realize how much this fashion industry harming our society in both the urban and rural area. As we all know that fashion industry today is the second largest polluted industry in the world in which India also has major role in textile industry. We always see change in trend and fashion in large in this world of fast fashion we many time ignore the consequences it has on our nature.

In industry where fibre produced and fabric manufactured and dye create a lot of pollution in form of producing green house gases, soil degradation, water waste etc. Those synthetic fabrics which we wear today which come with lot of advantages for us also turn bad when we wash them and their microfiber broke and even after sewage treatment go to the ocean, anyhow those microfibers we consume when we eat sea food. Same way there is so many things happening and i have a solution to give a better environment.

Keywords: Green Fashion, Eco-friendly, Fashion Industry etc.

Electrolyte water technology for purification of water

Abstract:

India shares 4.2% water for 16% of world population. water is thus scares commodity. Huge quantities of water are polluted on account of industrial effluents, domestic courses, animal waste and effluents from civic enmities like savage. such water are are unfit for agriculture as they contain heavy metal and industry as they infected by fungi, bacteria, virus and insect, pest. it is therefore pertinent to improve water quality using tangible technology which is cost effective technologically feasible and sustainable.

Electrolyzed water technology is such a technology where the normal water from any municipality tap is ionized into anolit ionized in machine and collected as anolit and catholit water. there addition of one liter of anolite or catholite water 1000 litre of waste water will improve the quality of waste water to the extent that it become usable in agriculture. Mainly by disinfecting the water and precipitating the physical impurities in the water reservoirs

this is a new technology which is established in Europe. we have throughover endo spanish collaboration produced electrolyzed water and conduct experiment on polluted water for purification. The result is revolutionary for a country like India where the other technologies have not paid dividence.

Keywords: Water Technology, Purification of water, Electrolyte Water etc.

Intelligent Fire Fighting System

Abhishek Gaur, Shivani Choudhary

BE-ECE, Chandigarh University

We are advancing the current fire management system by using GPS and IOT to make it totally automatic and provide safety to people. In this we are using ionization smoke detector which will detect the smoke efficiently and as soon as the sensor detects the smoke it will send signal to the Arduino and this will further send simultaneous signals to our intelligent firefighting system. The alarm will start ringing and simultaneously the water will start sprinkling all around the place so it can help us to control the fire. The exact location will be sent to the fire station using GPS technology, at the same time using the concept of IOT the main supply will be tripped off to prevent short circuit, the windows and door will automatically be opened to provide ventilation near the fireplace. moreover, our system consists of a safety switch by which the user can turn off during false alarm cases. LED is installed so that during nights when main switch board is tripped there is still light to show the way.

The system consists of ionization smoke sensor which detects the smoke and can be reused, GPS which sends the exact location to the fire station, water sprinkler to sprinkle the water in the fireplace and a safety switch to avoid false alarm cases

Using the concept of IOT, the windows will automatically get opened the main power supply will be tripped and there are LEDs which will help the people to evacuate.

Water Management: A Patron for Environment

Yashita patwal

Architectural Assistantship, MeeraBai Institute of Technology

Abstract:

From now to ten year back no one would have anticipated that in future potable water will be sold in shops. Presently, on earth there is less than one percent of water accessible to human use, which is further decreasing day by day. We can't turn our face from this alarming situation of water scarcity.

An efficient system of water management including conservation, disposal, recycling and treatment of water is very much needed in today's scenario of rapid urbanization. We pay little attention to what happens to the water after we have used it. Disposal of waste water safely without affecting and polluting our surrounding and ecosystem is very important for sustainable use. Recycled or treated water through various technologies will definitely reduce the demand of fresh water as well as decrease the damage occurred due to water pollution, which will also eventually avoid the shortage of water in future.

Water management is an essential part of a city infrastructure in the process of urbanization. Proper and efficient management system of water is expected to form a major part of the twenty-first century's strategy for sustainable development incorporating environmental considerations and providing mankind, a better place to live in.

