

3D Finite Element Stress Analysis of Human Knee Joint

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Abstract: Knee joint consists of different components namely femur, tibia, patella, menisci, ligaments and tendons which make it a complex structure. While performing motions and physical activities, knee bears different critical loads of human body. The present study focuses on the analysis of stress magnitude on knee joint when introduced with different loads acting upon it with varying angles of inclination. A graphical modeling of human anatomical structures namely the bones; the femur, the tibia and the patella have been established. The 3-D CAD model of the knee joint is designed by using MR Images converted into geometric model using MIMICS innovative suite. The models are imported to ANSYS 15.0 to get the specific results of stress magnitude using finite element analysis. A finite element analysis of knee joint under static loading conditions has analyzed. The study is done for a load range of 540N to 790 N and change in angle from 10° to 90°. The mechanical properties like Young's modulus, Poisson's ratio of the human bones varies from person to person based on age, weight, gender etc. The study helps in the designing of implant structure by giving emphasis on various types of material to be used depending upon the amount of stress experienced at different locations in knee joint. Overall, the study provides a relation of the stress magnitude in different components to the knee joint. Overall, the study is a guideline for fabrication of prosthetic implant in the line of intimation with reduced number of experiments with better stress management which enhanced load bearing capacity as designed.

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Experimental study on whistling in corrugated pipes

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Abstract: An experimental study presented in this paper is aimed at finding out the whistling behavior of composite pipes with a corrugated pipe segment having various lengths. The term composite pipe here refers to such a pipe with a smooth pipe upstream and downstream of a corrugated pipe segment. Such composite pipes widely used in the industry, can produce high amplitude whistling noises. Experiments with pipes of 1.5 ~ 1.6 cm inner diameter and various lengths of corrugated segments were carried out for flow velocities up to 22m/s. Maximum whistling amplitudes were observed at a critical Strouhal number between 0.34 and 0.40. The composite pipes are divided into two categories. First one is involving upstream smooth pipes having lengths smaller than the downstream ones and the second type consists of longer upstream segments and shorter downstream ones to observe the variation in whistling amplitudes. A simple model used previously for composite pipes with corrugated segments in order to predict a critical Mach number above which whistling occurs, has been employed here to verify the validity of the model for different pipe system configurations. In this study three different lengths of corrugated pipe segments have been used to observe the whistling behavior.

Performance Study of Diesel Engine Using Nanofuel

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Abstract: Experimental investigation was carried out to study the engine performance and emission parameters of a single-cylinder Compression Ignition (CI) engine using nanofuels which were formulated by sonicating nanoparticles of aluminium in base diesel. Study of engine performance at higher loads revealed drop in peak cylinder pressures and reduction of 7% in specific fuel consumption for aluminium as compared to diesel. Improved combustion rates raised exhaust gas temperatures by 8% leading to increased brake thermal efficiency by 9%, as compared to diesel at maximum loading conditions. Volumetric reduction of 25–40% in CO emission, 8% in hydrocarbon emission was measured when the engine was fuelled with aluminium as compared to emissions from diesel. However, elevated temperatures resulted into marginal rise in NO_x emission.

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Performance Evaluation of Ecofriendly Refrigerants in the Low Temperature Circuit in Terms of First Law and Second Law Efficiency of Three Stages Cascade Vapour Compression Refrigeration of Biomedical Applications

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Abstract: Biomedical preservation requires storing biological specimens like stem cells blood and organs, at a storage temperature below -95°C. Hence, the main aim of the current research is to conduct a thermodynamic energy and exergy analysis to determine the thermal performance of three stages / four stages cascade refrigeration systems in the high temperature condenser temperature of 70°C using R1234ze and R1234yf in high temperature circuit and varying evaporator temperature (-20°C to 10°C) in High temperature circuit, Varying evaporator temperature in first intermediate evaporator temperature (-70°C to -90°C) circuit using R134a and R410a as ecofriendly refrigerants is investigated. For low temperature evaporator temperature (-145°C to -100 °C) using hydrocarbons (R290, R600 and R600a), R404a and other refrigerants in low temperature evaporator circuit on system performances (i.e. overall system coefficient of performance, (first law efficiency), exergetic efficiency (second law efficiency) and system exergy destruction ratio (EDR) is investigated in three stages /four stages cascade refrigeration systems are shown in this paper.

Study of Nanostructured Co and AL Doped ZNO Films

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Abstract: Electroless Co($x = 0.04, 0.03, 0.02$) and Al($y = 0.01, 0.02, 0.03$) doped ZnO nanostructured thin films have been deposited on soda lime glass in the present work. The wet deposited films are dried in air and subsequently annealed at 500°C for 2 hr in a muffle furnace in air environment. The film deposited samples are characterized by SEM, XRD, Superconducting quantum interference device (SQUID) magnetometer and UV visible spectrophotometer. Microstructure of the Co and Al doped ZnO film is strongly affected by different doping concentration into ZnO matrix. X-ray diffraction analysis confirms the absence of metallic Co or Al clusters or any other phase different from wurtzite type ZnO. The field dependence of magnetization (M-H) curve of different concentration of Co and Al doped ZnO films measured at room temperature exhibits the clear ferromagnetism with saturation magnetization (M_s) and coercive field (H_c) of the order of 3.843 to 4.813 10^{-3} (emu) and 400.389 to 436.769(Oe) respectively. It is found that ferromagnetism increased correspondingly with Co concentration. The relevant ferromagnetism mechanisms at room temperature in Co and Al doped ZnO films are discussed.

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Sustainability Analysis in Terms of Energy and Exergy Evaluation of Two-Stage Vapour Compression Refrigeration System using Eight Ecofriendly Refrigerants

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Abstract: Comparative thermodynamic analysis using first and second law of eight ecofriendly R152a, R600, R600a, R410a, R290, R1234yf, R404a and R134a refrigerants in the two stage vapour compression refrigeration system on the basis of energetic and exergetic performances is presented in this paper. The thermal performance parameters such as entropy generations, first law efficiency in terms of COP, second-law efficiency in terms of exergetic efficiency, sustainability index were investigated at different ambient conditions. It is found that that both energy and exergy efficiencies of R134a is 8.97% and 5.38% lower than R152a and R600 respectively. Numerical computation was carried out using ecofriendly refrigerants and it was also observed that the irreversibility was minimal at higher evaporator temperatures while condenser temperature was responsible for highest irreversibility in terms of thermal energy losses in the two stage vapour compression refrigeration system. Sustainability index for R152a (1.96) was highest compared to other ecofriendly refrigerants.

Designing and Fabrication of Intercooler and Control of Three Phase Digitalized Reciprocating Air Compressor Test Rig with Automatic Control Drive Unit

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Abstract: Air Compressors are used to raise the pressure of air with the minimum expenditure of energy. An air-compressor sucks the air from the atmosphere, compresses it and delivers the same under high pressure to a storage tank. Since the compression of air requires some work to be done on it, some form of prime mover must drive a compressor. The compressed air is used for many purposes such as for operating pneumatic drills, rivets, road drills, paint spraying, air motors and in starting and supercharging of I.C. Engines etc. It is also utilized in the operation of lifts, rams, pumps and a variety of other devices. In heavy vehicle automobile, compressed air is also used for power brakes. [1]

Importance of Design History to Renovate CAD Model Errors

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Abstract: The aim of this paper is to propose an approach to repairing CAD model errors for the users of CAD data as few things are as frustrating as unusable, poor quality data. Users often waste time fixing or rebuilding such data from scratch on the basis of paper drawings. While previous studies use the boundary representation (B-Rep) of CAD models, On the basis of design history, CAD model errors can be corrected by an interdependency analysis of the feature commands or of the parametric data of each feature command, as well as by a reconstruction of the feature commands through rule based reasoning of an expert system. Unlike other correction methods based on B-Rep models, our method repairs parametric feature models without translating them to a B-Rep shape, and it also preserves parametric information.

Designing and Fabrication of Electro-Pneumatic Trainer Kit

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Abstract: Pulse current gas tungsten arc welding is an important joining technique for different metals like Aluminium, Magnesium, Steel, Titanium and their alloys. With increasing applications of these metals and alloys in aerospace, aircraft, automotive, electronics and other industries PTIGW is the best technique evolved so far. In this document an attempt has been made to critically review this welding technique from different perspective for different metals an Electro pneumatics is successfully used in many areas of industrial automation. Production, assembly and packaging systems worldwide are driven by electro pneumatic control systems. The change in requirements together with technical advances has had a considerable impact on the appearance of controls. In the signal control section, the relay has increasingly been replaced by the programmable logic controller in order to meet the growing demand for more flexibility. Modern electro pneumatic controls also implement new concepts in the power section to meet the needs of modern industrial practice. Examples of this are the valve terminal, bus networking and proportional pneumatics. In introducing this topic, this project first looks at the structure and mode of operation of the components used for setting up an electro pneumatic control. The following chapters then look at the approach to project planning and the implementation of electro pneumatic controls using fully worked examples. Finally, we had a positive approach towards our project and by looking towards the trends and developments in electro pneumatics this work was completed which would be a path shown by us towards the development of electro pneumatics trainer kits. Our work was based on controllers and relays but not on P.L.C, but we would rather say that if neglecting the cost of P.L.C, this kit could also be controlled from remote places also and better controlled signals could also be delivered if we had used P.L.C. Our circuits are based on 24 V D.C and working pressure was 0.15 MPa to 0.8MPa. we had found that by considering this very working pressure the valves/cylinders behave in a good manner rather than creating a hammering effect by using more air pressure and alloys. Some important PTIGW processing parameters and their effect on weld quality are discussed. The microstructure and metallurgical defects encountered during welding process such as porosity, cracking, oxide inclusions and loss of alloying elements are described. Mechanical properties of welds such as hardness, tensile and fatigue strength, and other important structural properties are discussed. The aim of the report is to review the recent progress in PTIGW of different metals and alloys and to provide the basis for follow-on research.

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To Study the Effect of Various Additives on Vulcanized Rubber – A Review

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Abstract: The purpose of the present work is to design and fabricate the high pressure effervescent spray combustion system for the study of high pressure spray effervescent combustion characteristics. In the present work, the high pressure effervescent spray cylindrical combustion chamber or system was developed by producing internal pressure and temperature due to combustion process approximately equal to 32 bar and 800 K respectively. It is found that curved surface thickness and closed end surface thickness of the cylindrical combustion chamber were 7.42 mm and 15.76 mm respectively. Vulcanization is a chemical process discovered by Charles Good Year in 1839. Using this process, mechanical and physical properties of natural rubber or synthetic rubber are improved. There are different types of vulcanization processes like sulphur vulcanization, urethane cross – linkers vulcanization, etc. There are also different methods of vulcanization such as press vulcanization, open vulcanization, continuous

vulcanization and cold vulcanization. The objective of the present work is to review literature related to vulcanization of natural rubber or rubber blend to know about the effect of various additives used in vulcanization process on the properties of the rubber vulcanized.

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Designing, Fabrication and Control of Three Phase Digitalized Reciprocating Pump Test Rig with Automatic Control Drive Unit

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Abstract: Reciprocating pump is a positive displacement plunger pump. It is often used where relatively small quantity of water is to be handled and delivery pressure is quite large. Reciprocating pump is widely used in automobile service stations, chemical industries, or as metering and dosing pumps. Reciprocating pumps find vast applications in modern machineries and often works either in series or parallel. The apparatus consists of a KISAN WAVES-KW50 series, double acting reciprocating pump mounted over the sump tank. The pump is driven by 3-Phase mono block motor. An energy meter, voltage meter, ampere meter, frequency meter and r.p.m meter has been fixed on the electrical panel for finding out the different parameters. Measuring tank is provided to measure discharge of the pump. The pressure and vacuum gauges are fixed to measure the delivery pressure and suction vacuum respectively. R.P.M of motor is controlled with automatic control drive unit. Hand shut off valve/gate valve is provided at different stages of pipeline to control the pressure of water. In this experimental work, an attempt has been made to design and fabricate an experimental set-up that comprises of a reciprocating pump which is arranged in such a manner that the experimental set-up is able to work either individually or in series and in parallel combinations. The designed and fabricated test rig has efficiently served the purpose of providing a clear idea about the effectiveness of experimental set-up in transmitting fluid to distant work stations. It has been found that by using reciprocating pump of KISANWAVES-50, the overall efficiency of the pump is 88% with power consumption of 0.09 KW at 800r.p.m.

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Thermal Analysis Validation for Different Design Tubes in A Heat Exchanger

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Abstract: Shell and Tube Heat exchanger are the basic types of heat exchanger one of the fluids flow through a bundle of tubes enclosed by a shell. The outer fluid is forced through a shell and it flows over the outside surface of the tubes. Such an arrangement is employed where reliability and heat transfer effectiveness. In order to achieve the maximum heat transfer rate an analysis is made on single tube with two different fluids (Water and Al_2O_3 -water based Nanofluid) in a shell and tube heat exchanger. With relate to same to have a maximum heat transfer rate this paper gives various optimal design solutions using computational techniques. To measure the performance of different designs, its model is suitably designed and fabricated so as to perform experimental tests. Thermal analysis has been carried out for different designs with two fluids and on the basis of comparison one gives the best heat transfer rates.

Effect of Electromagnetic Field and Mechanical Milling in the Synthesis of Metal Matrix Nano Composite

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Abstract: Ceramic nanometric SiC particles (n-SiCp) were reinforced in 7075 aluminium matrix to synthesize the metal matrix nano composites (MMNCs). The inclusion as well as uniform distribution of nano particles in aluminium matrix is a great challenge. To accomplish this, a new hybrid stir casting technique was used to fabricate the MMNCs. The uniform distribution of the reinforcement depends on good wettability of reinforcement with the metal matrix. Hence, to improve the wettability, 1 wt % micro Mg particles were mechanically milled with two different additions of n-SiCp with weight fractions 1% and 1.5 % and injected into the matrix melt with the assistance of argon gas. As-casted materials were peak aged for 12 hours at 135° C. Tensile tests, low speed impact test and hardness tests were used to investigate mechanical behaviour and found that composite reinforced with 1% SiC exhibited better mechanical properties. The mechanical properties of nano-composites are characterized by employing optical microscopy, scanning electron microscopy and X-ray diffractometer. This method remarkably facilitated a uniform dispersion of nano-SiC within the aluminium matrix as well as a refinement of grain size.

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Analysis of Ball Bearings under Dynamic Loading Using Non-Destructive Technique of Thermography

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Abstract: Roller bearing defect is a major factor of failure in rotating machinery that affects its proper functioning which results in substantial mechanical and economic losses. Therefore, condition monitoring of roller bearing is important and the study of severity of defects are necessarily required in order to avoid catastrophic consequences. Defects monitoring during dynamic loading condition of rotational machineries with the use of contactless, non-destructive infrared thermo graphic method is proposed. By using a rotating ball bearing, passive thermo graphic experiment was performed as an alternative technique to proceed the condition monitoring. Based on the results, the temperature characteristics of the ball bearing under dynamic loading conditions were analyzed thoroughly. Also, a comparison of these results was done for different bearings with characteristic defects. As a result, it was confirmed that infrared thermography method could be adopted to monitor and diagnose the faults by evaluating quantitatively and qualitatively the temperature characterizes according to the condition of the ball bearing.

Thermo analysis of Hydrogen liquefaction system

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Abstract: Hydrogen is rich source of energy but its properties in gaseous state cannot be used efficiently but at the liquid state in can be used in various application but high cost of liquefaction of hydrogen cryogenic system and less efficiency component turned the cryogenic science toward optimization. Second law efficiency analysis system components on demand base parameters, reduces cost of whole system. A mathematical computational program is made on the basis of hydrogen system and second law analysis is done on different input parameters is studied. Second law efficiency of hydrogen system is 19.82 % and COP is 0.9746 is found when inputs are at ambient condition and compressor pressure at 15 bar is provided, but study of graph shows that both start decreasing with further increases of compressor pressure whereas liquefaction mass ratio and Total work done is increases with increase in compressor pressure.

Experimental Performance Analysis of Earth-Air Heat Exchanger for Energy Efficient and Eco-Friendly HVAC Systems

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Abstract: Ground earth air heat exchangers are the emerging techniques which reduce the cooling and heating load of buildings in summer and winter season and thus reduce the overall energy consumption in a building. The earth air pipe heat exchanger (EAPHE) control the ventilation air temperature using the geothermal heat energy of the earth. In this paper experimental set up of earth air pipe heat exchanger (EAPHE) installed to find the performance analysis of ventilated air at different operating conditions. The performance analysis of earth air pipe heat exchanger (EAPHE) done by varying the various parameters like air velocity, mass flow rate, depth of the pipe and material of the pipe etc. The results obtained revealed that the temperature inside the earth can be increased by 8-10 °C during winter season and can be decreased by 12°-13° C during summer seasons compare to air atmospheric temperature. In this work the main work is to implement the water jacket around the pipe at the exit section of air flow and then comparative experimental results obtained with and without implementation of water jacket around the exit section of pipe. Maximum Temperature difference attained by EAPHX system without implementing the water jacket is 14.0°C. Maximum Temperature difference attained by EAPHX system with the implementation of the water jacket is 21.3°C.

Skill Development and Empowerment of Rural India through Renewable Energy Education, Training and Innovation: The Role of Delhi Technological University

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Abstract: India has tremendous energy needs for its vast growing population but it is very difficult to meet those needs through existing conventional means of power generation. Electricity consumption in India has been increasing at one of the fastest rates in the world due to population growth and rapid economic development. India's economic growth has been somewhat stalled because the amount of energy generated is inadequate to keep the growth engine of India running at the desired speed and there are huge energy shortages almost in every states of the country.

Now, the question arises, how can India solve the existing problem to meet the future energy demands and help eliminate wide –ranging power outages in the future? To solve this question, answer is, “India is blessed with plentiful of renewable energy sources and if those are properly utilized, India can solidify its place in the world as a super power which can not only take care of its own energy needs but also of other south east Asian nations.

Renewable energy also has the advantage of allowing decentralized generation and distribution of energy- particularly for the rural energy needs, and thereby empowering people at the grass root level.

Common Defects in Grey Cast Iron Products, Their Causes and Remedies - Case Study

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Abstract: Whilst most foundries today recognize the types of defect found in grey cast iron appreciation of the causes and therefore cures is not always apparent. This paper examines some of the common defects, which have been found during examination of rejected castings in a foundry in Agra (U.P). Two mains categories of defects viz. solidification related defects and flow related defects were observed during the examination of castings, hence both of the types were analyzed and remedies suggested.

Lean and Agile Manufacturing System Barriers

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Abstract: Due to rapid globalization and faster growth of world market, there is always a need of modification in the present mode of manufacturing system; these modifications increase the viabilities of manufacturer to move ahead in competitive market. These changes also improve the manufacturer and consumer relation by meeting the latest demand of consumers.

The concept of Agile Manufacturing system is the new in era of twenty first which covers the responsive and time saving strategies design and adopted by the manufacturers to dominate the market. Agile Manufacturing system (AMS) proves to be advancement over other manufacturing systems which are like Flexible Manufacturing System (FMS) and Lean Manufacturing System (LMS). Although many industries and companies in India are still in the phase of FMS and still need to cover advance strategies.

For this it is needed to identify the barriers that come in between the implementation of AMS. This paper is based on the Lean and Agile Principles, in which these problems has been tried to remove the barriers. This paper is the effort to identify and remove the barriers with the help of case study.

Thermodynamic (Exergy-Energy) Analysis of a Low Pressure Kaptiza Claude System for Liquefaction of Gases

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Abstract: From various Cryogenics systems, lot of a detailed thermodynamic analysis of cryosystems have been reported in literature however the modification of Claude systems for low pressure for high yield of liquefied mass of gases is very limited available in literature so far. A comprehensive exergy and energy analysis of Claude Kaptiza cryogenic system for various gases is carried out in this paper by using various properties variables (i.e temperature, pressure etc) in system to find out the more efficient statics of system included energy destructions in system. Numerical computations have been carried out for various gases in Claude Kapitsa system and it was observed that the inlet variables like pressure, temperature and intermediate mass ratio respectively are 3-6 bar, 280-290 K and 0.7 for optimized result of considered variables such liquefaction mass, liquidaion temperature and second law efficiency in low pressure Kaptiza Claude system.

Decision Making Using AHP under Reverse Supply Chain Environment for EOL Products

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Abstract: The study, characterization and modeling of reverse logistics and its application becomes imperative as the issues related to environment and societies gain more and more importance. With this becoming a necessity, there arises a need to realize the fundamental importance of decision making in a reverse logistics environment. Due to uncertainty involved, the decision making tends to be an arduous and complicated task. In the following paper, an attempt is made to create a model for choosing one out of three alternatives for a reverse supply chain using Analytic Heuristic Process (AHP) along with delineation of the advantages and disadvantages. The three alternatives are a part of a strategic decision which makes it one of the most crucial decisions and a huge determinant in the success of a reverse supply chain.

Fuel Adulteration, Problem and Mitigation Strategies: A Review

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Abstract: Comparatively Lower priced adulterants are commonly added to gasoline and diesel in India and other parts of the world also. Out of these lower priced, sub-standard, inferior adulterants some contribute towards the increase in the pollutants emitted from the internal combustion engines though all of them reduce the tax revenue of any country which directly affects the development of the whole mankind. This paper narrates the harmful outcomes of the different types of fuel adulterations on quality of air and discusses the different methods of adulteration detection and testing.

Nucleate Pool Boiling of Saturated Distilled Water on Uncoated and Coated Horizontal Cylindrical Tube

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Abstract: Nucleate pool boiling of saturated distilled water on uncoated as well as copper coated brass heating tubes of thicknesses 15, 25 and 35 micro meter at atmospheric and sub atmospheric pressures has been analyzed. Also the effect of heat flux, pressure and coating thickness on boiling heat transfer coefficient on coated tube surfaces has been investigated. Heat transfer coefficient for saturated boiling of distilled water on uncoated tube as well as on copper coated tubes at atmospheric and sub atmospheric pressures increases with the increase in heat flux and pressure. Further, coating on plain tube enhances the value of heat transfer coefficient at atmospheric and sub atmospheric pressures; enhancement continues up to a certain value of coating thickness and thereafter decreases with increase in thickness of coating. A criterion for enhanced boiling of water on copper coated tubes has also been prescribed in this paper.

Experimental Investigations on Wire Electrochemical Micromachining (WEMM) Using Continuous DC Supply

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Abstract: In this study, Wire Electrochemical Micromachining using Continuous DC supply is studied and experimental investigations were performed to study the effect of input parameters like machining voltage and electrolyte concentration on metal removal rate and machining accuracy i.e. overcut. Since there is no tool wear in this process, a very thin wire can be used as cathodic tool. This study also experimentally determines the optimum range of machining for the maximum metal removal rate and better machining accuracy using Continuous DC supply.

Biodiesel Production from High Free Fatty Acid Feedstocks through Transesterification

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Abstract: Transesterification is one of the most popular methods to decrease the viscosity of vegetable oils to produce biodiesel. It is the reaction of vegetable oil/ fats with an alcohol to give fatty acid alkyl esters in the presence of a catalyst with glycerol as by product. A catalyst is used to increase the rate of reaction and yield. The reaction is very much affected by the free fatty acids content in the feedstock. This paper discusses the appropriate method to produce biodiesel from the high High Free Fatty Acid (FFA) feed-stocks.

QUAD-ROTOR Unmanned Arial Vehicle (UAV) –A Review

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Abstract: A review has been performed on modelling and control of Quad-Rotor unmanned arial vehicles (UAVs) based on earlier published works. This research develops a thorough understanding of the system's behaviour, whereas it can be used as case study, for experimenting with control techniques and other abilities developed. The main objective is to arrive at a complete and as realistic as possible conclusion, that too without unnecessary complexity, by using simulation model in Mat lab/Simulink, allowing further immediate use of the quad rotor in future studies.

Effect of Cutting Parameters of Turning Process on Cutting Tool Vibrations and Surface Roughness of Stainless Steel using Taguchi Method

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Abstract: In actual cutting conditions various forces and unseen factors arise which cause vibrations. If vibrations occur between the tool and the job, then naturally the dimensional accuracy cannot be maintained and the performance of the machine tool will not be satisfactory. Also the machine tool vibration has detrimental effect on tool life and thus the cost of the production is increased and productivity lowered.

In any machining operation, minimizing the vibration of the tool is a very important requirement for any turned work piece. Thus the choice of optimized cutting parameter is very important for minimizing the vibration of the cutting tool. The focus of this study is the collection of tool vibration data generated by the lathe dry turning of SS304 samples of diameter 31 mm using ISO 6R 1212 as the cutting tool at different levels of speed (130, 180, 340rpm), feed (0.1, 0.20, 0.22mm/rev) and depth of cut (0.4, 0.5, 0.6mm) and then analyzing the obtained data using taguchi analysis to show how tool vibration varies within a given range of speed, feed & depth of cut. The vibration here is represented by its peak acceleration. The analysis revealed that for the specified range of speed, feed and depth of cut, any change in the depth of cut causes a large change in the tool vibration while change in the cutting speed causes comparatively lowest change in tool vibration.

This study highlights the use of Taguchi design to optimize the multi response in turning operation. For this purpose Taguchi design of experiment was carried out to collect the data for tool vibration and cutting forces. The result shows the optimum values of the input parameters and a confirmatory test is held to confirm the result. Although a high roughness value is often undesirable, it can be difficult and expensive to control in manufacturing. Decreasing the roughness of a surface will usually increase its manufacturing costs. This often results in a trade-off between the manufacturing cost of a component and its performance in application.

Roughness can be measured by manual comparison against a "surface roughness comparator", a sample of known surface roughness, but more generally a Surface profile measurement is made with a profile meter that can be contact (typically a diamond styles) or optical (e.g. a white light interferometer).

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Influence of Intake Manifold Geometry on Engine Performance in the Hydrogen-Fuelled SI Engine

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Abstract: Diesel and petrol causes many ecological problems and they are limited source of energy available to us. It was estimated that the world's supply of oil and gas will fall below the level required to meet the international demand, around 2025. A lot of efforts had been done by researchers to find the better solution for this noticeable situation. By either optimizing the previously used fuels or switching on to different alternative fuel (bio-diesel). Hydrogen is being explored as a fuel for IC engine. It has a potential to reduce our dependence to imported oil. Environmentally friendly, reduces the nitrogen oxides (NO_x), hydrocarbon and carbon monoxide during combustion. Rapid combustion speed, wide flammability limits and low minimum ignition energy decreases the cyclic variation inside the cylinder. High diffusivity of hydrogen allows proper air-fuel mixing, thus complete combustion and decrease in harmful emission gases.

Swirling combustion is one of the most effective ways to enhance the combustion process in engines. Use of Swirl phenomenon in the intake manifold allow the better mixing of fuel, although it reduces the volumetric efficiency but at the same time increases the combustion properties. Both the factor has a direct influence on power.

 International Conference of Advance Research and Innovation (ICARI-2015)

So here, we requires a need to optimize the intake manifold so that combustion and mixing properties increased and has a greater effect on power than reduced going charge in the cylinder. Author's idea is to make such an arrangement with the help of mechanics in the manifold so that it guides the air to produce swirling along with increase in velocity of cylinder's intake air. Swirling help in proper mixing and increase in the velocity will send more charge into the cylinder. Estimation of around 5-6% increase in power; coefficient of variation, thermal efficiency, and specific fuel consumption will have a positive effect of this proposed model.

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Amphibious Solar Vehicle with Smart GPS Control

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Abstract: There must be some limits to the ability of the earth to sustain a growing population. Fortunately, population models suggest that the world's population will probably level out at about two to three times the present numbers over the next hundred years. Now-a-days, dealers of natural resources like fuel, coal etc. are facing a hard time to keep pace with the increasing demand. At one hand, there are more cars or motor vehicles are dominating the transport medium, on the other hand these cars are being dominated by the fuel. As a result, the limited resources are being quashed by the producers and dealers to satisfy this need which is leading us to an uncertain future with having the scarcity of fuel and minerals. So, it is clear that present trends in energy consumption, especially oil, cannot be sustained much longer. The question is whether the earth's resources are sufficient to sustain that population at a high standard of living for all. In this the key issue is energy.

Therefore sunlight is now a day's considered to be a source of energy which is implemented in various applications. With the help of this technology we aim to make amphibian solar vehicle. An amphibian vehicle is a vehicle that is a means of transport viable on land as well as on water. Main component of this machine is solar panel, which collect energy, power tracker convert the energy, collected from the panel to the proper s/m voltage, batteries are use to store energy, Waterproof hull,. Motors to drive wheels. Amphibian wheels are used to provide efficient propulsion to move the vehicle. This system inbuilt with GPS and water proof hull which provide it full safety. Air cushions are used for emergency GPS help to traced location and can control the motion of vehicle

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Experimental Study of Inverse Temperature Characteristics of Hydrocarbon Blended Diesel Sprays in Constant Volume Combustion Chamber

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Abstract: In the present work an experimental study has been carried out inside the constant volume combustion chamber. The inverse temperature characteristics of ignition delays of diesel and certain hydrocarbon (n-pentane and n-hexane) blended diesel fuel sprays have been studied. The effects of hot surface temperatures (upto 450°C) and ambient cylinder air pressures (upto 25 bar) inside the combustion chamber were studied. Also the blending effects (10, 20, 30 & 40% by vol) of hydrocarbon fuels on diesel fuel were studied. Conical fuel sprays were developed using the pintle nozzle for fuel injection in combustion chamber. Optical method was used to measure ignition delays. It was found inverse temperature characteristics are similar for diesel and petroleum blended diesel sprays at high hot surface temperatures such as 450°C. Also present study shows that combustion characteristics are similar for the various fuel sprays and blending effects become minimal at higher hot surface temperatures. Also concentration effects mitigates at higher hot surface temperatures. The measured ignition delays match the values of large bore marine diesel engine's ignition delays at high hot surface temperatures.

Study of Best Practices and Challenges for Logistics Providers in India

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Abstract: In today's cut throat competition when organizations are competing for survival, firms need to focus more on their core competencies and deliver quick and efficient response to demands arising from the market. The firms usually practice outsourcing of various non-core activities like transportation, warehousing, order fulfillment, value added services, etc. to remain focused to their core areas. The outsourcing part is now transformed into fully integrated logistics solutions and well taken care by Logistics Service Providers (LSPs) by providing the benefits of reduced cost, timely delivery and increased efficiency of supply chain. India spent around 14 per cent of its GDP on logistics in 2014 and experts believe that India's logistics sector would grow at fast rate and expected to create worth of \$385 bn by 2015. Many industries like Automobile, Electronics, FMCG, Pharma and food processing apart from agricultural sector also take support from third party logistics providers (3PLs) for smoothening up their relationship with supply chain partners, optimizing their scarce resources and improving customer satisfaction in terms of timely and quality delivery. The objective of this paper is to highlight the best practices provided by LSPs to serve end users in the form of one stop solution comprising of bulk procurement, accurate order processing to inbound/outbound transportation, efficient warehousing operations, fleet management, speedy on-time delivery services, etc. This paper also aims to identify the opportunities and challenges which come across logistics providers. Increased impact of globalization, wide use of IT, expansion of business through e-commerce, and logistics alliances can be upcoming opportunities for further enhancing the scope. Some challenges like inadequate and inefficient infrastructure, behavioral complexities, rising competition and unrealistic expectations of end users, need to be overcome for betterment of logistics operations.

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Selection of Best Dental Chair for Dental Clinic Using Trapezoidal Fuzzy Multiple Criteria Decision Making Model with Entropy Weights

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Abstract: In the present communication, we have implemented the concept of Intuitionistic Trapezoidal Fuzzy Numbers (ITFNs) to the study of Multiple Criteria Decision Making (MCDM) problem for evaluating the best company whose information take the form of ITFNs. We propose an algorithm for ITF-MCDM problem where the weights of the involved attributes are supposed to be completely unknown. These weights have been calculated on the basis of the decision maker's qualitative opinion to the attributes with the help of pre-defined linguistic variables and an entropy measure. Finally, the ranking of the companies has been determined by calculating the hamming distance between the ideal alternative and all the available alternatives. Selecting dental equipment is one of the most important decisions you'll make for your practice. This paper presents the facts you need to efficiently and wisely navigate your way through the equipment buying process.

Wind Energy Conversion Systems - A Review

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Abstract: Wind energy is favored as an alternative to fossil fuels as it is plentiful, renewable, widely distributed, and produces lower greenhouse gas emissions. The widespread distribution of suitable wind patterns and the declining cost of wind energy production make wind energy a viable alternative. Although wind energy exploitation dates back five thousand years ago, contemporary societies are based almost exclusively on fossil fuels for covering their electrical energy needs. During the last thirty years, securities of energy supply and environmental issues have reheated the interest for wind energy applications. This paper presents a review on wind energy conversion system – wind turbines. It brings out the historical developments carried through ancient times to the present world scenario. Different types of wind turbines, their parts sub types have been reviewed. Classification of wind turbines according to the capacity (rated power), technological advancements have been listed here.

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Performance Evaluation of a Cogeneration Based Fertilizer Plant: A Case Study

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Abstract: This paper attempts to show the performance evaluation of natural gas-fired cogeneration based fertilizer plant in India. The fertilizer industry is an energy intensive industry consuming about 29 GJ/MT of Urea Produced. It has observed that large amount of input energy is being lost as the waste heat through the flue gases, if it is not substantially utilized. A steam cycle is used to recover the heat from the flue gases using a waste heat recovery steam generator. A thorough study has been carried out to show the performance evaluation of IIFCO AONLA, Bareilly (U.P.) fertilizer plant. The key performance parameters for present study have been considered as thermal efficiency and heat rate. Their values are calculated for different sections of the fertilizer plant. On the basis of analysis performed in the present study, thermal efficiency is calculated by taking cogeneration into account and without considering it. Finally results have shown that overall thermal efficiency of the plant without considering Cogeneration is 20.162 % while overall thermal efficiency of the Plant when considering Cogeneration is 78.552 %. Therefore, Cogeneration may also be called as thermodynamically efficient utilization of fuel.

A Cycle Simulation Model for Bio-Fueled Conventional Engine

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Abstract: In recent years, much research has been carried out to find suitable alternative fuel to petroleum products. The use of renewable fuels like ethanol, biogas and biodiesel in diesel engines is significant in this context. Diesel engines are mainly used in industrial, transport and agricultural applications due to their high efficiency and reliability. However, they suffer from high smoke and nitrogen oxide (NOx) emissions. The more stringent government regulations on exhaust emission and the fast depletion of world-wide petroleum reserves provide a strong encouragement to the search for alternative fuels. Biodiesel is oxygenated, biodegradable, non-toxic and environmentally friendly. Experimental analysis of the engine with various biodiesel and its blends requires much effort and time. Hence, a theoretical model is developed to analyze the performance characteristics of the compression ignition engine fueled by biodiesel and its blends.

Performance Enhancement in Working of Single Slope Solar Still Using Different Modifications

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Abstract: As the population is increasing, fresh water resources are under heavy pressure. A very small fraction, about 3 percent of the available water resources is available as fresh water. Drinking water shortage is expected to become one of the biggest problems for humanity. Many developing countries like India have given topmost priority to fresh water supply in their rural development plans. Distillation is universal method by which all types of contaminants at any concentration level can be removed. Solar distillation is a method which is energy independent and energy is available free of cost in form of solar radiation. The categorization of solar stills is on the basis of Passive and Active solar stills, basic difference being in case of active solar stills is that in the later the temperature difference between the evaporative and condensing surfaces are increased by feeding the additional thermal energy from the flat plate collector in to the bottom of solar still. The objective of the work is to fabricate a single slope solar still and study the effects of various process parameters on the performance of solar still, economic viability, cost of distillate, energy balance of solar still and comparison of experimental results for solar still on periodic (hourly, daily & monthly) basis.

Machining of Unidirectional Glass Fibre Reinforced Polymers (UD-GFRP) Composites -A Review

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Abstract: This present a past research on machining of UD-GFRP composites, their properties, application and mainly the machining problems faced out by the manufactures. Fiber glass reinforced plastic, commonly known as fiberglass, was developed commercially during World War II; fiberglass was developed as a replacement for the molded plywood used in aircraft radomes (fiberglass being transparent to microwaves). In 21st century, GFRP have been successfully substituted the traditional engineering materials and widely used in transportation, power generation, offshore and marine, aircraft, spacecraft structures require high specific stiffness and strength (Glass reinforced polymers) As there are many properties in reinforced composites but machining of GFRP is significantly different from conventional metals because GFRP materials are isotropic and non-homogeneity in nature which consist of distinctly different phases, so that their machining operation is characterized by uncontrolled intermittent fibre fracture causing oscillating cutting forces and critical bending stresses, poor surface finish in terms of fuzzing due to diverse/crushed fibre or resin pull out. It is not easy for a manufacturer to obtain quantitative and consistent measures but it has been mainly assessed by three parameters including tool wear or tool life, cutting forces or power consumption and better surface finish. Therefore good machinability means less tool wear, low cutting forces and good surface finish. Machinability may also be assessed by the type of chips produced and the cutting temperatures since there is a correlation between the types of chip produced and surface finish. On the other hand, cutting temperatures, cutting forces and surface finish are directly or indirectly related to tool wear. Therefore, tool life tests are most commonly used to assess machinability. In GFRP, Minimizing the surface roughness which highly affects the quality of the products is critical challenge for the industry and academia alike. Factors such cutting parameters, vibration, tool wear and fiber orientation end tool geometries/materials should be taken very carefully during machining operations to obtain favorable environment for best quality as well as productivity.

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Simulated Annealing for Vehicle Routing Problem

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Abstract: This paper is motivated by the growing concern of companies, governments and consumers in the area of Reverse Logistics. One of the current challenges in reverse logistics optimization is the high transportation costs and the difficulty in devising an efficient route for transportation. The aim is to develop an efficient method that optimizes the route used by vehicles when serving a group of users, commonly known as Vehicle Routing Problem (VRP). The VRP is one of the most challenging combinatorial optimization problems and belongs to the category of non-polynomial (NP)-hard problems. We have implemented algorithms, namely, simulated annealing (SA) and best-value algorithm (BVA) for this purpose.

Supply Chain Management in Automotive Industries

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Abstract: With the ever growing demand in automotive industries, a plethora of industries have forayed their way into the industry without even noticing the issues that have come up in the recent past. This has been evident with the plentiful research papers and literary reviews written to tackle and solve these issues. The aim of this paper is to analyze, summarize the environmental and economic problems in this sector. The paper initially studies the previous 41 papers written in this field in the past. Then according to the results, the focus is shifted to the field requiring further study to improve the past results and simultaneously tackle the upcoming issues. This paper concludes that an integrated study of green and sustainable is the need of the hour. The paper also suggest the use and development of an alternative fuel (TPO) which will not only have environmental benefits but also reduces the dependence on conventional fuels.

Current Emerging Trends in Optimization of Cutting Parameters in CNC Turning: A Review

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Abstract: The task of machining industries is chiefly concentrated on achieving high quality, in term of part/component surface finish, accuracy, increase the product life and high production rate with a more eco-friendly impact. It is necessary to change and upgrade existing technology and develop product which are fairly priced. Hence, it is necessary to control the process parameter in any machining. The typical governable machining parameters for the CNC lathe machines are speed, feed, depth of cut which affect desired output like surface roughness, Metal Removal rate etc. These parameters can be optimized for certain response parameters by optimization techniques like Taguchi, Response surface methodology (RSM) etc. This paper presents a review on emerging trends in optimization of process parameters in CNC Turning.