Smart Chimney & Vehicle Filter

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Abstract:

This concept is designed to build up a highly effective and budget friendly natural filter to separate pollution generated by vehicle and chimney. The Activated charcoal which is applied in the filter is customised using bone char, coconut shells, peat, petroleum coke, coal, olive pits and sawdust. This is an eco-friendly product. It can be easily customized according to the requirements of the user. Activated carbon has an incredible vicinity area per unit volume, and a sub microscopic pores system where adsorption occurs. Activated carbon is a carbon-derived substance, such as coal, coconuts, nutshells, peat, wood, and lignite. Every organic material is processed to a higher carbon content, which are the largest raw materials used for the activated carbon. There will be 4 chambers. In 1st chamber there will be activated carbon photo catalyst which will break down the harmful gases into small molecules. In second chamber Molecules will pass through and will be absorb by activated charcoal. In activated charcoal channel it will absorb VOC, remove odour and help to control humidity (by removing excess moisture from the air). Third and fourth chamber consists of UV lamp and ions which help the first and second chamber in providing energy from sunlight for reaction to happen. UV has short wavelength that our eyes can recognise the outside blue / violet portion of the electromagnetic radiation. Activated carbon seems to have been extremely successful as an air mitigation alternative because of its outstanding adsorbing characteristics. It openly drive its sales in almost every part of the world.

Keywords:

1. Charcoal filter
2. Smart Chimney
3. Natural chimney filter
4. Activated Carbon Filter
5. Vehicle filter

Climate Change and Sustainable Development

Pragati Mehndiratta*

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Abstract:

We live in a society that is heavily impacted by climate change. This report focuses on the aspect of climate change and sustainable development. The significant points covered are the basic concepts and theory of climate change and sustainable development; how green house emission, raise of sea level, and climate change are connected with the instability of climate in last 100 years; the various sustainable development measures and methods are implemented to fight climate change. Additionally focus on international agreements such as the Kyoto protocol, Paris agreement, etc.; the strategies utilized by corporate and government for embracing sustainable development for minimizing climate change. Finally, the major activities and achievements did until now over climate change and sustainable development in India and other parts of the world have also been included.

Keywords: Carbon Footprint, Climate Change, Green House Gases, Sustainable Development

Wastewater Management and Control for Urban Civilization

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Abstract: Water that has been negatively affected by human use, making it chemically unfit for further utilization is termed as wastewater. The drainage of this untreated water into the ecosystem is reported as the major cause of water pollution. Thus, wastewater must be valued for its potential as a resource, and must be treated without causing any further damage to the environment. Unfortunately, the convergence of various IT fields and advancements in embedded technologies have not been utilized to the fullest potential in the control and management of pollution. The employment of new technologies widens the scope for optimization. One of the major concerns in the timeline of the treatment is analyzing the pollutants considering that the wastewater varies chemically. The prior knowledge of contaminants with respective concentrations can help in devising water treatment solutions specific to the former. Another possible aspect that poses a challenge is the lack of a mechanism for the identification of sources of pollutants.

The objective is to develop a robust remote water monitoring system that is capable of analyzing the water in terms of pH, turbidity, DO(dissolved oxygen) and dissolved CO_2 in real-time. Moreover, the idea is not just limited to monitoring the parameters but also for assisting in devising an optimized treatment mechanism, therefore the system is expected to constantly measure the parameters and transmit the data to the destination for further improvisations. For reliable long-distance data transmission, GSM/GPRS technology is used. The system will be equipped with the GPS module for sending the location information piggy bagged with the data value in real-time. This hardware provides an uninterrupted and scalable solution to remote and real-time water assessment and encompasses built-in location tracking functionality for easy analysis and source identification.

The development of this robust water monitoring device is just a fundamental step towards a bigger goal. Considering the fact that the need for pure water is ubiquitous, this system can be installed anywhere may it be then an organization, water treatment plants, military camps, industries, conveyor belts, or as small as one's home for water quality assessment. As an extension of the subject, with some customizations, a subsystem can be introduced with a typical valve-like enclosing on it. Once some specific type of pollutant is found, an adequate amount of required adsorbents can be released.
The huge data collected over time can be used to devise optimized separation methodologies and treatment techniques specific to the pollutants. The system offers a solution to major issues i.e the identification of the origin of the hazardous contaminants in the water. This information could help in raising awareness and warning in that area. Moreover, AI algorithms and Data mining techniques such as neural networks and regression can be deployed on the data to facilitate the prediction of unknown values and probable risk. Further, the result based analysis could be done to cover the aftereffects of treatment.

Keywords: turbidity, adsorbents, AI Algorithms, neural networks, regression.

Is Hard Copy Bills really required?