Investigation of Tribological Behavior of Pure Aluminium and Aluminium Alloy

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Abstract: Aluminium alloys are lighter so have extensive used in human life activities. According the application having relative motion between two elements, the range of physical and mechanical properties that can be induced in Al-alloys is remarkable. Addition of copper and silicon to Al helps to increase the strength and wear resistance of alloy. Al-Si-Cu alloys have better tribological properties, hence extensively used in industries. In the present research work, an useful attempt has been made to analyze the tribological properties of pure Aluminium and Aluminium alloy samples after casting as a pin. Wear tests were conducted using a pin-on-disc wear test rig as per ASTM-G99. The operational parameters were normal load and sliding velocity of pin with respect to rotating disk at room temperature. The medium used were dry and wet lubrication. The amount of wear has been reduced significantly in Aluminium alloy comparative to pure Aluminium. Dry condition testing of samples showed a lot of noise and relatively more amount of wear for both pure Aluminium and Aluminium alloy. The coefficient of friction for Aluminium alloy in wet condition was approximately constant up to the applied load of 2kg and then decreased with further application of applied load while coefficient of friction for pure Aluminium was increasing continuously with the load.

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Solar Power Air Conditioner

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Abstract: Summer is the time when you wished you had an Air Conditioner. But, you would rather detest the idea because of the staggering electricity bills you would get once you start using the AC. And it would be a miracle if you could use an AC without paying those hefty electricity bills. In that case, it seems a miracle has just happened! How about utilizing the free energy of the sun to power up your AC?

The hottest months usually, happens to be also the sunniest. You can use the scorching summer heat to actually remove the heat from your room with the help Photovoltaics (PVs) to power your AC. Photovoltaics are collection of cells which have photovoltaic material that makes use solar radiation to develop direct current electricity. For achieving the best performance the PVs are connected to a solar tracker so as to align themselves towards the sun to receive the maximum amount of solar radiation. The use of a solar tracker would improve the performance of the PVs by whopping 50% in summer.

The use of concentrated solar power systems (CSP) further enhances the utilization of solar power by making use of mirrors to concentrate solar energy onto a photovoltaic cell. Since CSP systems are bigger in construction and expensive they are seldom used to generate power for an air conditioner.

Study on Application of Lean Manufacturing Tools for Performance Improvement

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Abstract: Lean Manufacturing is a philosophy of operations management that provides a set of tools and techniques to analyze the manufacturing of a product from its inception to the customer. This approach focuses on reducing the wastes at various points without affecting its quality and performance through the application of various tools. This paper attempts to study the case of a large steel mill. This paper lists out the various processes and the different stages of Manufacture of Steel. After this, the methodology used for the Value Stream Mapping (VSM) has been listed. Finally, the Current State Map of Steel Manufacturing Process has been drawn and the map has been analyzed in detail.

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An Introduction to Tensegrity Structures

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Abstract: Tensegrity structures are a new class of structures which are light weight, deployable, energy efficient, and highly controllable. A tensegrity structure is a paradigm of continuous pull (tension) and discontinuous push (compression). These structures essentially consist of struts (bars) and strings attached to the end of the bars, which are all loaded axially and do not receive bending moments. The objective of this review paper is to understand the basic principles on which a tensegrity system is based. For this purpose, the definitions given by various researchers in the field of tensegrity are introduced. Then, characteristics, advantages and disadvantages of these structures are discussed in detail, followed by a review of few simple tensegrity structures. Various applications of tensegrity structures in the fields of architecture, engineering and deployable structures, robotics, and biomechanics are also introduced.

Mechanical Behavior and Microstructure of AL-2014/SiC/Fly-Ash Hybrid Composites

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Abstract: This paper presents the mechanical behavior of Al-2014/SiC/Fly-ash hybrid composites an average particle size (APS) of 25 μm . Five samples of hybrid composite with different combination of fly-ash and SiC have been prepared by stir Casting method. Mechanical properties (tensile strength, hardness, and impact strength) and microstructure of all five samples were analysed. The results revealed that sample Al-2014/15%SiC/5%Fly-ash shows best result among all the selected compositions/ samples. Microstructure presents that the reinforcement are uniformly distributed in the matrix. Density and specific strength

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Scheduling of Flexible Manufacturing Systems using Fuzzy Logic: A Review

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Abstract: The task of scheduling in flexible manufacturing systems (FMS) is more complex and problematic than traditional manufacturing systems. To accomplish great performance for FMS, a good scheduling system should make an accurate decision at an accurate time according to system situations. Fuzzy logic methodologies easily deal with indeterminate and incomplete information. Human expert's knowledge can be effortlessly coded into fuzzy rules. Because of these reasons, fuzzy logic methodologies are very operational for scheduling of flexible manufacturing systems. This work presents an evaluation on use of fuzzy logic approaches in scheduling of flexible manufacturing systems. The shortcomings of fuzzy techniques can be easily dealt by hybrid models. This work also discusses the increased use of hybrid models in dealing with scheduling problems.

Tribological Analysis of Etched Mild Steel Surface

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Abstract: The technological age has complex machines used in the industries as well as in daily life. The problem of wear is likely to occur whenever there is relative motion between two mating surfaces resulting the dimensions of machine component are lost leading and finally failure of components. This causes hazardous effect on surfaces and breakdown of machine. Micro machined smooth and rough parts have high coefficient of friction in elasto hydrodynamic area. It requires micro level of roughness. It contains fluid which reduces friction. Through chemical etching the micro dimples are produced on the components which reduce the metal to metal contact and thus decreasing wear rate .In this research work hexagonal micro dimples have been produced on mild steel disc through chemical etching and subjected to tribological analysis through pin on disc test and found the significant improvement in the wear resistance. Wear test is performed by varying load and velocity of disc. The study shows that the wear rate first decreases and then increases. Coefficient of friction and friction force is determined and appropriate graph is obtained during relative motion between mating surfaces

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Investigation of Wear Behavior of Aluminium Alloy and Comparison with Pure Aluminium

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Abstract: In modern age of technology Aluminium alloys have extensive application in industries. The range of physical properties that can be imparted to them is remarkable. Addition of Silicon and copper to Aluminium helps to increase their strength and wear resistance. Al-Si-Cu alloys can be extensively used in industrial applications due to better tribological properties. In the present work, an attempt has been made to study the tribological properties of Aluminium as-cast alloy sample i.e. Al alloy and pure Aluminium. Wear tests were conducted using a pin-on-disc wear test rig as per ASTM specification G99. The operational parameters were normal load and sliding velocity of pin with respect to rotating disk at room temperature. The medium used were dry and wet lubrication. The amount of wear has been reduced significantly in aluminium alloy comparative to pure aluminium. Dry condition testing of samples showed a lot of noise and relatively more amount of wear for both aluminium and aluminiumalloy.The coefficient of friction for aluminium alloy in wet condition was approximately constant up to the load the applied load of 2kg and then decreased with further application of load while coefficient of friction for pure aluminium was increasing continuously with the load.

Mechanical Features of Bones as Biomaterial

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Abstract: Most often Engineering considerations, analysis and applications deal with engineering materials which belong to category of non-living things, like metallic, nonmetallic and other such materials. But with diverse applications of the concepts of mechanical engineering, its importance has grown for the study of various mechanical aspects of other materials used in those fields. One such application belongs to the field of bio origin, which deals with Biomaterials, where biomaterial withstands stress caused by certain loading over it. One such important biomaterial is Bone, which along with performing various essential functions like shielding body's vital organs from trauma, serving as levers for muscles to contract against, also serves several other functions, which are important from mechanical engineering point of view.

Apart from the biological feature and functionality, bone happens to be one of the most interesting biomaterials from mechanical point of view. Material property wise Bone may be recognized and termed as hard tissue, mineralized tissue, and calcified tissue, while describing it from structural point of view. Bone sustains mechanical stresses primarily by changing its size and shape, which are major effects to study its resistance to failure or breakage of the bone under different type of loading conditions depending upon the activity done. Under the situation, it becomes very relevant to study various mechanical properties and behavior of the bone, like strength, toughness, hardness, fracture and fatigue etc. In this work a study has been made on some mechanical properties of bone, and it can be said based on the study that conclusions may lead to improvise the current working pattern and postures, resulting in enhanced performance as well as reducing the number of fractures.

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Bio Fibers: as Natural and Lighter Mechanical Elements

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Abstract: In the field of mechanical engineering we make use of several engineering materials based on its mechanical properties. Mostly these materials belong to non living category, like metallic/nonmetallic etc, which are conventionally extracted, processed and ultimately the components are manufactured through various processes. Dealing at these several stages, one need to be very careful in order to ensure proper completion of each stage successfully. But while looking around we get some materials in its natural form having mechanical capability. May be these natural substances having limited mechanical capabilities, but even then these may be identified as having potential of replacing with conventional engineering materials. Also, conventionally, several processes are performed consuming some kind of energy that too by adopting some unnatural procedure.

Looking as alternative, one such material of bio origin, called biofibre, has been found suitable, from mechanical perspective too. Although having limited mechanical capacity, but it can be used as materials options in lighter applications, as well as in comparatively heavier applications using it in form of composite materials. So it becomes very relevant to study various mechanical prospects of biofibre. In this work a study has been done on some biofibres with mechanical capabilities, and a comparison has been made among them. Based on the conclusions made further role of biofibres suitable to mechanical engineering applications may be identified, in the field of automobiles, biomedical, packaging as well as in other engineering field too.

Mechatronic System Modeling and Analysis of Quad Rotor UAV

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Abstract: Quad rotor is a small Aerial Vehicle, which is lifted as well as propelled by four motors and control of vehicle is achieved by altering the pitch and rotation rate of one or more rotor discs. In comparison to a classical helicopter, Quad rotor is simple and easy to make, because of the absence of moving parts and the rotors axis being fixed. For achieving the control of such a highly unstable open-loop system, as the rotational speed of each rotor needs to be independently controlled, which makes it a challenging engineering problem. By virtue of advances made in the recent years, in MEMS (Micro-Electromechanical Systems), electrical energy accumulators, actuators and smaller integrated micro-controlled boards, number of studies and researches have grown in the field of UAVs and autonomous aerial robots. One such UAV is Quadrotor, over which research and development has been carried out, not only by universities and research institutions for civilian applications but also for military purposes. It is due to the inherent characteristics of UAV (Quad rotor), such as high manoeuvring ability at low translational speeds and in small volumes while being able to carry significant payload, thus making them especially adequate for aerial surveillance and monitoring tasks.

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Surface Characteristics of Polymers in Machining Processes

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Abstract: In recent years it has been observed that plastics have found applications in manufacturing of electronic, optical and precision equipment. This increase in use can be attributed to their higher dimensional accuracy and better surface finish properties. Many researchers have carried out experiments to study the effect of various machining parameters on the surface characteristics of precision turned polymers. The more frequently used parameters have been feed rate, depth of cut and cutting speeds. Moreover, this study hopes to find synergies and co-relations between these parameters and various other parameters across different plastic materials, as wide variety and grade of polymers available have been a dominant factor contributing to the lack of understanding as far as the machinability of plastics is concerned. Also, the machining practices followed in the industry have been found by trial and error, and very limited research has gone into developing equipment on methods that can be specifically employed in machining plastics. The aim of this study is to propose machining processes as methods of manufacturing rather than restricting them to finishing processes after molding to achieve these ends.

Developing Courses under Technical Education Using Multiple Intelligence Theory

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Abstract: In the world of globalization, heterogeneity in a group or class is a reality as well as challenge, and also requires due attention in planning of all the related activities in academic too. It is equally applicable at the level of developing a course also, and requires due consideration to several relevant aspects of heterogeneity of a class. At the same time, there are several ways or modes of learning, which has been found to be associated with various theories of intelligence. In 1983, Howard Gardner has proposed one such theory on Multiple Intelligence. As per the theory, all human beings are born with different sets of intelligences and tend to excel in one area over another. While individuals used to process information in different ways, each individual can be observed with variation in the degree of skill possessed through each of these multiple intelligences, which exhibits distinct characteristics. This paper studies the application of the theory of multiple intelligences, for developing the courses under technical education at various levels. The prospects of the application can ensure further, that its implementation will be very purposeful and through this the learning ability of the diverse mass of students will be triggered, by one or the other mode of Multiple intelligence .

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Alternative Energy Technologies: The Unconventional Dependable

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Abstract: AETs are imperative to mitigate the twin crisis of environmental degradation and simultaneous fossil fuel depletion, there are wide concerns about GHG emissions which have paved ways for the development and deployment of energy technologies that do not use fossil fuels. These technologies would provide tangible benefits in terms of fossil-fuel costs, which are likely to increase as restrictions on GHG emissions are imposed. However, a number of challenges need to be overcome prior to market positioning, and the commercialization of alternative energy technologies which require a staged approach given price and technical risk. An unconventional new alternative technology is one possibility, where one could undertake cost-reducing production enhancement measures as an intermediate step prior to deployment. This paper explores the factors affecting the use of AETs in automobiles further includes in depth analysis and results obtained from real time experiments conducted on AET based automobiles. This paper empirically examines the preferences for alternative energy sources or propulsion technologies in vehicles. In order to simulate a realistic future purchase situation, the following alternative technologies i.e. hybrid, gas, biofuel, hydrogen, and electric vehicles were considered besides common gasoline and diesel vehicles. There is a need for common policy instruments such as the promotion of research and development, taxation, or subsidization in the field of electro mobility could be supplemented by policies to increase the social acceptance of alternative vehicle types.

Noise Prediction in Radial Compressor Using CFD

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Abstract: With the advancement in computation techniques and super computers, it is possible to simulate flow noise involving nonlinear governing equation. The present work deals with the prediction of radial compressor noise along with various noise generation mechanism and mesh designing using Ansys. The chosen radial compressor has a minimum shroud diameter of 75 mm and a maximum shroud diameter of 125 mm. The 3d mesh of the radial compressor is imported to FLUENT and acoustic analysis is carried out. The plotted result shows that with increase in the number of blades of the radial compressor, sound pressure level (dB) (SPL) increases. The receiver location plays an important role in SPL estimation. The developed analysis procedure for computation of SPL can also be used of any mechanical component involving fluid flow.

Optimization of Machining Parameters for Turning Mild Steel using Design of Experiment

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Abstract: In this paper, optimized value of cutting parameters (i.e. feed rate, cutting speed and depth of cut) and also the dominating parameter which affects the roughness of a surface produced during the turning process for mild steel are examined. Surface roughness is the quality characteristic; better surface finish affects the efficiency, performance, maintenance cost for any kinematic mechanism. So, surface roughness is very important quality characteristic. Mathematical tools taguchi method and ANNOVA (Analysis of variance) are employed to investigate the optimized value of cutting parameters for high grade of surface finish. Feed rate and cutting speed are identified as the most influential cutting parameters on surface roughness.

Modelling and Optimization of Machining Parameters in Turning of H13 Tool Steel Using Response Surface Methodology-Desirability Function Approach

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Abstract: In the present study, an attempt has been made to investigate the effect of machining parameters (cutting speed, feed rate, depth of cut and tool nose radius) on material removal rate and surface roughness in finish hard turning of H13 tool steel using carbide tool. The machining experiments were conducted based on response surface methodology (RSM) using face centered central composite design. A comprehensive analysis of variance (ANOVA) was used to fully identify the most influential parameters, and the adequacy of both fitted second order regression models were checked. 3D response surfaces and 2D contour plots were analyzed to completely observe the impact of combinatory different important interactive factors on the machinability behaviour under different turning conditions. The MRR and SR increase by increasing the cutting speed, feed rate and depth of cut. The depth of cut and feed rate are the most influential factors for increasing the MRR and SR respectively. Mathematical models for MRR and SR were developed by using Design Expert-9 software. Finally, a multi-objective optimization technique based on the use of desirability function (DF) technique was then applied to find optimal combinations of input machining parameters capable of producing the highest possible amount of MRR and lowest amounts of SR within process domain. The obtained predicted optimal results were then verified experimentally to compute confirmation errors. The values of relative validation errors, all being found to be quite satisfactory, 5.29% for MRR and 8.1% for SR, proves the efficacy and reliability of suggested approach.

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Experimental Investigations for Co-Efficient of Friction to the Brass & M.S. Pins on ETCHED M.S. Plates

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Abstract: Friction and wear occur whenever there is relative motion between two mating surfaces and consume power as a loss. Sometimes it causes failure of the system. Lubrication plays important role in reducing the friction and stabilize the concern. There are different regimes of lubrication i.e. boundary, mixed, elastohydrodynamic and hydrodynamic.

Surface texturing is an emerging effective method for improving the tribological performance of tribo materials with lubricating oil. Experiment has been carried out on Pin on disc set up as per ASTM G99. Different variables factors were used for evaluation of co-efficient of friction i.e. load, speed and different regimes of lubrication. Plain and micro square dimpled plates of 420 micro meter edge and depth 200 micrometer have been taken for the tribological analysis. The texturing of dimples was produced with the help of chemical etching process. The coefficient of friction decreases with speed and load to a certain limit in fully flooded regime and have lesser value than plain plate. So texturing can be apply at various interfaces that have tribo-pair.

Total Cross Flow (TCF) Hydrostatic Journal Bearing: A Review

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Abstract: Hydrostatic bearings are used extensively in machine tool application due to their high load carrying capacity, no stick-slip, very low friction at low or zero speed, high stiffness and damping characteristics. If the features of circumferential grooved land and external return flow system incorporate in the conventional Hydrostatic bearing design, it turns to a new bearing design that is Total Cross Flow (TCF design = Conventional design + Circumferential grooved land + External return flow system) hydrostatic bearing. This new externally pressurized bearing overcomes most of the side effect of conventional journal bearing (CJB) like undesirable hydrodynamic effect associated with the oil turbulence and critical rise in temperature. TCF bearing are also consider suitable for high speed application along with good damping and stiffness characteristic with low temperature rise. Reduce drag power loss, fast temperature stabilization, and stability at high rotational speed are the other meritorious properties of TCF bearing. A detailed summary of literature review on TCF bearing covering different performance characteristics like total power loss, recesses pressure, squeeze load, temperature distribution, fluid flow, damping and stiffness coefficients are discussed and tabulated. It is observed through literature review that most of the studies on TCF journal bearing are experimental except analytical study made by Kumar et al. [7] and it is emphasized to carry out analytical and modeling work to validate or to analyze different features and aspects related to bearing configuration, lubricant properties, and type of restrictors etc.

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Sustainability Computation of Six Ecofriendly Refrigerants Using Energy and Exergy Analysis in the Two-Stage Vapour Compression Refrigeration System with and without Super Heating and Subcooling Effects

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Abstract: In the vapour compression cycle, vapour is compressed to a super heated fluid, then cooled and condensed at constant pressure. The refrigerant is then irreversibility throttled at a constant enthalpy process to a lower pressure, producing a mixture of liquid and vapour. Finally liquid is evaporated at constant pressure. The second law analysis on multi-stage vapour compression refrigeration system is commonly used because it gives the idea for enhancement in coefficient of performance due to incorporation of multi-stage compression system. The Thermodynamic analysis also provides space for improvement in the existing system. The performance of a refrigeration system is evaluated in terms of first law efficiency (COP), Exergy destruction ratio (EDR) and Second law efficiency. This paper mainly deals with the comparison between two stages vapour compression refrigeration system with super heating and without super heating effect in evaporator and subcooling effect in condenser using six ecofriendly refrigerants using entropy generation principle. The numerical computation has been carried out. It was observed that water intercooler reduces the load on the flash intercooler gives a smaller flow rate of refrigerant evaporates to intercool the refrigerant causing reduced mass flow rate of refrigerant in the high pressure compressor which results the reduction in the work requirement in the high pressure compressor enhances first law efficiency in terms of improvement in COP. The sustainability index for ecofriendly refrigerant is also computed in this paper.