Manav Bansal

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Abstract: In the current era, there is a lot of Pollution and waste produced every day. Be it bio-waste, paper waste, e-waste etc. If we talk in terms of figures, they are not calculable and are huge in number. An estimate tells that 3.50 billion metric tons of waste is generated every year.

Since there are a lot of waste types produced by a user, some are also handled by the governments to some extent. Personal level recycling is also important. But if we say that waste must not be produced to a certain level and it's in our hands right now and we are not implementing it, then what will be your reaction!! In other words, we can bring this figure down drastically right now and the technology required is in our hands at the moment then what will be your answer? Let me explain in detail.

PROBLEM STATEMENT

Out of various types of waste, people produce a lot of paper waste every day. Paper waste may include Transaction Bills that people take or are given to them in markets. A lot of trees are also cut down to produce paper rolls for making new paper rolls leading to Global Warming and various other factors due to this.

The paper is used in a lot many other places but a huge area is in Bills that we take. But is paper bills really that important in today's date? Just ask yourself this question.

If your answer is YES that we need paper bills today also then you need to update your mind-set as it's high time. If you say NO that we don't need paper bill then we say great!! You are really on the right track. But discontinuing bills is not what I am saying. Shocked? No Paper bill and still a bill in your hand with existing technology. Yes it's possible.

SOLUTION

Just ask yourself a question that how many people don't carry a smartphone today? Answer will be minimal. Out of every 100 people, 90 have a smartphone. From a local Rickshaw puller to a well-established person, most of users have a smartphone.

Bills can be digitized as most of users have a smart device. Why give a user a paper bill if he doesn't ask for it. Provide a link on message to the bill. If a user asks for bill in hard copy or he does not have a smart phone, give him a hard bill. From personal experience, I have seen that people throw away bills just after receiving them at food outlets and even in malls sometimes.

Dominos did this thing of providing an e-bill a few years ago and it was a great initiative to save paper but I don't understand why they discontinued this. Giving e-bill is the best solution to save paper as its just matter of software updates to add a module of sending bill to user via a SMS. Every store has their database in which stores ask for customer name and Mobile Number. Just send the bill on that.

KEYWORDS Bills, Paper, Pollution, Smartphones, Consumers, People

Energy Saving through vehicle detection sensors and solar energy

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Abstract:

Existing Problem:

Wastage of electricity by the mode of highway lights while not in use.

Proposed idea:

- Use of advanced material for energy storage.
    - Using **vehicle detection sensors** on roads, which can regulate the working of highway lights i.e. the lights will be dimmed when there is no movement of the vehicle on highways and with the sensors will detect the vehicle within the range of 1 km and the lights will work on its full intensity till the vehicle passes.
    - The sensors will be used in accordance with the least installation cost involved and utility maximization.
    - For the prototype, the **Ultrasonic sensor** has been used.
    - As per the proposed plan, **Pneumatic Tube Sensors** will be used, which will transmit the intensity of the vehicle in order to detect the movement of vehicles.
    - Also, **solar panels with chargeable batteries** will be installed on the top of those highway lights which will use solar power to store solar energy to be used in highway lights.

Expected outcome:

- This will reduce the unnecessary wastage of energy through highway lights and also it will reduce the manageable cost of highway lights by the use of the natural sources of energy i.e. solar energy.

Keywords: Energy, electricity, highway, solar panel, vehicle detection, ultrasonic sensors, pneumatic tube sensors, chargeable battery

Demilitarization

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Abstract:
INTRODUCTION

1. Demilitarization is an increasingly important aspect of ammunition management, with the drive of higher performance and greater safety.
2. As we know, ammunitions have expiry date as propellants and explosive lose their chemical properties over time even if properly stored and maintained.
3. Defense Research and Development Organization (DRDO) uses various methods for demilitarization which are impacting our environment in various ways. These are:-
   - **Dumping** - It is the procedure where we dump to dispose these ammunitions. Drawbacks:
     - Risk to marine life
     - Land degradation
     - Hazardous for air and water
     - Not eco-friendly
   - **Resale -** Ammunitions if not consumed by country, then are sold to others if needed.
     Drawback:
     - No assurance of sale
   - **Open Burning and Open Detonation (OB/OD) -** It is uncontained thermal treatment such as incineration and oxidation
     Drawbacks:
     - Air emission
     - Noise pollution
     - Residual material disturbing eco-system
   - **Solar Plant -** Disassembling and melting of ammunitions through solar power Drawbacks:
     - Residual attained are bunt in open air
     - Metals doesn't get melted through solar power plant
     - No reusability

Keywords:

1. Demilitarization- mean the reduction of state armed forces.
2. Propellants - a substance that causes something to move forwards.
3. Detonation – the action of causing a bomb or explosive device to explode.