Research and developments in laser beam machining – A Review

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Abstract: Modern machining methods are also named as non-conventional machining methods. These methods form a group of processes which removes excess material by various techniques involving mechanical, thermal, electrical chemical energy or combination of these energies. There is no cutting of metal with the help of metallic tool having sharp cutting edge. As the world is advancing forth technically in the field of space research, missile and nuclear industry; very complicated and precise components having some special requirements are demanded by these industries. The conventional methods, in spite of recent advancements are inadequate to machine such materials from stand point of accuracy, precision and economic production. The metal like hastalloy, Nitra alloy, nimonics, composites and many harder to machine material are such that they can't be machined by conventional methods but require some special techniques. Different non conventional machining methods like Abrasive jet machining(AJM), laser beam machining, ultrasonic machining, electric discharge machining give a machining option for geometrically challenging and/or brittle material parts that are difficult to machine by conventional processes. In this paper a review related to papers on laser beam machining was discussed. Developments in the critical areas of the process of laser beam machining like machine tool technology, machining mechanism, hybrid machining, composites machining with challenges have been discussed. Different types of lasers like Nd:YAG, CO₂ lasers are used in manufacturing field like drilling and cutting of metallic and non metallic materials. Potential research issues have been explored for future work. Possible application areas have been identified.

Experimental Investigation to Improve Flame Stability in 250MW Tangential Firing

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Abstract: The objective of this study is experimental investigation of 250 MW coal based thermal power plant to predict the performance of tangential fired (TF) boiler and to determine the flow patterns of the gas and coal particles, with an emphasis on increasing the flame stability in combustion zone at low load conditions at which thermal plants are forced to operate owing to number of practical limitations in this region. The effects of four parameters that are experimentally investigated are Coal air velocity through burner, Burner outlet temperature, Burner tilt & Furnace draft. The experimental results show considerable increase in flame stability at low load conditions while operating at Coal air velocity of 16.71 m/sec, Burner outlet temperature of 70°C, furnace draft of -10mm WC and burner tilt of +20°. The work has been validated with the help of CFD code Fluent. The results obtained from the present work are directly relevant to coal-fired Utilities for not only demonstrating the effectiveness of computational fluid dynamics (CFD) based tools in combating operational issues but also provides an alternative to conventional remediation strategies.

Computation of Optimum Pressure in a Half Effect Water-Lithium Bromide Vapour Absorption Refrigeration System

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Abstract: In this research paper, energy and exergy analyses of water lithium bromide half effect vapour absorption refrigeration system has been carried out. Based on energy and exergy analysis the optimum intermediate pressure is computed corresponding to maximum values of coefficient of performance and exergetic efficiency under various operating conditions. It is found that the optimum intermediate pressure corresponding to maximum values of coefficient of performance and exergetic efficiency is same. The effects of low and high pressure generator temperatures, and evaporator temperature have been considered in computing optimum intermediate pressure. The maximum COP varies between 0.415 - 0.438 and maximum exergetic efficiency varies between 6.96-13.74%.

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Energy and Exergy Analysis of a Compression Absorption Refrigeration Systems

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Abstract: In this paper, the energy and exergy analysis of a compression absorption refrigeration system have been carried out. It has been found that the COP of this system is higher than the COP of the single effect Vapour Absorption refrigeration system. The exergetic efficiency however is similar to that of single effect system. This certifies that the second law is a important tool in analyzing cycles having different components and structures.

Mixed Ability Classes: Issues, Challenges and Possibilities

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Abstract: The practice of common collective learning has been quite conventional, and the basis as well as background of the learning has been adopted from some experiments, experience, implications or observations, which applies to classroom learning too. But the students in general, in any class happen to be in Mixed Ability Mode, which is a reality. Every student is unique in itself having difference in learning ability because of several reasons like personal, social, family or even cultural reasons. Due to this reason it is really challenging to pay equal attention and respond to individual needs of learning, as we deal with the students having different personalities, skills, interests and learning needs. It may be one alternative to form the groups of similar ability but some studies has shown that the achievements of students is not compromised in a heterogeneous setting; rather, the achievements of average and less able students proved to be significantly higher, when compared to their peers in the same-ability classes, whereas highly able students performed about the same.

Teachers having very little or no such experience, find teaching such classes very difficult and demanding task as it involves proper preparations and planning of lessons, which include a well diverse tasks, comprising of variety of learning styles, competence and desired abilities. The cause of difficulties in such classes may be due to differences in learning style, intelligence, cultural background, age, gender, personality, knowledge/learning ability/attitude towards language, mother tongue, knowledge of other languages, confidence, motivation, interests, and/or educational level etc. In this paper study has been done of some such issues which are very important for a teacher, who wants to ensure all the students to perform up to their best, and also in identifying the problems and dealing with them successfully.

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Extended PSR: A Lightweight Proactive Source Routing Protocol for Mobile Adhoc Networks

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Abstract: MANET is a self-organized and configurable toward oneself system without existing base. It comprises of a few mobile wireless nodes. In this paper, we present a novel Proactive Source Routing protocol that has a little communication overhead. The proposed work is an effective and enhanced light-weight proactive source routing protocol for MANETs that uses two basic algorithms for searching processes, called depth first search (DFS) and breadth first search (BFS) to find the way. Consolidating multiple trees at one time is computationally more effective; we decided to do that instantly in the wake of accepting a redesign from a neighbor.

To further we will diminish the span of the differential redesigns, when a node keeps up its routing tree as the system transforms, it tries to minimize adjustment of the tree. We analyze the arrangement of routing in MANET and assess its execution using Network Simulator-2 (NS-2) under diverse system parameters.

Simulation of Injector in Cold Spray Process by Fluent-6

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Abstract: The cold spray process is a modern coating process using high velocity and low process temperature particles for surface modification to improve the surface properties of the substrate, such as adhesion, wettability, corrosion resistance, or wear resistance. Coating may be applied as liquid, gases, or solid. In this process spray particles are accelerated the high velocity by a supersonic gas flow that is generated through only by convergent-divergent (CD) nozzle. Convergent-divergent nozzle could achieve the super-sonic velocity through the divergent section, but there is also some problem if the velocity is greater than the Mach number at the throat then the nozzle would be choked and no flow of air and particles through the nozzle. In this study, simulation and optimization of the cold spray nozzle and spray process has been done with the help of Modelling software. Cold spray nozzle geometry of (CD) nozzle drawn in GAMBIT and solved by the FLUENT solver. To solve the cold spray nozzle, pressure based solver is used because it is more relevant for the problem, for turbulence model Realizable k-ε flow model has used in this problem because this model is relatively new and differ from the standard k-ε model by two ways firstly it contain a new formulation for turbulence viscosity and secondly it has new transport equation for the dissipation rate. After that providing the operating and boundary condition at the inlet and outlet section of the (CD) nozzle, the discrete phase model is activated. Optimizations of CD nozzle is done at the group injection for the length 10mm, 20mm and 30mm after giving the all parameters and then validate the respective work.

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Thermodynamic Analysis of Vapour-absorption (H₂O- LiBr)- Compression Combined Refrigeration System Energized by Microgas- turbine

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Abstract: The current analysis comprises the configurations of combined refrigeration system which is integration of a vapour compression and vapour absorption system. The integrated system is energized by a microgas turbine to generate cooling at the low temperatures. The waste heat from the exhaust of microgas turbine is used to drive the vapour absorption system while the vapour compression system is directly powered by the small gas turbine. The compression system is at the low temperature stage while the absorption system is at high temperature stage boost the performance of compression system. A computational thermodynamic analysis of the combined system is carried out using mass energy governing equations. It has been concluded on the basis of result obtained that the performance of combined refrigeration systems is high and less energy consuming.

No Load and Load Test of Black Nickel Coated Solar Cooker without using Reflector in Surat, India and Validating against Indian Standards

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Abstract: Solar cooking is a form of outdoor cooking and is often used in situations where minimal fuel consumption is important, or the danger of accidental fires is high. Solar cookers are available in many variations, but the main type is concentrating solar cookers and box type solar cooker which is collector solar cooker. Parboiled cooker is developed for kitchen and community purpose. But it is costly as compared to box type solar cooker. The aim of this project is to design and develop a low cost box type solar cooker that can be used for cooking food for four persons. Black nickel coated MS plate has a very less value of emissivity which provides more energy for cooking. Use of this coated plate eliminates the need of reflector system and thus makes it to be much simpler. Further, for the cooking need of a family of a four person, the new model offers better performance in terms of reduced cooking time as compared to the standard BIS model. Encouraged through this performance, the cooking period for the major cities of India is predicted for the whole year with this new optimal solar cooker.

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Quality Assessment in Hospital: A Case Study

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Abstract: Health sector has become very important in present context of globalised markets. Many hospitals have come in market but most of them lack sufficient quality standards. As it is highly service sensitive sector, quality issues are very important. Most of frameworks used for hospital quality management exhibits shortcomings, terminology barriers and too much complexity. This study propose a simple and rigorous study specific to hospital, based on four entities (patients, activities, resources and effects) in order to measure the quality management systems with the help of a case study. The proposed study is compatible with other substantiated model, robust in coping and it provides flexibility to avoid a too unilateral approach. The evaluation study is based on responses from patients and visits to hospitals. The specific goals of this study were to reduce inappropriate hospital activities by fine-tuning patient logistics, increasing efficiency and providing more comfortable surroundings.

Overall while limitations and implementations challenges exist, the preliminary results suggest that hospital can also use these findings to their advantage, yielding sustainable improvement in patient satisfaction and better inter-departmental communication.

Building a Blue Print for Service Quality for Indian Small & Medium Manufacturing Enterprises

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Abstract: Along with the awakening to the domination of services in the World's economies, there is a growing emphasis in business practice on creating meaningful, memorable customer experiences. There are a number of models trying to capture and define "Service Quality". They each have their strength and weaknesses. However, the core definitions of service Quality is simple and consistent, that is, service quality is customers thinking that they are getting better service than expected associated with actual delivery, where expectation is the level of service the customer hopes to receive. Most of the academic literature have focused on "What" aspects relating to service quality, however, little explicit coverage has been found on "How" aspects relating to service quality because of underlying belief that services (s) have no tangible value (Vargo and Lusch, 2004). Despite the dominance of services in modern economies, and their rapid growth worldwide, it is surprising how little research and how few methods and techniques exist to address this unique challenge. Notably, the manufacturing industries have a long tradition of design for specification unlike services, which commonly lack concrete specifications for which process documentations and analysis tools have been in use for many years, for example, "flow charts", or "flow process charts", date back to at least 1921, when the legendary Frank Gilbreth gave a presentation titled "Process Charts-First Steps in Finding the One Best Way" at the annual meeting of the American Society of Mechanical Engineers (Graham, 2004). However, flowcharting and the various flowcharting tools have been useful in their own right, but limited in depicting distinguishing element of service operations (Sampson and Froehle, 2006). In this paper, we review the most popular flowcharting framework as applied to services as 'service blueprinting'.

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Current State of Plastic Recycling in India

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Abstract: Plastic waste is non-biodegradable and its disposal and recycling is one of the major problems faced by India. In developing nations like India, materialist infrastructure is still improving; plastic plays a big role in these infrastructure improvements but is one of the deadliest in the list of most hazardous modern day materials. The effect of plastic on the environment is hazardous and thus the government is trying to promote recycling of plastic waste into various day to day products. Moreover the government has passed various new regulations for the effective disposal and recycling of plastic waste. Though there are various ways of recycling practiced in our country, most of them are haphazard and unplanned and thus their impact is not that powerful. We are sitting on a plastic bomb and plastic waste management is the need of the hour. In this paper we have studied and discussed about the various regulations set up by the government to curb this menace, the various hazards of plastic wastes on our surroundings and the current state of plastic recycling in India and what lies in the future for India.

Age Synthesis and Assessment VIA Face Recognition

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Abstract: One of the challenges in automatic face recognition is to achieve temporal invariance. In other words, the goal is to come up with a representation and matching scheme that is robust to changes due to facial aging. Facial aging is a complex process that affects both the 3D shape of the face and its texture (e.g., wrinkles). These shape and texture changes degrade the performance of automatic face recognition systems. However, facial aging has not received substantial attention compared to other facial variations due to pose, lighting, and expression. Age estimation is defined to label a face image automatically with the exact age (year) or the age group (year range) of the individual face. Because of their particularity and complexity, both problems are attractive yet challenging to computer-based application system designers. Large efforts from both academia and industry have been devoted in the last a few decades. In this paper, we survey the complete state-of-the-art techniques in the face image-based age synthesis and assessment topics. Existing models, popular algorithms, system performances, technical difficulties, popular face aging databases, evaluation protocols, and promising future directions are also provided with systematic discussions.

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Modular Software model checking for Peer to Peer application

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Abstract: Model checking has been demonstrated as powerful at recognizing discreet bugs in real distributed framework implementations. This research work presents amplified cache-based model checking methodology to conquer the shortcomings of existing model. This methodology is applicable for peer-to-peer (P2P) applications, which keep up numerous links at once, and where the request of messages normally influences their conduct.

This paper explores the issue for part based software frameworks from four perspectives. In the first place, the entire range of QoS qualities is characterized. Second, the logical and physical fundamentals for QoS qualities are analyzed and solutions to accomplish them are proposed. Third, previous work is grouped by QoS attributes and after that acknowledged by unique reconfiguration methods. Fourth, the FIFO demanding of request is assured while reconfiguration. The proposed work assured that the characterized QoS qualities can be completely accomplished under some satisfactory stipulations.

Comparison of Different Detection Techniques Based on Enhanced Double Weight Code in Optical Code Division Multiple Access System - Review Paper

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Abstract: OCDMA is a scheme in which the Radio Frequency Code Division Multiple Access concepts are used for the communication through optical fiber and hence the large bandwidth of optical fiber channel can be exploited along with other advantages of optical fiber communication. OCDMA is a technique which allows many users to access the optical network simultaneously and asynchronously on the same frequency band by allocating the unique code to each user. And hence Optical code-division multiple-access (OCDMA) has been recently proposed as an alternative to frequency and time based multiple, and multiplexing methods for next generation high speed optical fiber networks.

With the use of spectral coding the multi user interference (MUI) can be completely removed. Here Enhance Double Weight (EDW) coding is used as a signature address in designing the system because this code can accommodate more number of simultaneous users under considerable standard Bit-Error-Rate (e.g. $\leq 10^{-9}$). By using EDW codes for OCDMA system in subtraction techniques multi users interference can be suppressed and bit-error-rate performance is increased with optimum transmit power. EDW (Enhanced Double Weight) code based OCDMA is analyzed here. Here the review of some detection techniques, such as direct detection, complimentary detection, AND detection and NAND detection is taken out. The simulations are carried out using opti-system. The analysis has revealed that NAND subtraction detection technique exhibits better results.

Database Security Measurements Issues in Adhoc Network

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Abstract: Now-a-days database security at various level of internet applications and mobile applications related to social networking domain like Facebook and this has become key issue to protect recorded data from threats, unauthorized use, data loss, hackers, deletion, replication, unauthorized modification and false server. As in future when we will develop algorithms for mining the facts from these existing databases on web servers the complex nature of these databases may create the security measures more complex to manage and control. Data is more insecure and vulnerable on network and web based distribution. The Probability of loss of data becomes increase if security measurement is not used at various level of warehouse designing and use of data. The paper discusses the related issues of security in web mining from data warehouse created by several web oriented database on various levels, to improve effectiveness of mining algorithms.

Designing Issues for E-LEARNING Modules in Cloud Platform

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Abstract: E-Learning is the topic related to the virtualized distance learning by means of electronic communication mechanisms, specifically the Internet. The need for education is increasing constantly. The development and improvement of the e-learning solutions is necessary. Also, the e-learning systems need to keep the pace with the technology, so the new direction is to use cloud computing. Cloud computing is highly scalable and creates virtualized resources that can be made available to users. Cloud computing will have a significant impact on the educational environment in the future. In this paper, we give an overview of the current state of Cloud Computing. We provide details of the most common infrastructures for e-learning, and finally we present some challenges of e-learning approaches for Cloud Computing.

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Data Collection Method to Improve Energy Efficiency in Wireless Sensor Network

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Abstract: Wireless Sensor Networks (WSNs) are generally self-organized wireless ad hoc networks which incorporate a huge number of sensor nodes which are resource constraint. Among the tasks of WSN, one most essential task is to collect the data and transmits the gathered data to a distant base station (BS). The effectiveness of WSNs can be calculated in terms of network lifetime. Data collection is a frequent operation but analytical and critical operation in many WSN's application. To prolong network lifetime innovative technique that can improve energy efficiency are highly required. This paper presents a survey for designing Energy Efficient Data Collection Methods used for prolonging network lifetime in Wireless Sensor Network (WSN). The study highlights the importance of different Data conditions for various purposes like emergency response, medical monitoring, military applications, surveillance in volcanic or remote regions, etc. Different Data Collection methods like data aggregation clusters, data aggregation trees, network coding, correlation dominating set, etc. are considered in detail in this study. Furthermore a comparison of different Data Collection Method based on the network lifetime, energy efficiency, complexity of the algorithm, transmission cost and fusion cost is done.

Challenge in Route Discovery process of Dynamically Arranged Multitier Protocol in Wireless Network

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Abstract: In this paper we find the route discovery medium from wireless networks. Routing a packet from a sender to a receiver in an adhoc wireless sensor network, in which the nodes are open to move arbitrarily and organize themselves. Here we discovered a correct path for transmission of data according to route discovery problem. The main thing of the challenge is that in these types of networks there are no base stations so that the nodes themselves performs also functions such as switches and forwarding information to their receiver while coping with the dynamically changing network topology. A route between the sender and the receiver is available as soon as possible because each node contains routing tables which provide the information about the next node on the route. Routing table's management requires that every node to exchange routing tables with its neighborhood whenever a topology changed is identified then re-generates the routes based on the updated information. Different Protocols are defined in which a route-discovery phase follow the transmission of a data. In addition to incurring delay due to the route discovery process there is no assurance that the route discovered is functional because of node mobility. In these protocols, the information on the route between sender and receiver is provided in terms of the network topology that means the route is provided by as a sequence of nodes. In this paper we find the route discovery with dynamically adhoc wireless networks because every route transmits the data according to path.

Protagonist of Visual Tracking in 3D Internet: A Case Study

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Abstract: In past years we used to retrieve information in static form using 2D technique. This technique displayed information as it is written in static form or drawn in a book. Still we are using similar things, when we just have some written information, related pictures with visual effects, which may or may not be clear we can get some videos as well. This technology is coming as a tradition on internet through years. So, this trained need a change as our technology is becoming better day by day. Here, we will know about the future of internet i.e. 3D internet. We can say it is just like giving 3D effect to the content of the web pages. This will give our websites a new look. And will also boost the interest of the user. Suppose we are doing online shopping. We have pictures of some items and cost written on it. But do we actually know anything about the product. Imagine if there is an entirely virtual environment around it to have actual feeling of the products. It is as simple as dreaming about the product we are hoping for. Now, my report presents the system of identification in the above given atmosphere. Identification does not mean only about security for various things we will also know where and when it is necessary to have identification.

Secure Key Exchange in Diffie Hellman Key Exchange Algorithm

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Abstract: Jini is a set of specifications that enables services to discover each other on a network and that provides a framework that allows those services to participate in certain types of operations. For an instance, take a Jini-enabled laptop into a Jini-enabled conference room and the laptop automatically be able to find and use the services of the conference room such as the laptop will automatically find the printer inside the room, seamlessly download any drivers required by the printer and will send its output to the printer. But Jini is not about hardware and devices. Jini is all about services.

Thus Jini not only allows hardware and applications to interact but also allows this interaction to happen in a dynamic, robust way. Jini software also gives network devices self-configuration and self-management capabilities. It lets devices communicate immediately on a network without human intervention. This paper will provide the facility to dynamic load balancing i.e automatically detection of hardware and load balancing.