Stubbkhad- a solution of stubble burning

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PGDM, JAGAN INSTITUTE OF MANAGEMENT INSTITUTE

Abstract:

Stubkhad is a manure that will be created from crop stubble which will help in preventing pollution caused due to crop burning. Crop burning has become a huge problem nowadays and its effect on environment and even on human health is clearly visible. Government and farmers have difference of opinion regarding the treatment of crop stubble making this problem even more acute; government wants farmers not to burn stubble while farmers consider it the cheapest way and even convenient.

Stubkhad, our proposed idea, will solve this problem. We will employ our own machines and extract stubble out of the fields and further use it to make compost. The extraction service would be provided to the farmers free of cost so that we can get our raw material (stubble) for free. The compost thus made would be lower in cost than the normal fertilizers used by the farmers. We would give back the farmers what we had taken as a raw material.

We are including both long and short process for the generation or production of the manure it incorporates cutting of the evacuated stubble into fine pieces and after that including bioculum water, checking of the dampness after every 2-3 days than once more including water according to need, we need to keep up the carbon nitrogen proportion which would be done by including different crude materials like green growth, green squander or brown squander. The long process incorporates all this prepare but the number of turnings is increased and the days required for this process will be around 30-40 days. With these processes the problem of stubble burning can be turned around into budget friendly manure.

Keywords: Solution of stubble burning, Affordable, Organic, Manure, Farmers, Society, Environment, Health, nutrients, pesticides free

Green Attitude and Sensory Marketing of Organic Skincare in India

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Abstract:

Deterioration of the environment over the years has made people more conscious about the skincare products they consume and it also builds up the green attitude of people towards organic, natural and sustainable products. This is the reason the demand for these green products is increasing today. These green products have also given marketers an opportunity to use sensory marketing to market their products rather than using a traditional approach.

The purpose of this paper is to determine the impact of sensory marketing and the green attitude of people on their green purchase intention. For our study, we have taken the sample data of more than 200 males and females respondents residing in Delhi.

Various statistical analysis was used such as regression, correlation, and ANOVA. Results were then analyzed using MS Excel. The findings obtained in this research may be helpful for various policy makers, practitioners, academicians, psychologists and marketers for a better understanding of the subject. This study can stand exemplary for other urban areas in India similar to Delhi.

Keywords: Green attitude, sustainable skincare, green purchase intention, sensory marketing, environmental degradation, green marketing

Achieving Sustainable Development through Green Banking

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Abstract:

Green banking means promoting environmental friendly practices and reducing carbon footprint from banking activities. The banks and financial institutions can play an important role in promoting environmental sustainability through green banking practices that can influence the attitude of the stakeholders towards the environment. Green Banking is a form of banking from which the nation gets environmental benefits through social and environmental considerations. Sustainable development and preservation of the environment are globally considered as a serious issue to protect the planet from the destruction by mankind. Thus, it is imperative for the banks and financial institutions to take responsibility for safeguarding the environment and society.

Based on the recent studies, the prevailing condition of environment pollution can be effectively addressed through financial institutions and banks. There is a need to come up with a banking system that can aid in reducing environmental pollution. In an attempt to address the issues of environmental degradation, most countries have adopted the green banking practices. Green banking is proactive in nature and a smart way to think towards future sustainability. Green banking practices include online banking, paperless banking system (green channel counters), green lending policy, mobile banking, e-statement, solar ATMs etc. Keeping this in mind, the present study aims to understand the concept of green banking and its contribution towards sustainable development. The study also focuses on green banking initiatives and their impact on various stakeholders. The study is exploratory in nature and uses secondary sources of data collection and is based on real life cases in the banking sector.