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A Load Balancing Technique through JINI in Distributed Processing

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Abstract: Jini is a set of specifications that enables services to discover each other on a network and that provides a framework that allows those services to participate in certain types of operations. For an instance, take a Jini-enabled laptop into a Jini-enabled conference room and the laptop automatically be able to find and use the services of the conference room such as the laptop will automatically find the printer inside the room, seamlessly download any drivers required by the printer and will send its output to the printer. But Jini is not about hardware and devices. Jini is all about services.

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Object oriented Interaction by UML in Distributed Environment

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Abstract: Today, Modeling processes an important role in software architecture. The role of object oriented in Distributed environment for very easy to access and secure. In this distributed system the computers are connected to each other to communication network, arranged in a geometrical shape called network topology. The paper makes three basic objectives for this idea. First the concepts of distributed systems relate to Unified Modeling Language (UML) and second how the design methodology easy to understand the distributed access. Third the association of concern of dynamic interconnection networks representation by UML(applied to Bus, Cross-bar and Multistage network topologies) and designing Object, Interaction and Use-case diagrams for the same. To test these claims the paper investigates the use of concern connectors in a real-world architectural model.

Analysis of Location and Zone Based Routing in Vanet using IEEE802.11P

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Abstract: Vehicular ad hoc network (VANET) is an emerging field which is a sub-category of MANET, where vehicles communicate with each other. Because of constraint pattern of roads and high speed of vehicles, path finding is a challenge in vehicular ad hoc networks. Most of the papers analyzed the performance of topology and position based routing protocols. This paper analyzed the performance of location aided routing (LAR) and zone routing protocol (ZRP) for city and highway scenarios. Vehicle's traces are obtained by Vanet MobiSim, an intelligent driver model (IDM) based traffic simulator. Metrics for analysis of routing performance like packet delivery ratio, delay and normalized routing protocols re investigated and observed using ns2 with IEEE802.11p. The simulation results are analyzed using AWK programming script.

Enhanced Data Security on Cloud Based Using Encryption Algorithm, Elliptic Curve Cryptography & Blowfish Algorithm

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Abstract: With the advent internet in the 1990s to the present day facilities of ubiquitous computing, the internet has changed the computing world in a drastic way. It has traveled from the concept of parallel computing to distribute computing to grid computing and recently to cloud computing. Although the idea of cloud computing has been around for quite some time, it is an emerging field of computer science. Some of the major firms like Amazon, Microsoft and Google have implemented the “CLOUD” and have been using it to speed up their business. In this paper we will discuss Distributed scheme and Different algorithm to provide security of the data in cloud to prevent Data access from unauthorized access.

Supply Chain Management in Cloud: A Review

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Abstract: The goal of Cloud Computing is to share resources among the cloud service consumers, cloud partners, and cloud vendors in the cloud value chain. New cloud computing technologies are enabling breakthrough innovations in supply chain management (SCM) applications delivered via software as a service (SaaS) models. Supply chain management typically involves supervising the transfer of products and goods, such as from a supplier, then to a manufacturer, a wholesaler, a retailer and finally to the consumer. IT advances directly can correlate to supply chain management improvements, such as through the rise of effective virtual supply chains. Supply chain information system based on cloud computing technologies like software as a service (SaaS), platform as service (PaaS) and infrastructure as service (IaaS).With the availability to anytime and anywhere. Cloud services provide sharing of resources of its services to supply chain. This paper adopts basic idea of cloud computing to provide an efficient and scalable solution for supply chain management.

Developing a Simple Net Shield for Securing Personal Computer Using IP Filter Hook Driver

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Abstract: A simple net-shield tool provide some level of intrusion detection, allowing the software to terminate or block connectivity where it suspects an intrusion is being attempted. It differs from a conventional firewall in terms of scale. A simple Net-shield is typically designed for use by end users as a result, a simple Net-shield will usually protect only the computer on which it is installed. A filter-hook driver is a kernel-mode driver that is used to filter network packets. Filter-hook drivers extend the functionality of the system-supplied internet protocol (IP) filter driver.

Comparative Analysis of Cryptography Cipher Techniques

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Abstract: In today's scenario, Information Security is the most challenging aspects in the web and network application. Internet and network applications are growing fast. So the value and importance of the exchanged data over the internet or other type of media are increasing. To handle security threats modern data communications uses cryptography an effective, efficient, and essential component for secure transmission of information by implementing security parameters counting Confidentiality, Authentication, accountability, and accuracy. So, Cryptography is an example of the data security that converts information from its normal form into an unreadable form by using encryption techniques.. There are various encryption techniques have been proposed by the researchers over a period of time. But in our literature survey we compared the cipher techniques like Caesar Cipher, Playfair Cipher, and Feistel Cipher by using C programming language code with their execution time. In this paper, we have analysis and compare Caesar Cipher, Playfair Cipher and Feistel Cipher and found relationships among them.

Analysis and Design of Secure Web Services

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Abstract: We are providing the solution for the problems in E-Commerce as, E-Commerce's are due to frequent update of business process because of changing customer demands and platform integration because of the heterogeneous platform used by different enterprises. To subdue the alleged problems in business operation and integration, Service Oriented Architecture (SOA) can be applied. SOA is an information technology approach in which the existing applications in an enterprise can use the various services available in a network i.e. World Wide Web.

Optimized Resource Utilization in Less Time in Grid Computing

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Abstract: It is Required In Grid to dispatch tasks to idle or under loaded sites to obtain better resource utilization and reduce the average task response time. We are designing a new algo named Efficient Resource n Network Path Utilization Algorithm (ERNPUA) for Service Request Scheduling in Grid Computing.

Ranking Based Searching System with Content Search

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Abstract: We are Designing a Content Based Search Engine With Ranking by user and optimized search query output. Understand the webmaster guidelines from each search engine: Google, Yahoo, Bing. Don't violate those policies with the site(s) that are your bread and butter. If you must test, do so with other websites that are not going to affect your business. Rather than focusing on loopholes and exploits, be a better marketer and understand what your target audience wants, what influentials respond to and develop smarter, more creative marketing that can stand to drive traffic and sales. Include SEO in those "UnGoogled efforts" and you'll realize the added benefit of great performance from your website in search engines as well.

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Peer-Peer Packet Authentication with Digital Signature on Mobile Adhoc N/W

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Abstract: We are developing a Digital Signature System in which a sender send a packet with digital sign to multiple users, the receiver verify the signature. Multicast Authentication based on Batch Signature [MABS] utilizes an efficient asymmetric cryptographic primitive called batch signature which supports the authentication of any number of packets simultaneously with one signature verification, to address the efficiency and packet loss problems in general environments. The enhanced scheme combines MABS with packet filtering to alleviate the DoS impact in hostile environments. MABS provides data integrity, origin authentication and non-repudiation as previous asymmetric key based protocols. MABS can achieve perfect resilience to packet loss in loss channels in the sense that no matter how many packets are lost the already-received packets can still be authenticated by receivers.

Traffic Analysis of ant hoc net Performance with Varying Mobility

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Abstract: The working group will also consider issues pertaining to addressing, security, and interaction/interfacing with lower and upper layer protocols. In the longer term, the group may look at the issues of layering more advanced mobility services on top of the initial unicast routing developed. These longer term issues will likely include investigating multicast and QoS extensions for a dynamic, mobile area. IP-Layer Mobile Routing An improved mobile routing capability at the IP layer can provide a benefit similar to the intention of the original Internet, viz. "an interoperable internetworking capability over a heterogeneous networking infrastructure"

Multilevel Marketing Pyramid Selling

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Abstract: We are developing a Interface between the Clients and Developers for Outsourcing in Software Development, it will be reside as:

[Client] – [Interfece (Dash Board)] – [Admin] - [Payment Gateway] – [Developer]

The Client Place the Order through communication Channel (Dash Board) to a Developer selected by communication with many. Developer will start work and complete with in time limit. The System will Rate Both the Developer and Client. If client rejects the order and rolls back the ratings will be compared by parameters and checked by the system whose getting higher rating the opposite member will have to pay(Payment / Work).

Analysis of Complexity of Greedy Algorithm Used in Optimization

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Abstract: They are ideal only for problems which have 'optimal substructure'. Despite this, for many simple problems (e.g. giving change), the best suited algorithms are greedy algorithms. It is important, however, to note that the greedy algorithm can be used as a selection algorithm to prioritize options within a search, or branch and bound algorithm. We will do, To estimate how long a problem will learn. To analysis the complexity of different greedy algorithms used in optimization. To compare the efficiency of different existing greedy algorithm. Develop an algorithm to reduce the complexity. Compare the developed algorithm with existing algorithm.

Comparison of Security Technique for Securely Access Data Extending Directly Upwards From Cloud Computing

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Abstract: Cloud computing is a next generation platform that provides dynamic resource pools, virtualization, and high availability. Today, we have the ability to utilize scalable, distributed computing environments within the limits of the Internet, However Data security and Access control is a challenging research work in Cloud Computing. Cloud service users upload there critical data over the cloud. Security must be provided to such outsourced data, so that user are not worried while uploading there critical data. In this paper we compare two security techniques for secure data access over cloud and find which one is best-which is Diffie-Hellman key exchange protocol between cloud service provider and the user for secretly sharing a symmetric key for secure data access, and Authentication will be done using Two Factor Authentication Technique with the help of key generated using Diffie-Hellman key exchange algorithm and second one is Multi-tenancy based access control model (MTACM) was designed to embed the security duty separation principle in cloud; it was a two granule level access control mechanism, one was tenant granule for CSP to compartmentalize different customers, the other was application granule for customers to control the access to their own applications. MTACM was technically and practically feasible.

New Modified 512-BIT MD5 Algorithm with SHA Compression Function

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Abstract: An Application of MD5 algorithm is implemented for the stream controlled transfer messages in the network. This would be a high security algorithm for data transfer in mobile networking with stream controlled logic. There may a vast number of applications for this algorithm in data transfer in various types of networks. Here we are going to implement the MD5 algorithm for the 512 bit message transfer and also with the high security and Stream controlled transfer logic. This algorithm can be used in sending messages for 3G, 4G network. This can also be used for 5G network for which the work has been started. Here we are using 128 bit algorithm and using that as a basic element and create a application for 512 bit messages. The basic aim of this project is to propose an algorithm for 512 bit encryption with the use of efficient compression function i.e SHA compression function and also implement with the steam controlled transfer messages and also shows that how the msg travel over the client server model.

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On SIM Card Fraud is Estimating Mobile Future Opulence

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Abstract: The paper entitled SIM card fraud is estimating mobile future anopulence is for online management of complaint registration and criminal details for fast service. Identity crime is defined as broadly as possible in this project. At one extreme, fake identity fraud refers to the use of tenable but fictive identities. It is difficult to apply successfully. At the other extreme, real identity theft refers to illegal use of innocent people's complete identity details.

In reality, identity crime can be committed with a mix of both synthetic and real identity details. The SIM card companies module will consist of options like customer SIM card count, customers details those which are required while activating a SIM card.

The basic aim of this project is to resolve the criminal activities.

To save the innocent people who don't aware about their miss use of identity proof.

If any person identity the miss use of his identity then he can do claim for it so he can saved from any crime in future.

Load balancing in Multiprocessor System by using Genetic Algorithm

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Abstract: Advancement in technologies led to increase the processing speed and enhanced execution time. Many units of work is done in microsecond or milliseconds. But as work is increases the load may occur on a node of a system. Sometimes workload is higher that time we need a effective algorithm that solve out a problem of overloading of a system so that work is divided among the processors. This paper introduces the brief description of the load balancing and genetic algorithm and the issues regarding the genetic algorithm.

Load balancing by a genetic algorithm can give a best way to solve out the problem of overloading of a node with the help of improved operators of the genetic technique and the emphasis will be on the development of efficient policies for load information distribution and placement decision-making.

Quality of Service Based Handoff Schemes for WiMAX/WLAN Networks

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Abstract: The latest technology that provide broadband access with large coverage area is Worldwide Interoperability for Microwave Access (WiMAX), Since Mobile WiMAX has an important advantage to serve large coverage areas per base station, Mobile WiMAX has become a popular technology for handling mobile users. As we know that for serving a large number of Mobile Users in practice requires an efficient handover scheme. Currently, mobile WiMAX has a long handover delay that contributes to the overall end-to-end communication delay. Recent research is focusing on increasing the efficiency of handover schemes. In existing system whenever stations are out of range of all APs and BSs then there is no communication for that particular stations.

In our this paper we present whenever stations is out of range of all APs and BSs, then it can communicate through any other station which are in range based on ad-hoc network technology.

An Overview of Face Recognition Schemes

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Abstract: A facial recognition system is a computer application for automatically identifying or verifying a person from a digital image or a video frame from a video source. One of the ways to do this is by comparing selected facial features from the image and a facial database. It is typically used in security systems and can be compared to other biometrics such as fingerprint or eye iris recognition systems. The aim of this paper is to present an independent, comparative study of three most popular appearance-based face recognition projection methods (PCA, ICA, and LDA) in completely equal working conditions regarding preprocessing and algorithm implementation.

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Rectangular Patch Antenna for public safety WLAN and IMT band Applications

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Abstract: Engineering is an implementation of all that we study for inventing something new ideas and making things easy and applicable in the real world through practical study.

This paper presents a multi band rectangular patch antenna. The slotted antenna is a dual band antenna. The two bands produced are used for IMT band (3.97 GHz) and public safety WLAN (4.94 GHz-4.99 GHz) applications. The frequency used to set design parameters is 4.96 GHz, so our main focus is on the second public safety WLAN band. The feeding technique used for feeding the antenna is coaxial probe feeding technique. When slotted antenna is compared with a conventional rectangular patch antenna it is seen that slotted antenna is better. Here dual band slotted patch antenna for public safety spectrum and IMT band applications is being designed.

Quick Review on Multiplication Algorithm for Enhancing Efficiency of MAC Unit

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Abstract: This review work is devoted for seeking speed efficient Multiply Accumulate Unit. As we know that MAC Unit is a digital co-processor which can performs multiply then accumulate operation. MAC Unit is the heart of digital signal processors to perform various sophisticated tasks that includes FFT, DFT, resolving various complex equations and Convolution etc. apart from this it is also used in various other configurations such as IIR, FIR etc. Every digital domain based technology depends upon the operations performed by MAC Unit either partially or whole. Speed is the most prominent factor of processor and controllers being used recently. To meet this major concern of “speed” we need particular high speed MAC. That’s why it is highly required to design high speed MAC, which can enhance the efficiency of those modules which lies upon the operations performed by MAC. The speed of MAC greatly depends upon the speed of multiplier. At algorithmic and structural level there are so many multiplication algorithms exist now-a-days. After a thorough study and proper analysis we have seen that Vedic multiplication technique is the best algorithm that gives much better result in comparison to others in terms of speed. Further we have analyzed different existing Vedic multiplication hardware, and compared those with respect to speed. And found that the Vedic multiplier with Carry Save Adder gives better outcome. Then we have proposed that multiplier for the MAC unit design. This proposed MAC Unit is able to perform different arithmetic operations at high speed. All sub-modules in the MAC unit has been designed in combinatorial form. And integrated in the final module, in which we have provided the reset and clock functionality to have better control on the circuitry.

Piezoelectric Energy Harvesting

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Abstract: Low power wireless devices have been increasing in applications of industrial automation monitoring with the limitation of manual battery replacement. This can be overcome by a miniaturized device that can convert natural mechanical energies to power wireless devices. During the last decade piezoelectric cantilever energy harvesters have been increasingly investigated for this application. Energy harvesting technique is proposed as the best alternative. There exists variety of energy harvesting techniques but mechanical energy harvesting happens to be the most prominent. This technique utilizes piezoelectric components where deformations produced by different means are directly converted to electrical charge via piezoelectric effect. Subsequently the electrical energy can be regulated or stored for further use.

Speed Control of Induction Motor Using Fuzzy Logic Approach

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Abstract: This paper presents a rule-based fuzzy logic controller applied to a scalar closed loop Volts/Hz induction motor (IM) control with slip regulation and its simulation results. The IM is model in terms of d-q windings, with synchronous frame associated with the frequency ω_s of the stator excitation. The results obtained in the simulation are interesting, considering the presence of strong non-linearity in the IM model. A fuzzy logic control for a speed control of Induction motor the simulation developed by using Fuzzy MATLAB Toolbox and SIMULINK. The fuzzy logic controller is also introduced to the system for keeping the motor speed to be constant when the load varies. Because of the low maintenance and robustness induction motors have many applications in the industries.

Double Input Z-Source DC-DC Converter Fed with Separately Excited DC Motor

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Abstract: The Z-source converter employs a unique impedance network (or circuit) to couple the converter main circuit to the power source, thus providing unique features that cannot be obtained in the traditional voltage-source and current-source converters where a capacitor and inductor are used, respectively. The Z-source converter overcomes the conceptual and theoretical barriers and limitations of the traditional voltage-source converter and current-source converter and provides a novel power conversion concept.

The project deals with double input z-source dc-dc converter fed with separately excited dc motor. The proposed converter, the input dc voltage can be boosted and also input dc sources can deliver power to the load individually or simultaneously, so combination of a battery with one of the new energy sources such as solar array, wind turbine or fuel cell can be used as input sources. Different states of double input Z-source dc-dc converter are analyzed, steady state operation of converter is explained and modeling of separately excited dc motor is explained in detail. The simulation is done using MATLAB/SIMLINK. Finally, the simulation results are presented to confirm the theoretical analysis.

Distribution Free Variable Step Size Normalized Least Means Square Algorithm

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Abstract: In this paper, we present a new approach to improve the acoustic echoes occurs in today's telecommunication system. We show that the new approach reduces the computational complexity; unlike old approaches like a LMS, NLMS and variable step size (VSS) algorithm, converges rate and misadjustment and computational complexity are biggest challenges for us. So new approach is known as DFVSS-NLMS algorithm and suitable candidate for a real world application

Designing of Lag compensator using Matlab

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Abstract: The gain crossover frequency and closed-loop bandwidth for the lag-compensated system will be lower than for the uncompensated plant (after the steady-state error specification has been satisfied), so the compensated system will respond more slowly in the time domain. The slower response may be regarded as a disadvantage, but one benefit of a smaller bandwidth is that less noise and other high frequency signals (often unwanted) will be passed by the system. The smaller bandwidth will also provide more stability robustness when the system has unmodeled high frequency dynamics, such as the bending modes in aircraft and spacecraft. Thus, there is a trade-off between having the ability to track rapidly varying reference signals and being able to reject high-frequency disturbances. The design procedure presented here is basically programming based. All of the measurements needed can be obtained from accurate Bode plots of the uncompensated system. If data arrays representing the magnitudes and phases of the system at various frequencies are available, then the procedure can be done numerically, and in many cases automated. The examples and plots presented here are all done in MATLAB.

Corrosion: A General Review

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Abstract: Corrosion is process of destruction of a metal or material surface by the action of chemical in reaction with atmosphere. Its effect leads to erosion, wear tear of surface of metal. There are various ways we can avoid corrosion such as design of proper metal surface, proper protective covering, use of inhibitors & cathodic protection. Among all the methods, cathodic protection is best method to prevent corrosion. Its two types are sacrificial anode cathodic protection & impressed current cathodic protection. Sacrificial anode method tends to sacrifice of an object which corrodes itself in order to save metal structure. Impressed current cathodic protection method employ inert anode while current is passed on to cathode with the help of external DC power source where a rectifier is employed.

Electrical Bioimpedance: Methods and Applications

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Abstract: Bio-electrical impedance analysis (BIA) is an inexpensive, quick and non-invasive technique for measuring body composition. Unlike other various complicated methods, bioimpedance measurement technique is simple and less time consuming for various applications including medicine, biotechnology and security system. BIA is a promising method for predicting changes in body composition and has the potential to replace the conventional methods of detection and diagnosis of diseases in near future. The results are reproducible and rapidly obtained. However it suffers from a lack of standardized methods and quality control procedures. This paper describes the theory and practical implementation of various methods to measure complex impedance of biological tissues. By reviewing the current development status of bioimpedance technology, the paper analyses the future emphasis of development and technology direction, in order to make bioimpedance technology gain wider clinical applications.

Reactive Power Control in the Deregulated Electrical Power Environment using FACT devices

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Abstract: In the deregulating electricity market, many private sector power producers are participating actively. With growing number of the wind mills and solar power generation, the reactive power production will be more because of induction generator and inductive type load. Many blackouts have happened in the past decades due to more reactive power which lead to a decrease in the magnitude of real power. It is very essential to control and compensate the reactive power, increase the real power flow in the transmission line, increase the transmission efficiency, improve the system stability and be in a safer place to save the fossil fuels for the future.

In this paper the importance of reactive power and its various compensation and control techniques are applied to a five bus deregulated test case model. The simulations were done using Matlabsimulink, for various FACT controllers such as STATCOM, SVC, SSSC and UPFC compensation and the results were tabulated and compared.

A Study: Witricity and its Applications in Space

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Abstract: Wireless electricity or witricity is the transfer of electric energy or power over a distance without the use of wires. Electrical power is vital to everyone and is a clean and efficient energy source that is easy to transmit over long distances, and easy to control. Generally, electrical power is transmitted from one place to another with the help of wires which introduce losses and a significant amount of power is wasted in this way. As a result, the efficiency of the power system is significantly affected. In order to overcome these problems, a low-cost, reliable, efficient, secure, and environmental friendly wireless energy solution is presented in this research paper. The concept of transferring power wirelessly in 3D space was first realized by Nikola Tesla when he gave the idea to transmit the power without the help of wires over large distances using the earth's ionosphere. In this research paper, magnetic resonance method which is non-radiative in nature is introduced for wireless power transmission and the electrical power is transmitted wirelessly over a distance of 10 feet with an overall efficiency of 80%. The method introduced in this paper is environmental friendly and has a negligible interaction with exterior forces/objects.

Application of Cloud Computing In Smart Grid: A Review

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Abstract: The smart grid refers to electricity transmission and distribution system integrated, sophisticated sensing and monitoring, information and communication technologies to create an automated, intelligent, and widely distributed energy delivery network. Electrical Energy is the linchpin of our economic future. Increasing concern about energy consumption is leading to infrastructure that supports real time, bilateral communication between utilities and consumers, and allows software systems at both ends to control and manage power use. In this paper we propose Cloud Computing (CC) paradigm because of its indispensable benefits of low cost, flexible & redundant architecture with fast response. CC has functionality to provide security, interoperability and best performance required for a large scale & complex Smart grid application.

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Particle Swarm Optimization Based Performance Investigation of Self-Excited Induction Generator

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Abstract: In this paper the steady state performance of self-excited induction generators is determined using particle swarm optimization (PSO) technique. The analysis is carried for R-L load. Simulated results obtained using the particle swarm optimization technique via Matlab facilitate in exploring the performance of self-excited induction generator.

Improved Efficiency of CMOS Power Amplifier Using Micro-Strip Line for Millimeter Wave Application

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Abstract: For millimetre wireless communication, the integration of CMOS power amplifier with small antennas remains to be a challenge. In this paper, A CMOS power Amplifier approach is designed for millimetre communication networks. We have designed Power amplifier with different parameter at 31 GHz frequency.

The performance parameters of this Power Amplifier is analysed in terms of gain, linearity, PAE and S-parameters which overcomes a multidimensional optimization problems for the designers. For that purpose, we have used two stages of common sources with optimum input and output impedance matching networks in these modules. These amplifiers are designed to operate at microwave frequency (31 GHz) to achieve higher gain, higher efficiency and better linearity.

A Review on health hazards of Processing and Dumping of e-waste in and Around Moradabad, UP, India

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Abstract: Due to rapid growth and faster upgrading of electrical and electronic equipment causing increasing quantity of electronic waste or e-waste in the city. About 20 to 50 million metric tons of e-waste are disposed worldwide every year. The e-waste is one of the growing problems in the world and specifically in Moradabad as the e-waste from Delhi & china is coming here for processing, recycling and dumping. The poor people of the city are forced by the circumstances to engage themselves in this activity for their livelihood in spite of the hazard to their health.

The main objective of the study is to identify and study the collection, recycling and dumping sites in and around Moradabad. And to check the water pollution, soil pollution and air pollution due to their processing, recycling and dumping of the e-wastes and its impacts on the health of the people in the surrounding area. About 80-85 percent of electronic products were discarded in landfills or incinerators, which can release certain toxins in the air and only 12.5 per cent of e-waste is currently recycled.

Studies have reported the higher levels of toxic metals, such as lead (Pb), Cadmium (Cd), Mercury (Hg), Copper (Cu), Beryllium (Be), Arsenic (As), Barium (Ba), Brominated Flame retardants (BFR) etc. which are causing not only environmental pollution but causing very serious effects on human health which will be discussed in detail in the paper.

Remote Sensing & GIS Approach to Eco-Development Planning for Aravalli Degraded Forests around Gurgaon

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Abstract: A major part of Aravallis has been facing severe degradation and depletion problems due to unmindful exploitation of the land leading soil erosion and near absence of ground water and moisture retention capabilities of the soil especially in the area of Gurgaon due to huge construction work and settlement of the population in mass. The Remote Sensing and GIS can be a fruitful tool for providing an accurate data on the status and availability of land for eco-development and proper management of the area.

The main objective of present study is to use Remote Sensing and GIS in the formulation of a methodology for eco-development planning for Aravallis degraded forests. The other objectives of the study include to prepare a natural resources and socio-economic profile of the area and to study the land degradation and associated factors. And finally develop a mechanism for monitoring and evaluating the development efforts for greening of Aravallis. The present study will be helpful to the society & people in many ways especially in terms of environmental problems that are going on to increase day by day due to reckless exploitation of the forest wealth. Efforts can also be made for the reclamation through plantation in drilled holes on rocky slopes of the Aravalli hilly area which is mostly rocky with thin soil cover. Rising of fodder resources & fuel wood on hilly slopes can also be recommended to cater the need of common villagers of the area. Pasture development after piling soil cover over the rocky/ stony surface may also be recommended for eco-development. Other recommendations may also be suggested after the thorough study of the region.

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Mobile Recording Microscope

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Abstract: Microscope is an important diagnostic tool used widely in Science & Technology. The widespread use of this tool can be seen in Medicine, Nuclear Sciences, and Education etc. Several attempts are being carried out to make microscopes easy to handle and user friendly. One such approach is the Mobile Recording Microscope which can be built using a simple smart phone. Unlike conventional microscopes, the mobile recording microscope uses the camera integrated in smart phones to record images. This reduces the efforts needed to store and transfer the recorded data. The replacement of wired medium and computer for recording images reduces the cost, space and difficulties incurred in use of microscopic devices. The hand-held smart phone for recording images assures anywhere and anytime use of the microscope. These advantages favour common man to use it independently without the assistance of a skilled person.

World we live in and our Responsibilities

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Abstract: Knowledge originates and resides in the mind of people. People with knowledge and skill are therefore the most potent resources of a nation. Human recourse is also a truly renewable resource. The young and educated knowledge workers of today, that are we, are the true asset of the nation. Irrespective of what we do, adopt the scientific approach and never stop learning.

RED TACTON -Data Transmission Technology

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Abstract: In an age where information is being considered as the blood of this century, the very idea of transmitting such data or information to someone very specific sends these cold waves all around our body. With so many hackers and other anti-social elements spread all around the world, secure data transmission is considered to be a myth these days. With the recent technological advancements success has been achieved to an extent in tackling the above stated issue. One such solution to this issue is the RED TACTON devices which are going to make their mark very soon. And when they are out all the problems related to secure, efficient, reliable, hi speed data transmission will be solved. Yes they are going to be solved!!

The paper here unleashes the various applications that are possible through these small devices which can literally rest anywhere on the body or any dielectric medium for that matter. With a wide range of applications starting from personalization, conferencing system, security applications and many more, RED TACTON technology is a giant leap in the field of HUMAN AREA NETWORKING.

Prevalence of Methicillin Resistant Staphylococcus Aureus in Patients Admitted in a Tertiary Care Hospital of North India

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Abstract: Methicillin resistant Staphylococcus aureus (MRSA) is endemic in India. In the presenter a of antibiotic resistance, the emergence of multi-drugs resistant organism is becoming more common. The present study is performed in patients admitted in hospital in various department of hospital to study the infection rate of MRSA from these units. The aim of this study was to isolate Staphylococcus aureus from various samples of patients admitted in tertiary care hospital, & to study the prevalence rate of MRSA in the hospital. The study was conducted in TMMC & RC hospital from January 2013 to September 2013. A total of one hundred Staphylococcus aureus isolates from clinical samples were subjected to MRSA screening using Kirby-Bauer methods with cefoxitin 30µg discs per CLSI guidelines. There were 225 different samples collected and all the samples were inoculated on Blood agar medium than incubated. After overnight incubation 100 Staphylococcus aureus were isolated, among which 26 were MRSA and 74 were MSSA has been isolated. The susceptibility pattern of antibiotics showed that all MRSA isolates were significantly less sensitivity to antibiotics as compared to MSSA. None of the MRSA strain showed resistance towards Vancomycin & Linezolid. The emergence of MRSA and other antibiotic resistant organisms reflects widespread ubiquitous over-use of antibiotics on a global scale. Control measures are required to prevent spread and reduce emergence of resistance.

Development of Breakfast Cereal Product Using Quality Protein Maize

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Abstract: Quality protein maize is the protein rich and high yielding genotype of low cost and abundantly available maize. The objective of our research was to develop a nutritious ready-to-eat food product using quality protein maize. Thereby, maize based breakfast cereal was developed. Finger millet and carrot powder were used as additive and their proportions were determined. Initially, extrusion characteristics of maize were evaluated. Subsequently, the effect of addition of finger millet and carrot powder on maize based extrudate was studied. Then, the most acceptable product with their composition and processing parameters were analysed. The product was found to have 9.6% protein, 1.5% fat, 3.4% fibre, 2 mg/100g β-carotene, 3 mg/100g iron and 122 mg/100g calcium. Also, it had a bowl life of 4 min and a glycemic index 67.8.

Composition of n-alkanes in ambient aerosols at a semi-agricultural site in Delhi

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Abstract: Delhi, being one of the most polluted cities in the world, is the largest source of aerosols in the lower atmosphere, due to large amount of natural dust advection and sizable anthropogenic activities. The compositions of organic tracers in this region are highly variable and need to be investigated thoroughly. A comprehensive study to assess concentration of n-alkanes (ng/m³) in Particulate Matter (PM₁₀) was carried out during winter (December 2013-February 2014) at National Physical Laboratory (NPL), New Delhi, India. Respirable Dust Sampler loaded with Quartz fiber filters (QFFs) were used for the ambient sampling. The Quantitative estimation of n-alkanes was done by using Gas Chromatography-Mass spectrometry (GC/MS). The average concentration of total n-alkanes in ten samples was found to be 51.2 ng/m³. Carbon Preference Index (CPI) value of 2.03 and C_{max} at C₃₅ indicated the dominant inputs of n-alkanes from biogenic sources and comparatively lesser contribution from petrogenic sources.

Impact of E-HRM System on Organizational Performance: A Case study on Banking Sector

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Abstract: The employees of banking sector envision that Information Systems will have a major influence on their working style will be highly innovative. Their paperless office will be highly automated for office activities e.g. recruitment, training, performance measurement etc. The objective of this research is to trace the emergence of e-HRM practices in banking sector and to find out the impact of E-HRM System on organizational performance and to offer recommendations and suggestions for enhancing the effectiveness of e-HRM systems. The study is confined to the Delhi only and a sample size of 150 public and private sector Bank employees. The research instruments used were questionnaire. Appropriate Statistical tools including Chi-Square Test, Percentage, wherever applicable have been applied to draw logical conclusions from the data.

Influence of Social Media Marketing in Indian Pharmaceutical Industry

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Abstract: Social media marketing is entering in every prospective field and results are beyond imagination. Mckensey & Co. has predicted Indian pharmaceutical industry will touch 55 billion USD by 2020. Social media is definitely going to change the market dynamics. On 12th Feb. 2014 facebook celebrated its tenth anniversary with \$134 billion revenue. Many pharmaceutical giants such as Pfizer, Eli Lilly, AstraZeneca, GSK etc.(Beth Synder Bulik, 2011) had realized the potential of social media and therefore, a huge chunk of money is involved which is resulting into a wide shared network of consumers (i.e. doctors and patients), hospitals, healthcare portal and pharmaceutical companies. It enables pharmaceutical companies to gain market intelligence, obtaining real time customer feedback, spreading disease awareness and engage in brand promotion. This study is an attempt to understand the implication of social media marketing in Indian Pharmaceutical Industry and also to analyze the reason behind the acceptance of social media marketing in pharmaceutical area. The outcome of the study is that social media marketing had created a synchronized platform for doctors, pharmaceutical companies and patients (consumers) in more meaningful and coherent way. It not only creates the awareness about the disease but connects the patients of similar disease profile.

Organizational Learning: A Case Study of an International Non-Profit Organization

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Abstract: From the late 1990's onwards, within an organizational setting and management practice, the concepts and domains of organizational learning (OL) have become "hot topics" for both management researchers and practitioners. OL is still a research area where theoretical and operational definitions fluctuate and these areas are generally insufficiently empirically explored, particularly when it comes to the non-profit sector. So far, different researchers have looked at OL through different theoretical perspectives and frameworks, very often by emphasizing different features. Despite the rising importance of OL, little done to theoretically compare and integrate the existing theoretical frameworks. OL in the non-profits is underexplored as well, and it is still to be discovered what the main barriers to OL in non-profits are or how exactly OL practices impact capacity building, performance and other important organizational areas.

By using a case study approach, this study provides a holistic picture of OL processes in a single non-profit organization by considering and integrating various important dimensions: sector to which an organization belongs, organizational context and influence of various organizational factors. This study is focusing on working environment and operations in a single international non-profit organization. The goal is to assess the awareness of the organizational members of the OL concept, as well as to explore the social context and the system levels within which the learning occurs in the subject organization.

Foreign Direct Investment in Retail Market of India: Challenges & Prospects

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Abstract: India's retail market remains largely off-limits to large international retailers like Wal-Mart and Carrefour. Opposition to liberalizing FDI in this sector raises concerns about employment losses, unfair competition resulting in large-scale exit of incumbent domestic retailers and infant industry arguments to protect the organized domestic retail sector that is at a nascent stage. Based on international evidence, we suggest that allowing entry by large international retailers into the Indian market may help tackle inflation especially in food prices. Moreover, technical know-how from foreign firms, such as warehousing technologies and distribution systems can improve supply chain efficiency in India, in particular for agricultural produce. Better linkages between demand and supply have the potential to improve the price signals that farmers receive and also serve to enhance agricultural and other exports.

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Managing Diversity at the Workplace in India

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Abstract: Diversity is very sensitive topic. All human organizations have differences. People are different not only in gender, culture, race, brings to an organization, social and psychological characteristics, but also in their perspectives and prejudices. Managing diversity is an ongoing process that unleashes the various talents and capabilities which a diverse population, community or society, so as to create a wholesome, inclusive environment, that is "safe for differences", enables people to "reject rejection", celebrates diversity, and maximizes the full potential of all, in a cultural context where everyone benefits. Some studies suggest that it means approaching diversity at three levels simultaneously: individual, interpersonal and organizational. The traditional focus has been on interpersonal and individual aspects alone.

Stringi Management: Chalanges and Prosprects

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Abstract: Stress involves real or perceived changes within an organism in the environment that activate an organism's attempts to cope by means of evolutionarily ancient neural and endocrine mechanisms. Responses to acute stressors involve catecholamines released in varying proportion at different sites in the sympathetic and central nervous systems. These responses may interact with and be complemented by intrinsic rhythms and responses to chronic or intermittent stressors involving the hypothalamic-pituitary-adrenal axis. Varying patterns of responses to stressors are also affected by an animal's assessment of their prospects for successful coping. Subsequent central and systemic consequences of the stress response include apparent changes in affect, motivation, and cognition that can result in an altered relationship to environmental and social stimuli. This review will summarize recent developments in our understanding of the causes and consequences of stress. Special problems that need to be explored involve the manner in which ensembles of adaptive responses are assembled, how autonomic and neurohormonal reflexes of the stress response come under the influence of environmental stimuli, and how some specific aspects of the stress response may be integrated into the life history of a species.

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Application of Emerging and Alternative Refrigeration Technologies for Food Industry

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Abstract: The food industry relies heavily on the vapour compression refrigeration cycle for food preservation and processing. To reduce the environmental impacts of vapour compression systems that employ hydrochlorofluorocarbons (HCFCs) and hydro fluorocarbons (HFCs) as refrigerants a number of alternative systems and technologies are being developed that offer the potential for lower GHG (Green House Gases) emissions. Refrigeration has become an essential part of the food chain. It is used in all stages of the chain, from food processing, packaging, to distribution, retail and final consumption in the home. The food industry employs both chilling and freezing processes where the food is cooled from ambient to temperatures above 0°C in the former and between -18°C and -30°C in the latter to slow the physical, microbiological and chemical activities that cause deterioration in foods. In these processes mechanical refrigeration technologies are invariably employed that contribute significantly to the environmental impacts of the food sector both through direct and indirect greenhouse gas emissions. To reduce these emissions, research and development worldwide is aimed at both improving the performance of conventional systems and the development of new refrigeration technologies of potentially much lower environmental impacts. These alternative approaches and future technologies that could be used to reduce the energy consumption and GHG emissions associated with the refrigeration of food. The emerging refrigeration technologies have also potential to reduce the environmental impacts of refrigeration in the food industry.

Automation in Dairy and Food Processing Industry

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Abstract: Automation generally refers to the science and technology to carry out the process which maximum accuracy and efficiency. The basic aim of having automation in various fields is to achieve higher precision and efficiency in all operations and processes. The control of process parameters in processing of milk and manufacture of different products is one of the essential requirements to achieve desired quality product. In addition to consistency in product quality, automation also provides scope for operational flexibility, energy conservation and safety in the plant. Automation has done wonder in the field of packaging of dairy and food products. The dairy equipments such as milk reception and processing equipments, Ice-cream freezers, packaging machines, UHT plants, milk evaporators, spray dryers, equipments for dairy plant utilities etc. are available with adequate level of automation in the system. Automation in dairy industries is presently viewed as a versatile tool for solving crucial problems of the process and production control, plant supervision and management as well as for solving the accompanying financial and organizational problems. Food processing industry globally forms one of the largest economic and employment sectors. Within it, current automation and engineering practice is highly variable, ranging from completely manual operations to the use of the most advanced manufacturing systems. Yet overall there is a general lag in the use of automation technology compared with other industries. Rapid advances in computer technology and heightened expectations of consumers and regulatory agencies for improved food quality and safety have forced the food industry to consider automation of most manufacturing practices. This paper includes on the importance of automation in food processing industry and is focused on the tools of automation such as robotics, online sensors and computer vision technologies.