Keywords: Green banking, Sustainable development, environmental pollution, environment friendly banking practices, paperless banking system

Transforming Delhi Tourism to Ecotourism

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Abstract:

Delhi is known to be the heart of India and is considered one of the prime locations that tourists visit. According to Economic Survey of Delhi 2018-19, the number of domestic tourists visiting the state had been rising continuously. It grew from 18.49 million in 2012-13 to 22.62 million in 2014-15.The latest survey conducted by NSSO (72nddround, 2014-15) on tourism illustrated that the majority of tourists (95 per cent) visited Delhi during the year for 'holidaying, leisure and recreation'. If the state has huge number of tourists and pollution level is also increasing day by day then for the sake of environment friendly tourism, Ecotourism needs to be encouraged in the state. Apart from pollution other major issue that environment is facing today is excessive waste. Waste which is non-biodegradable is an alarming situation for our ecosystem. Managing waste is the need of the hour. Waste management should also be adopted by government as well as at individual level by all citizens. This paper aims to highlight the importance of ecotourism and to suggest the ways in which Delhi government can promote ecotourism and create awareness. It also intends to understand how to better manage waste through Case Study on Waste to Wonder. Data has been collected from secondary sources (Journals, Books, and Web links) and case study method is used (Basically how SDMC managed Delhi's waste from landfills and made it a tourist spot which is incurring good revenue).

Keywords: Ecotourism, Pollution, Sustainable Development, Waste Management

Cardio

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Abstract:

We are CARDINO'

- Our team has come up with the idea to voice automate cars with the help of (I.O.T) a product which is affordable for the middle class and especially abled people.
- We have built a prototype which is fully functional and passed all the quality tests. Further, we believe to prove the market existence with similar but upgraded models.
- CARDINO as a product is smartness unlocked in terms of security of the passenger as well as the environment using its A.I technology.
- CARDINO checks the pollution 24/7 emitted through the car and lets the user know the actual carbon outflow from the car.
- It is a revolutionary product for upcoming generation as well as the environment.
- We help you connect to the interface which is non-radioactive and can interact with other health care equipment.

Keywords:
CARDINO, voice automation, cars, A.I, environment, I.O.T, Arduino, revolutionary, Future, health care, road assistance.

Green HRM in Promoting Environmental Sustainability:

A Roadmap for Indian Retail Companies

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Abstract:
Over the past few years, Human Resource Management (HRM) has observed various dynamic shifts such as in its roles, functions and overall influence in moulding organizations towards the betterment. HR needs to function in a way that it makes employees engaged in order to make the workplace productive. It should also focus on building an equation between human capabilities and technology. It has been observed that organisations are becoming more conscious about the increasing importance of integration of environmental management of organisations and for initiating green products to make it environment friendly. One such practice is green human resource management (Green HRM). Green HRM can be defined as the use of HRM policies to promote the sustainable use of resources within the organisation and also promotes the cause of environmental sustainability. The essential elements that are needed for Green HRM are the preservation of knowledge capital and environmentally- friendly HR practices. Any public or private organization related to retail sector, IT, etc., can contribute significantly in ensuring a greener environment if they integrate different basic environment friendly initiatives in to their operations. Based on the recent research by Sakka (2018), there is a need to make the organisations green, by integrating Green HRM practices such as green supply chain management, green social responsibility and green competitive advantage strategies in an organisation.
Across the global retail landscape, retail giants such as Marks & Spencer (M&S), Wal-Mart and IKEA have been integrating sustainability in their HR functioning through Green HRM practices. Though big Indian retailers are taking various Green HRM initiatives towards the sustainability agenda but there still remains a lot of scope for them to meet the global standards. Keeping this in mind, this paper aims to achieve the following objectives: (i) To study the benchmark Green HRM practices adopted by global retail giants and (ii) To provide a road map for Indian retail companies to meet the global standards of Green HRM practices. This research is exploratory in nature and the data has been collected from various secondary sources.

Keywords: Environment, Technology, Sustainability, Retail

Smart Car Exhaust Neutralizer and Tracker

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Abstract:

Vehicle Currently Running on roads emits loads greenhouse gases such as carbon monoxide (CO), Polyaromatic hydrocarbons (PAHs), Sulfur Dioxide (SO2), Water Vapor, ETC into the environment. So to control the emission of these gases directly into the environment we have developed system that can directly be attached to the exhaust of vehicle and can neutralize some of these gases before being released in the environment directly.