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Biosensor: A Novel Tool for Food Quality Assurance

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Abstract: Biosensor is defined as a compact analytical device incorporating a biological or biologically derived sensing element either integrated within or intimately associated with a physicochemical transducer. The principle of detection of a biosensor is based on the specific interaction between the analyte of interest and the biological components. As a result of this specific interaction different properties are changed, which can be detected and measured by transducers. Bioreceptors and transducers are the two main components of a biosensor. Bioreceptors or biorecognition element is the one which leads to the recognition of target analyte and a transducer, for the conversion of recognized event into a measurable electrical signal. Biosensors are an important alternative in the food industry to ensure the quality and safety of products and process controls with effective, fast and economical methods. Food quality and safety is a scientific discipline describing handling, preparation and storage of food in ways that prevent food borne illness. Food serves as a growth medium for microorganisms that can be pathogenic or cause food spoilage. Therefore, it is imperative to have stringent laws and standards for the preparation, packaging and transportation of food. The conventional methods for detection of food contamination based on culturing, colony counting, chromatography and immunoassay are tedious and time consuming while biosensors have overcome some of these disadvantages. There is growing interest in biosensors due to high specificity, convenience and quick response. Nevertheless, till date, a very few biosensor systems are available commercially such as Biacore, Spreeta, Reichert SR 7000, Analyte 2000, RAPTOR etc. Since, there is ever growing concern regarding safe food and water supply, it is very obvious that the demand for rapid detecting biosensors will also be increasing at par. This paper reviews the basic fundamentals of biosensor and its application in food industry.

Cold Plasma as a Novel Food Processing Technology

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Abstract: Plasma is a state of matter similar to gas in which a certain portion of the particles are ionized. It is widely used for industrial materials processing, and has recently shown promise as a sanitizing tool. This is largely due to new technologies which easily produce non thermal plasmas (NTPs) at normal atmospheric pressure. Cold or Non-thermal plasma (NTP) is a novel food processing technology that uses energetic reactive gases to inactivate contaminating microbes on the surface of fresh and processed foods and even packaging materials at or near room temperature. Devices that have been used for plasma generation include corona discharges, micro hollow cathode discharges, gliding arc discharge, one atmospheric uniform glow discharge, dielectric plasma needle, barrier discharge and atmospheric pressure plasma jet. The combination of electron and ion bombardment, thermal effects, free radical and local exposure to UV all act in concert to disrupt bacterial cell membranes, denature proteins and damage bacterial DNA. This technology is increasingly finding acceptance among food processors for the surface sterilization and combating biofilm formation. Application of this technology for processing dairy products and studying the combined effect of cold plasma with other processing technologies offer immense potential for research. However, only limited information is available about the nutritional and chemical changes in food products treated with this technology. Hence this is a promising technology which is the subject of active research to enhance the safety of foods. An overview of the cold plasma technology is presented with its potential applications in food processing sector.

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In-Line Sensors Used In Food Processing Industry

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Abstract: Food production and processing has evolved into a global system that is complex, immense and rapidly changing. Producers and processors require methods to trace raw materials, determine purity and/or adulteration, validate safety, optimize utilization of raw materials, monitor quality of product produced and incorporate process sensors and mathematical models to modify processing conditions in real time. Developments are emerging to address the needs identified by food processors. The food industry has generally lagged behind other process industries in the use of sensors and related microprocessor control instrumentation. Smart sensors can also contribute to the efficient use of resources in other parts of the food supply system. Sensor technology is a crucial element for assessing the quality and traceability of raw materials, intermediates and final products throughout the entire food chain. Within the area of food processing, sensors are used for the design, control and optimization of the manufacturing processes including storage. Improved process control contributes to food chain sustainability through optimization of product quality, including reduction of quality losses and defects, as well as reduced consumption of water, energy and high-value ingredients. Use of various sensors assesses the quality parameters and properties of the products by direct or indirect measurement of the parameter and produce precise results.

Role of Machine Vision System in Food Quality and Safety Evaluation

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Abstract: In India the ever-increasing population, losses in handling and processing and the increased expectation of food products of high quality and safety standards, there is a need for the growth of accurate, fast and objective quality determination of these characteristics in food products continues to grow. Number of mechanized processing lines has been developed for commercial production. But the visual inspection and quality control is done by human eyes. Human inspection is a slow process, has poor repeatability and result varies from person to person. Machine vision system (MVS) is an image processing/analysis technique which is used for objective evaluation of quality parameters. Its speed and accuracy satisfy ever increasing production and quality requirements, hence aiding in the development of totally automated processes. Mass production of food was also associated with two major problems. The first one is the decline in food quality, and the second one is the “waste” problem associated with processing and preparation operations. The wastage in many cases is a direct consequence of the quality problem, where the quality decline reaches unaccepted limits. Hence, is the need for quality inspection and assurance mechanisms to be installed in the production lines of such mass food processing and producing plants.

MVS can perform many functions simultaneously in a food processing line such as segregation by species, by size, by visual quality attributes, determination of composition, volume, measurement of shape parameters, and quantification of the meat colour, automated portioning and detection of defects. MVS system is also being used in food industry for the detection of defects in apples, oranges, olives, cherries etc., sorting of potatoes, online monitoring of baking conditions, measurement of browning in chips. It is also being used for checking ripening stages of banana, tomato, cherries etc. Also it can be used to classify different varieties of cereal grains and check their adulteration. MVS considered as investigative tool to evaluate the functional properties and quality attributes such as shrinkage, texture and colour of cheddar and mozzarella cheese. This paper critically reviews the progress and application of MV technology in the food industry with a special emphasis on meat, poultry, seafood, and other foods. Recent developments in MVS and supporting technologies has resulted in general acceptance of the feasibility and profitability of implementing visual inspecting systems in quality assurance operations.

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Sensory Instruments and Its Application in Dairy and Food Industry

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Abstract: The demand for sensor arrays in the dairy and food industry is growing because the versatility and ease of operation of those instruments make them appropriate for fast and accurate analysis of various products or for monitoring quality in the production process. The commercial electronic tongue can be used for the evaluation of various products in the dairy industry. The concept of electronic tongue or taste sensor has been developed rapidly in the last decade due to their large potential in food quality control. The electronic tongue is based on electrochemical sensors combined with multivariate data analysis. The electronic tongue uses a sensor array with partially overlapping selectivity to get information on quality parameters such as sample condition, the state of a process, or expected human perception. Sensors forming the array should exhibit various selectivity patterns to minimize correlation between sensor responses, which provides more information about the sample. Millions of nonspecific olfactory receptors are located in the nose and tongue which respond to various substances in gas or liquid form. The signal is transmitted to the brain where olfactory neurons process the signal and the image of the sensed substance is formed. As the electronic tongue classifies particular properties in complex systems, the results are not necessarily compared to human sensation but with other quality properties in a sample. The use of sensor arrays in food analysis grew rapidly in the last decade. It has been used in wine analysis, honey classification, soy

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sauce analysis, water analysis and other beverages like soft drinks, beer, tea, coffee and milk. Other uses, which do not include food analysis, are microbial species detection, heavy metals detection, rare earth metal ion detection and ion detection. Sensor arrays combined with multivariate data analysis are a powerful tool for monitoring quality control in various fields of dairy industry. Both the electronic nose and electronic tongue were used in the assessment of dairy products.

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Chemical Unit Operations for Wastewater Treatment

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Abstract: Chemicals are used during wastewater treatment in an array of processes to expedite disinfection. These chemical processes, which induce chemical reactions, are called chemical unit processes, and are used alongside biological and physical cleaning processes to achieve various water standards. In waste water treatment, coagulation and flocculation are employed to separate suspended solids from water. Chemical precipitation is a method of wastewater treatment. Wastewater treatment chemicals are added to form particles which settle and remove contaminants. Oxidation and reduction reactions, or redox reactions, are those chemical reactions in which the oxidation state of the reactants changes during the reaction. Disinfection refers to selective destruction of disease-causing organisms in the water supply or in wastewater effluent.

Chlorination is a treatment which reduces the population of organisms in the wastewater to levels low enough to ensure that pathogenic organisms will not be present in sufficient quantities to cause disease when the wastewater is discharged. Ion exchange is also used as a chemical treatment for waste water. In this article various chemical unit operations for waste water treatment are discussed.

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Biological Unit operation for waste water treatment: Aerobic Process

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Abstract: Dairy is one of the major industries causing water pollution. Considering the increased milk demand, the dairy industry in India is expected to grow rapidly and have the waste generation and related environmental problems are also assumed increased importance. Poorly treated wastewater with high level of pollutants caused by poor design, operation or treatment systems creates major environmental problems when discharged to the surface land or water. Aerobic biological treatment methods depend on microorganisms grown in an oxygen-rich environment to oxidize organics to carbon dioxide, water, and cellular material. Activated sludge is used to indicate the sludge which is obtained by settling sewage in presence of abundant oxygen. The activated sludge is biologically active and it contains a great number of aerobic bacteria and other microorganisms which have a got an unusual property to oxidize the organic matter. The activated sludge process has been employed extensively throughout the world in its conventional form and modified forms various unit operations like physical, chemical and biological can play vital role in reduction of the waste water. Aerobic treatment of biological waste water like activated sludge, trickling filter, RBC, aerated lagoon with advance aerobic treatment unit SBR and summary of aerobic treatment unit with advantages and disadvantages are to be discussed in article.

Approximation of Functions by Bernstein Operators

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Abstract: The demand for sensor arrays in the dairy and food industry is growing because the versatility and ease of operation of those instruments make them appropriate for fast and accurate analysis of various products or for monitoring quality in the production process. The commercial electronic tongue can be used for the evaluation of various products in the dairy industry. The concept of electronic tongue or taste sensor has been developed rapidly in the last decade due to their large potential in food quality control. The electronic tongue is based on electrochemical sensors combined with multivariate data analysis. The electronic tongue uses a sensor array with partially overlapping selectivity to get information on quality parameters such as sample condition, the state of a process, or expected human perception. Sensors forming the array should exhibit various selectivity patterns to minimize correlation between sensor responses, which provides more information about the sample. Millions of nonspecific olfactory receptors are located in the nose and tongue which respond to various substances in gas or liquid form. The signal is transmitted to the brain where olfactory neurons process the signal and the image of the sensed substance is formed. As the electronic tongue classifies particular properties in complex systems, the results are not necessarily compared to human sensation but with other quality properties in a sample. The use of sensor arrays in food analysis grew rapidly in the last decade. It has been used in wine analysis, honey classification, soy sauce analysis, water analysis and other beverages like soft drinks, beer, tea, coffee and milk. Other uses, which do not include food analysis, are microbial species detection, heavy metals detection, rare earth metal ion detection and ion detection. Sensor arrays combined with multivariate data analysis are a powerful tool for monitoring quality control in various fields of dairy industry. Both the electronic nose and electronic tongue were used in the assessment of dairy products.

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Emerging and Alternative Refrigeration Technologies for Food Industries

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Abstract: The food industry relies heavily on the vapour compression refrigeration cycle for food preservation and processing. To reduce the environmental impacts of vapour compression systems that employ hydrochlorofluorocarbons (HCFCs) and hydrofluorocarbons (HFCs) as refrigerants a number of alternative systems and technologies are being developed that offer the potential for lower GHG (Green House Gases) emissions. Refrigeration has become an essential part of the food chain. It is used in all stages of the chain, from food processing, packaging, to distribution, retail and final consumption in the home. The food industry employs both chilling and freezing processes where the food is cooled from ambient to temperatures above 0°C in the former and between -18°C and -30°C in the latter to slow the physical, microbiological and chemical activities that cause deterioration in foods. In these processes mechanical refrigeration technologies are invariably employed that contribute significantly to the environmental impacts of the food sector both through direct and indirect greenhouse gas emissions. To reduce these emissions, research and development worldwide is aimed at both improving the performance of conventional systems and the development of new refrigeration technologies of potentially much lower environmental impacts. These alternative approaches and future technologies that could be used to reduce the energy consumption and GHG emissions associated with the refrigeration of food. The emerging refrigeration technologies have also potential to reduce the environmental impacts of refrigeration in the food industry.

Sensory Instruments and Its Application in Dairy and Food Industry

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Abstract: The approximation of functions by Bernstein Operators-

The intension of this paper is to describe a construction of the Bernstein polynomials, which enables us to get the approximation of Bernstein polynomials with $\sin 4\pi x$ on $[0, 1]$ and related problems concerning approximation properties of Bernstein polynomials $\beta_n f(x)$ of some function f on $[0, 1]$.

Technologies for Aromatics Extraction and Production of Food Grade Hexane and Petrochemical Grade Hexane

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Abstract: Solvent extraction is a versatile separation tool and used extensively in chemical processing industries including metallurgy, nuclear, petroleum, food, pharmaceutical and also for waste management. Generally it is used only second to distillation for the separation of close boiling components and azeotropic mixtures, since in these cases distillation either requires too many stages/too high reflux ratio or may not be feasible at all. For these applications solvent extraction is preferred route, as criteria for separation is based on chemical structure rather than boiling point.

In petroleum industry solvent extraction is used for, either to produce pure aromatics from reformat and hydrogenated pyrolysis gasoline and/or dearomatizing the straight run streams for the production of on spec products with respect to aromatic content for particular end uses. Typical applications are for the production of pure benzene and toluene, food grade hexane, special boiling point solvents, superior kerosene and aviation turbine fuel.

Heavy Metals Contamination in Soil and Mushroom Samples

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Abstract: The concentrations of heavy metals in the soils and mushroom samples collected from Sonipat, India have been determined by flame atomic absorption spectrometry after acid digestion. All element concentrations were determined on a dry weight basis. A total of 2 species of mushroom was studied. In both species - Agaricus bisporus and Pleurotus sajor caju, Zn was found to be highest 72.7 mg/kg and 78.5 mg/kg respectively. t – Test and One Way ANOVA were applied to find variations in different mushroom and soil samples respectively. High automobile traffic was identified as the most likely source of the contamination as there was no other nearby source of metal pollution. Based upon the safety standards, consumption of those mushrooms that grow in the polluted urban area should be avoided.

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Queuing Theory and Its Experiential Analysis Based on the Observed Frequency

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Abstract: The aim of this paper is to review Queuing Theory and its experiential analysis based on the observed frequency of checking out sales service unit Vishal Megha Mart Moradabad. The main contribution in the application of a mathematical model is to measure the queue length in multiple (three) checkout sales service counter and the service rate provided to the customers while checking out. We will also analyze two different queuing models single-queue multiple-server unit and multiple-queue multiple-server unit model.

A Kinetics Study of Solvent Effect on Thermodynamics Activation Parameter on alkali catalyzed Solvolysis of Methyl Salicylate in water-DMF Media

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Abstract: A kinetic study on Thermodynamic parameter of solvolysis reaction of methyl salicylate in water-DMF solvent system using different concentration of DMF (v/v) was made at four different temperature i.e. 20° C, 25° C, 30° C, 40° C.

It was observed that with increasing concentration (mole %) of the organic co-solvent in the reaction media, the ΔH^* and ΔS^* values of the reaction goes on descending while ΔG^* value goes on enhancing. Hence, it was inferred that the reaction was entropy control.

The evaluated values of Iso-kinetic temperature are come to 202.62, which is less than 300, indicate weak interaction between solvent and solute present in the reaction media.

Duality and Optimality Conditions in Ultiobjective Programming

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Abstract: The aim of this paper is to expose the recent evolution in the field of optimization techniques and their applications. We shall explore the first, second order optimality and duality. The results will be used for multi objective generalized second order symmetric dual programs containing a support function.

Spectral Analysis of River Ramganga Hydraulics Using Discrete Wavelet Transforms

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Abstract: In the forecasting of something whatever it may be weather forecasting or results of the share marketing, etc. trend of raw data has an important role. In a given signal, trend is the most important part and also slowest part of a signal. In wavelet analysis terms, this corresponds to the greatest scale value. Discrete Meyer Wavelet (dmey) is orthogonal and compactly supportive and therefore, it is useful for multiresolution analysis of a signal. To sustainable management of freshwater ecosystems and understanding of the basic physical, chemical and biological components, there functions and interrelationship are necessary. We analyzed the unknown trend of the time series of TDS (Total Dissolved Solids) and EC (Electrical Conductivity) of river Ramganga water of the time period from 2005 to 2008 by discrete Wavelet transforms. In the present paper an attempt has been made to evaluate the selected parameters by applying Wavelet analysis techniques to diagnose the water quality problems. In order to carry out in-depth investigation 9 sampling stations at different segment of river Ramganga are selected on the basis of varied topographical conditions, agricultural, social patterns and on the locations of various large and small scale industries and also on the basis of human settlements.

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Effect on Ground Water Level with Increase in Car ownership in New Delhi

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Abstract: The aim of this research is to forecast the level of car ownership and its effect on ground water level of New Delhi, capital of India up to 2025. The forecasting is based on the model proposed by Tanner in 1982 for USA based on Gompertz and logistic distribution, for which data of car ownership of Delhi from 1970-2005 has been collected and same for ground water level. It has been observed that car ownership will increase up to 17 person in every 100 person and at the same time ground water level will decrease up to 117 m average in 2021. This research will help policy maker in two senses , first one is It will help to take steps in order to maintain the level of ground water and at the same time it will help policy maker and researcher in field of transport , energy and road for realistic view of the subject and for taking proper strategy .

Ultrasonic investigation of Polymethylmethacrylate with Acetic Acid

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Abstract: Polymethylmethacrylate in solid form is used to prepare its solution with acetic acid at different concentration in different temperature range, 30° C-65 °C to measure density, viscosity and ultrasonic velocity using ultrasonic interferometer at 1 MHz frequency. Using these measured values different acoustical parameters like ultrasonic absorption and intermolecular free length have been measured for solution of Polymethylmethacrylate with acetic acid under different conditions of temperature and concentration. Variation of these parameters as mentioned above with respect to temperature and concentration are used to understand the molecular interactions

Nanoscience used for Urine Filtration and Self Flushing Toilets

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Abstract: Nanoscience deals with particles which have size 1 to 100 nm in dimension. This property could be used for filtration process of basic human waste i.e. Urine which has 95% water content and contains other dissolved salts like urea, chloride, sodium, potassium, creatinine and other elements which are secreted due to digestion of food. Urine got its name due to the presence of urea (NH₂CONH₂). If we are able to extract this urea from urine then it could be used as a fertilizer in agricultural fields, besides this the water extracted from it could be used back in the flushing process thus to save water

Here the nanoscience comes into picture to make filters having minute pores to filter off urea and other dissolved salts from urine nanofiltration is a process in which filter is made up of nano-particles having pore diameter of 1 to 10 nanometers and pore density of 1 to 10⁶ pores per cm²..

Spectral Analysis of Time Series of TDS, SD and EC of Ramganga River Water using Discrete Wavelet Transforms

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Abstract: In the forecasting of something whatever it may be weather forecasting or results of the share marketing, trend of raw data has an important role. In a given signal, trend is the most important and slowest part of the signal. In wavelet analysis terms, this corresponds to the greatest scale value. Discrete Meyer wavelet (dmey) is orthogonal and compactly supported and therefore it is useful for multi resolution analysis of a signal. To sustainable manage freshwater ecosystems an understanding of the basic physical, chemical and biological components, their functions and interrelationship are necessary. We analyzed the unknown trend of the time series of TDS (Total dissolve solids), SD (sediment discharge) and EC (electric conductivity) of water taken from river Ramganga of the time period 2005-2008, by discrete wavelet method. In present paper an attempt has been made to evaluate the selected parameters by applying wavelet analysis technique to diagnose the water quality problems. In order to carry out in depth investigation, nine sampling stations at different segments of river Ramganga are selected on the basis of varied topographical conditions, agricultural, social pattern and on the locations of various large and small-scale industries and also on the basis of human settlement.

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A Study on pH Sensing Property of Carboxymethyl Guar Gum /Silver Nanocomposites

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Abstract: Some metal nanoparticles have been used as the colorimetric gauges for estimating solution pH and other sensing properties. This application of these metal nanoparticles is due to localized Surface Plasmon (LSP) or the Surface Plasmon Resonance. This study describes the pH sensing property of Carboxymethyl guar gum/silver nanocomposites (CMGG/Ag NC). For this CMGG/Ag NC was synthesized by the method mention in our previous paper. The pH sensing property of the NC was studied by using UV-vis spectrophotometer. An optical and visual change in the CMGG/Ag NC solution was analysed with the change in pH range from 1-14. The results show that CMGG/Ag NC have a nice ability for pH sensing applications at room temperature.