One of the main cause is that these gases are emitted and the owner himself doesn't know the damage being caused to environment by his vehicle. Our neutralizer will come with a tracker embedded in the vehicle engine that would track down the greenhouse gases being emitted by the vehicle and send the data to the IOT based cloud system that would analyze the data and send the feedback to the vehicle owner on his smart phone that what gases are being emitted by his vehicle and what could be the reason and his vehicle's pollution check is to be done. This system can easily be fitted in any vehicle and will have basically two parts: -

1. Neutralizer – This device would be fitted in the car exhaust itself and will be compact and easily removable. This component will neutralize the harmful gases being directly released in the environment.

2. Tracker – This device would be a smart IOT based system connected to the cloud that will track down the gases being released in the environment and send that data to the user by suggesting him when to do pollution checkup the Vehicle and what are gases being released in surrounding.

Carbon monoxide is the most harmful gas emitted by vehicles. It is the most important gas that needs to be treated before it is emitted from vehicles.

Reduction of nitrogen oxides to nitrogen(N2)

- $2\ CO + 2\ NO \rightarrow 2\ CO_2 + N_2$
- hydrocarbon + $NO \rightarrow CO_2 + H_2O + N_2$
- $2\ H_2 + 2\ NO \rightarrow 2\ H_2O + N_2$

Oxidation of carbon monoxide to carbon dioxide

- $2\ CO + O_2 \rightarrow 2\ CO_2$

Oxidation of unburnt hydrocarbons (HC) to carbon dioxide and water, in addition to the above NO reaction

- hydrocarbon + $O_2 \rightarrow H_2O + CO_2$

With the help of Internet of Things (IOT) all the gases can be kept in check. Using various sensors and cloud services information will be stored and used accordingly.

Keywords:
Neutralizer, Tracker, Internet of Thing

Resonating Wind Power Generator

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S.K Jagannath Charya - Mechanical Engineering(Rajasthan Technical University)

Abstract:

New wind generators with different characteristics compared with conventional wind turbines can improve the exploitation of this clean energy source. This paper is a condensed synopsis of the most general aspects of an alternative technology based on VIV fluid structure interactions that avoids the use of gear and shafts. The efficiency of renewable energies has grown significantly in recent years and wind energy has been one of the most important responsible. The increasing size of wind turbines is making wind power to be one of the most relevant energy sources and the most remarkable technology may be photo- voltaic solar energy. In addition, it is well known that the combined use of different renewable energy sources is synergistic due to mutual compensation in periods of absence of wind, sunlight etc. The development of new wind generators can be very useful if it is able to emulate the features that have made the photo-voltaic the main energy source in the distributed energy sector.

Keywords:
Vortex-induced vibrations (*VIV*), Resonance, Wind Energy.

Water Purification using Sunlight

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Abstract:

This project is all about the ideation, planning and creation of a cheap, effective and longer lasting water purification method which can be used anywhere, but specially for the need of clean and safe drinking water in underprivileged areas, where such facilities for purifying water are not available.

With the world's second largest population at 1.33 billion, and expected to grow to 1.72 billion by 2050, India finds itself unable to serve the vast majority of that population with safe, clean and affordable drinking water.

Our solution is to clean the unsafe water at a small scale with the help of sunlight. So, this project involves a photocatalytic composite that integrates photocatalysis with filtration of water. This process will remove bacteria and organic materials from the water.

Photo catalysis is a type of catalysis reaction, in the presence of light, that results in the modification of the rate of a photoreaction - a chemical reaction that involves the absorption of light by one or more reacting species - by adding specific substances (catalysts) that participate in the chemical reaction without being consumed in the process.

Firstly, sunlight (UV rays) strikes a photocatalyst such as Titanium Dioxide. Electrons are energized from the valence band to conduction band, leaving positive holes behind. As seen in equations below, the electrons and holes combine with oxygen and water to create Reactive Oxygen Species (ROS). This ROS degrade organics and inactivate bacteria. Subsequent exposure of the water to sunlight inside beaker containing composite discs, will result in complete deactivation of coliform bacteria and degradation of organics. We can form these composite discs in any shape and size that we want, so we can also use them in water tanks to clean large amount of water within a few hours, simply using sunlight.