Comparative Analysis of Dividend Forecasting Methods

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Abstract: Dividend Forecasting is a technique using which the future cash flows of a dividend paying stock can be found. Dividend is that part of the profits which the company distributes amongst its investors. Dividend Forecasting is an emerging field in stock market as it allows the shareholders to make wise decisions in buying and selling the stock and also predicts the performance of the company in the near future. With algorithm trading gaining a lot of popularity these days, technology has already started to govern the most complex financial markets of the world. And that is why a variety of techniques have been used to forecast the dividends. This paper presents a comparative study of the various approaches for dividend forecasting. In this paper, experiment with various techniques of forecasting dividend yields on secondary data of *Infosys* was done. The statistical packages of SPSS and Microsoft Excel were used for the analysis. The results of the study reveal that HP Filter with parameter $\alpha = 3200$ gave the maximum accuracy of 80.30% with other methods giving relatively closer but lesser accuracies for the chosen dataset.

Analyzing and Forecasting the Mobile Teledensity Growth in India

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Abstract: Telecommunications industry is vital for the economic growth of any country, as it helps promote international trade as well as social, economic and regional development. Mobile phones which were introduced in 1995 in India, have now become the dominant means of communication. The number of mobile phone subscribers has increased from 0.03 million in 1995-1996 to 867.8 million in 2012-2013, leading India to become one of the world's fastest growing mobile markets. The main aim of this paper is to analyze the various factors involved in the diffusion of mobile phones in India from 2004-2013 and then forecast the future rate of growth of mobile teledensity till 2023. A regression equation has been established for the teledensity across 21 Indian states. Various non-linear models have been studied, and under assumed saturation level, the logistic distribution function is used for forecasting the growth of mobile phone subscribers in India. The projected growth in the mobile subscriber base which will have important implications for the future growth strategies of telecom companies, handset manufacturers and vendors

Mathematical Modelling of Crop Yield Forecasting and Forewarning of Pests/Diseases

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Abstract: A full-fledged algorithm for performing statistical forecasting and estimating the agricultural yield for a variety of Rabi and Kharif crops has been developed. A model for forecasting of crop yield based on historical data and pertinent external climatic information was developed. The technique included development of suitable weather indices which were used as regressors in the model, determining their suitable weights for the true determination and minimizing the error term.

Apart from the crop produce, pests and diseases, major factors limiting the production, are also influenced by weather conditions. Therefore, an ordinal logistic model was developed for forewarning of important pests/diseases in rice, mustard, pigeon pea, sugarcane, groundnut, mango, sugarcane, cauliflower, sorghum, banana, citrus, soyabean and cotton at various locations. The forewarnings through these models can prove to very useful in taking timely control measures. Finally, to facilitate a graphical user interface for the rural community, a windows based application was developed for the same.

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Characteristics of Ground Water in and Around Sambhal (Uttar Pradesh)

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Abstract: Water samples from five underground water sites of public places in and around Sambhal district were collected and analyzed for different physico-chemical characteristics of water following standard methods and procedures of sampling and estimation. The water is noticed to be very hard, alkaline and full of chemical and biological pollutants. The water bears alarming concentrations of iron and solids. The ground water of study area was found to be polluted at all the sites with reference to almost all the parameters studied. The present study suggests that people exposed to this water are prone to health hazards of polluted water and ground water quality management is urgently needed for the study area

Observation of self excited Dust acoustic waves (DAW) in Strong-Coupling regime

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Abstract: We report experimental observations of self excited DAW propagation in strongly coupled dusty plasma. These DAW were produced by mixing a small amount of magnesium di oxide dust with alumina dust grains. The wavelength of the DAW was measured from single frame video images of scattered light from the dust grains. The results are compared with available theories.

Impacts of Science and Technology on the Environment

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Abstract: Whether it is the food we eat, the clothes we wear, the house we live in, or any other goods and services we use on a daily basis, almost everything is the gift of science and technology. Our current life is impossible without the aid of science and technology. Science is the word which is used to refer to an effort to discover and increase the understanding of humans about the physical world. On the other hand, technology deals with use and knowledge of tools and crafts to control the environment. Technology and science support our society by helping us to develop certain facts and discover new methods of living but at the same time it brings harmful and negative effects to our environment. The excessive commercialization of scientific inventions and their use for destructive purposes have made human life more threatening than ever. As it is said every coin has two sides, science also has positive and negative effects on environment. The negative effects of technology are numerous. In our march to progress, we have degraded the natural world. Forests are chopped down, topsoil is washed away, rivers are polluted and our waste is dumped in the oceans.

Environmental Penalties, that human beings facing today are -

- Pollution (noise, air, water).
- Conversion of forests land to urban areas.
- Pollute human psychologically and emotionally- the usage and addiction of new gadgets.
- Fatal Births and diseases- health effects of overused technologies.

Thus, society must consider the relative costs and benefits of new technologies.

Assesment of Water Quality of Ram Ganga River in Moradabad District, Uttar Pradesh, India

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Abstract: Pollution of river water is one of the areas of major concern to environmentalists. Rapid industrialization, urbanization and modern agriculture activities have direct impact on water resources. These factors effect the water resources quantitatively and qualitatively. The study area selected were the Ram gnaga river of Moradabad district, Uttar Pradesh, India. The river water is an important source of potable water supply for the city as well as adjoined areas of the district for all purposes. The physico-chemical parameters like pH, turbidity, total hardness, alkalinity, BOD, COD, content in water of Ram ganga river were studied to ascertain the drinking and domestic as well as irrigation water supply in Moradabad district. In the present study water quality of River is taken into account and river water is found to be severely polluted with reference to these analyzed parameters.

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A Mathematical Approach for Ordinary Differential Equation in p/q Form with Integer Value

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Abstract: Ordinary differential equations, form of p/q are a field of mathematics study that emanate of the standard definition of integral and derivative operators in fractional exponents is an outgrowth of exponents with integer value. This paper presents a reliable approach for solving fractional differential equation. The FDEs or ODEs of a system with intial conditions to be solved are transformed to Volterra integral equation. The fractional derivatives are considered in the Riemann-Liouville Theorem. This paper is tries to solve their approximate solution of fractional differential equations with numerical problems.

Optimal Scheduling with Transportation Time and Equivalent Item for Item-Block

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Abstract: The present chapter is devoted to study a scheduling problem with two machines arranged in series with transportation time and with the concept of equivalent item for item block. In order to transport the processed job from first machine to second there is a single transport agent, which returns empty to first machine to carry next job after processing. Further, an optimal solution has been obtained for the scheduling problem involving weighted items and breakdown interval. The proposed algorithm has been applied on a numerical problem.

Mathematical Study of Reliability and MTTF of Industry under Common Cause Failure

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Abstract: In this present paper is deal with a mathematical study of reliability and MTTF of an industry under common cause failure system. A system which consists of four subsystems, A, B, D and E connected in series. Subsystem A and B have two units in series, failure of either of the two causes complete failure of the system. Subsystem D has only one unit in series with B1 and B2. Subsystem E, the heat exchanger has two units connected in parallel redundancies. Failure occurs only when both the units fail. By using supplementary variable technique, Laplace Transforms of the probabilities, being in various states, as well as up and down states of the system have been obtained along with steady state behavior and MTTF of the system. MTTF has also been discussed graphically.

Effect of Heat Source on Mixed Convection of Non-Newtonian Fluids through Porous Medium along A Heated Vertical Flat Plate

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Abstract: The present chapter is devoted to study a scheduling problem with two machines arranged in series with transportation time and with the concept of equivalent item for item block. In order to transport the processed job from first machine to second there is a single transport agent, which returns empty to first machine to carry next job after processing. Further, an optimal solution has been obtained for the scheduling problem involving weighted items and breakdown interval. The proposed algorithm has been applied on a numerical problem.

Analgesic and Anti Pyretic Potential of Methanolic Root Extract of *Withania Somnifera*

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Abstract: This study was aimed at evaluating analgesic and antipyretic potential of methanolic extract of *Withania Somnifera*. Roots of *Withania Somnifera* were collected from in the month of June, 2012 from Venkateswara University, Tirupati, and Andhra Pradesh, India. The plant was identified and authenticated by the Department of Botany, Sri Venkateswara University, Tirupati, Andhra Pradesh, India. Roots were collected, dried, powdered and extracted with Methanol.

Gastro Retentive Floating Microspheres a New Trend of Drug Delivery System

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Abstract: The purpose of writing this review on microspheres is to compile the recent literature with special focus on the principal mechanism of floatation to achieve gastric retention. Microsphere promises to be a potential approach for gastric retention. Floating drug delivery systems are designed for the poorly soluble, unstable and locally acting drugs in the G.I.T and they have low bulk density than the gastric content also they float in the stomach for a prolonged period of time. From this the designing of floating microspheres is one of the approach in delivering a dosage form to the target site in sustained controlled release fashion, to achieve good peak plasma concentration by increasing bioavailability of drug or dosage form. In the floating microspheres, the drug loaded microspheres come in contact with gastric fluid the gel formers, and polymer hydrates to form a colloidal gel barrier then controls the rate of fluid penetration into the device and consequent drug released by the swollen polymer lowers the density and float in the stomach.

Gastro Retentive Ethyl Cellulose Floating Microspheres Containing ATENOLOL

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Abstract: Controlled release (CR) dosage forms have been extensively used to improve therapy with several important drugs. Incorporation of the drug in a controlled release gastro-retentive dosage forms (CR-GRDF) which can remain in the gastric region for several hours would significantly prolong the gastric residence time of drugs and improve bioavailability, reduce drug waste, and enhance the solubility of drugs that are less soluble in high pH environment. Several approaches are currently utilized in the prolongation of the GRT, including floating drug delivery systems (FDDS), swelling and expanding systems, polymeric bioadhesive systems, high-density systems, modified-shape systems and other delayed gastric emptying devices. In this review, current & recently developments of Stomach Specific FDDS are discussed that helps to overcome physiological adversities like short gastric residence times and unpredictable gastric emptying times

Recent Advances in the Complementary and Alternative Medication: How Far Will it Go in Future

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Abstract: The complementary and alternative medication has taken up a great market in medication and healthcare, worldwide. The patients as well as the doctors believe in treating a disease not only with drugs but also with holistic approaches like the will power of the patient being cured and other herbal and alternative methods. Yoga, meditation and acupuncture techniques are playing their roles since a very long time. A study shows that about 80% of the total population relies on alternative techniques to relieve themselves from pain and other health related issues. We can also fight with various adverse drug reactions by using different complementary and alternative medications. It not only cures a disease but also brings changes in the lifestyle of the patients towards safe and healthy life ahead. The studies conducted on the needs and demands of this type of medication have proven that the future of complementary and alternative medication has a long way ahead. Although, the regular drug therapy shall never be avoided.

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Pharmacognostical, Phytochemical and Physicochemical Standardization of Madhuca Lonigfolia

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Abstract: Madhuca longifolia commonly known as mahua belongs to family Sapotaceae. It is also known as the butter nut tree. Madhuca longifolia is used as stimulant, emollient, demulcent, astringent, anti-tumour, anti-implantation, uterotonic, nutritive, anti-progestational, spasmogenic, antiestrogenic activity, anti-cancer and anti-bacterial, antiepileptic. The bark of Madhuca longifolia is used in the treatment of ulcers, tonsillitis, rheumatism, and bleedings. Pharmacognostical investigations were carried out by performing organoleptic, microscopical and physico-chemical evaluations i.e. ash values, extractive values, moisture content, swelling index and foaming index. Total ash, acid insoluble ash, water soluble ash and sulphated ash were found to be 10%, 15%, 61.66% and 0.1% respectively. The cold extractive values obtained from different solvents i.e. petroleum ether, chloroform, ethyl acetate, ethanol and water were found to be 2.0%, 2.0%, 2.0%, 12.0% and 16.0% respectively while the moisture content was found to be 0.44%. Similarly swelling index was recorded to be 0.046 cm, foaming index (more than 100). Preliminary qualitative phytochemical screening revealed the presence of carbohydrates, tannins, phenolic compounds, alkaloids, glycosides, flavonoids.

Analysis of the Scope of Improvement in Randomly Selected Label Information of Drug Containers

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Abstract: This survey was conducted to analyse on the wide-scope of improvement in manufacturer's way of presentation so that maximum benefits can be achieved by patient.

Methodology:

The study was conducted on 50 drugs of which randomly selected five drugs of each of 10 different categories as mentioned further, of which the product and patient related information depicted were analysed and scored regarding 10 different attributes such as patient Information Leaflet, prescription Information, composition, quality of product packaging etc .

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Language in the domain of Gender: A Critical Perspective

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Abstract: This paper explores the manner in which language is modified when it enters the domain of gender thereby reinstating power relations that exist in society and culture. Language is the vehicle for expression of thoughts, ideas and emotions. As language and gender crisscross each other, the issue of "appropriateness" or "suitability" is governed by social and cultural filters that play a significant role in differentiating between right and wrong. Hence, the stereotype of a female chatterbox/ gossipy woman versus the silent man become indicators of qualities that are considered good and bad. Funny jokes centring around such stereotypes strongly comment upon the implicit relationship between language and gender and how they affect each other. In the entire process language is modified and expression curtailed in order to conform to the standards of suitability already decided by established norms.

Technological & Educational Advancement in Indian Society

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Abstract: India is a country where God has provided everything in abundance that is more than the need of all the breeds including plants and animals too. Here the residents of India enjoy all the six seasons i.e. Basant Ritu or spring, Grishma Ritu or Summer, Varsha Ritu or Monsoon, Sharad Ritu or Autumn, Hemant Ritu or Pre-winter, Shishir Ritu or winter, etc. and All types of terrains are available from hills, plains, valleys, sea coast etc. India is among one of the few countries where human civilization started flourishing as early as in any other parts of the world. Indian civilization is more than five thousand years old (Indus valley - Rig Vedic - Mahajanpadas or Aryan - Muslims - Europeans) and people of all later civilizations absorbed some of the socio-cultural economic & political traits of earlier ones. It is the country where people started writing (though on tablets, statues etc.) and expressed their feelings as early as five thousand years back. The progress of writing was from pictographic (not read yet) symbols then Sanskrit on metal sheet, Pali on stone pillars, Hindi and other regional languages like Tamil, Telugu, Urdu, Malayalam, Assamese on Bhojpatra, wood etc. and later on papers. People of India had involved themselves in various activities that are related to mental development and broadening of intellectual horizon. All the four Vedas, specially Rig-Veda is the oldest written book and since then we have never turned back and created grand progress in all spheres of life.

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Green Technology: A Future Solution

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Abstract: The need for development of affordable and safe ways of addressing global challenges, in areas such as energy, environment and health, has never been more pressing. The global demand for energy is expected to increase by more than 30% between 2015 and 2035. More than 800 million people worldwide are currently without access to safe drinking water. Such challenges have resulted in increasing attention being paid by policymakers, researchers, and corporations to new technologies, and the application of technologies in new ways. Green innovation is one such new way of addressing global challenges.

Green innovation is innovation which reduces environmental impacts by increasing energy efficiency, reducing waste or greenhouse gas emissions and minimizing the consumption of nonrenewable raw materials.

E- Book Revolution and Its Impact on the World of Reading

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Abstract: My paper tries to explore the major watershed ushered in by the concept of e-books. For centuries, agents and publishers have acted as gatekeeper of the printed word that gives authors access to a potential audience of millions. But a growing army of writers, emboldened by new technology and the proliferation of e-readers, are rejecting the traditional publishing model. In a race to become the iTunes of the publishing world, Amazon.com and Google have both developed systems to allow consumers to purchase online access to any page, section or chapter of a book. These programs combine their already available systems of searching books online with a commercial component that could revolutionise the way people read books. Some write for enjoyment, some for creative fulfilment, while others simply write to make money.

And for those lucky ones that get it right, the rewards can be substantial - e-book sales in the US grew by almost 50% last year and more than doubled in the UK, while traditional print book sales continued to stagnate or dwindle. But the amazingly simple-to-use and cheap gizmos, which store digital files of novels that you read like a printed book, are actually hitting their stride (and changing literature itself) only a decade after first appearing in Japan. That first e-book reader, the Sony Librie, went on sale for £210 in 2004. Now, e-readers are used by more than 100 million people globally. At the world's holiday destinations they have invaded sun-loungers at a speed that must have saved dozens of forests, in terms of Stieg Larsson novels alone. They're lighter, smaller and slimmer than a paperback, and the cheapest starts at £30. You don't need to connect them to a PC to make them work; books are downloaded over Wi-Fi (or 3G in some models) in seconds. They are incredibly economical on power, so batteries last a month or more.

E-readers mimic the experience of reading a paper book, which is why so many of us gravitate to them – and they even have a bar showing you how far through a book you've got, and how much is left to go (essential if you're nearing the end of a murder mystery). Even in bright sunshine, you can read the most gigantic airport novel on an e-reader without reaching for a Nurofen. Avid readers now just pack one grey slab, rather than kilos of tomes, as these tiny devices can hold enough novels to satisfy even the biggest bookworm. The paper tries to analyse the revolution brought by e-books in the future of the world of reading, its shelf life and many unforeseen challenges.

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Error Spotting: A Tool for Better Language Learning and Teaching

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Abstract: This paper is an attempt to explore the essential role and contribution of errors in language teaching and learning especially in the context of second language learners. The main objective is to understand how an enquiry into "errors" and "mistakes" can serve a double fold purpose- one, it can open a window into the mind of language learners, thereby increasing the chances of finding a breakthrough into the wall of existing mental/psychological barriers and secondly, it can lead to effective management of errors which can then be used as active tools for better teaching by language teachers and practitioners.

The significance of analysing the pattern of errors becomes even more important when enhancement of skills related to the second or third language teaching/learning is the central concern. The need to recognize the value of such errors arises from the fact that in most of the classrooms, the level of teaching is required to cater to a heterogeneous mixture of students coming from different social strata and cultural backgrounds. It is in view of this multiplicity of demand that recognition of errors and mistakes as contributors rather than obstacles should be considered in a positive framework.

English Pronunciation and Its Shortcomings: How to Overcome

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Abstract: The teaching of English as second language has always been a challenge for teachers. In India, we have large classrooms with more students coming from non-English speaking background. Their economic condition is not favorable and schools and institutes are not really equipped for teaching language properly. Students learn English as a Subject from the beginning of their schooling. This makes their understanding of language poor. English has to be taught as a language not as a subject. A language can be learnt by three genres: Reading, Writing and Speaking. Mainly the genre that effects is Pronunciation. Students learn speaking all by their own without expert speaking aid. Teachers also face problems of large classrooms so they can't give attention to each student and their pronunciation. Literature has its sublimity whereas language as a responsibility. Language teaching is not only for teaching, learning or passing the examination but for communicative purpose. The paper is an attempt to trace the problems and issues related Pronunciation in western Uttar Pradesh and Northern India. It includes problems of students and teachers both. The paper gives some useful suggestions and solutions for pronunciation mistakes with emphasis on the use of Pronchart at the beginning of English teaching. In the present era when technology has become indispensable part of teaching use of Pronchart are really easy and making wonderful innovations. It also suggests that pronunciation can be improved with muscular movements. Our facial muscles and their movements are important when we speak.

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Linguistic Imperialism and the Masses

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Abstract: The linguistic imperialism of English has brought positive changes in the cultural and educational scenario of the world. Its transcendence from a language of the elites to a global vernacular has been amazing. Colonization of countries by Britain introduced this language which gradually became popular as a second language. With time, knowledge of this language has become an absolute necessity for gaining employment at the world level. From native English to various Englishes and now Globblish (global English understood everywhere by everyone) it has been ever changing. The paper aims at presenting this lingua-franca of the world as a democratic language which now belongs to one and all.