Micro-hybrid technology induced short-duration engine shutdown's effect on Air Pollution

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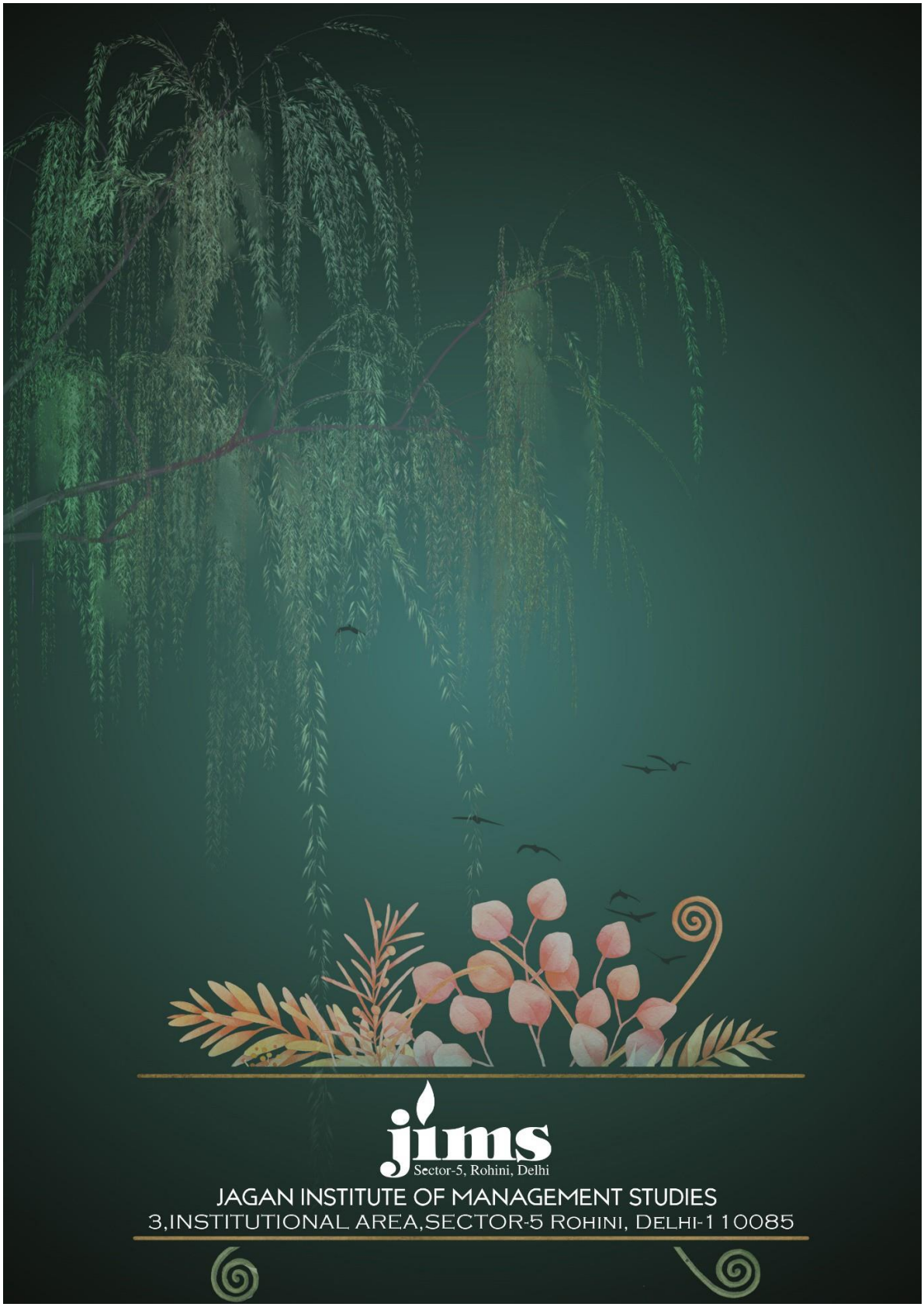
Abstract:

Hybrid electric vehicles and especially micro-hybrids are a brief term promising field of research which allows reducing CO2 emissions with none fundamental change within the architecture of the vehicles. this greatly helps in fuel saving in urban driving situation because of engine cut-off when the car is stopped.
Moreover, the utilization of micro-hybrid functionalities also when the engine is running may increase performances once more. In this prospect, the classical optimal control formulation are going to
be extended to the case of micro-hybrids and solutions for the real-time
control problem are going to be derived through a MPC.

Keywords: Air Pollution, Hybrid vehicles, Energy Management, Optimal Control.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