GANDHI ACADEMY OF TECHNOLOGY AND ENGINEERING

Golanthara, Berhampur, Ganjam, Odisha- 761008

CONFERENCE PROCEEDINGS

A National Conference on "Recent Trends of Science and its Application in Engineering" (NCRTSAE- 2019)

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A National Conference on "Recent trends of Science and its Application in Engineering" NCRTSAE- 2019

Date: 12.11.2019

Organised by

GANDHI ACADEMY OF TECHNOLOGY AND ENGINEERING

Golanthara, Berhampur, Ganjam, Odisha- 761008

ABOUT THE CONFERENCE

The aim of this conference is to present a unified platform for advanced and multi-disciplinary research towards sustainable energy systems. There have been several recent trends in science and technology that are shaping our world and impacting the way we live our lives. The theme on a broader front focuses on recent innovation paradigms in feasible energy support and the most talked-about technologies in recent years. With advancements in deep learning and neural networks, AI is being used in a wide range of applications, from natural language processing to image recognition to autonomous vehicles. To forge interactions among active researchers in the area of sustainable energy systems, Department of Electrical Engineering in conjunction with Department of Mechanical Engineering, Civil Engineering, Electronics and communication Engg., Gandhi Academy of Technology and Engineering, is organizing a multidisciplinary International Conference on Emerging Trends in Sustainable Energy Systems.

ABOUT THE INSTITUTE

Begin its journey in the year 2009 at Berhampur, the Silk City of Odisha, Gandhi Academy of Technology and Engineering is managed by "Tarini Educational Trust". GATE, an Institute, is approved by AICTE New Delhi & Affiliated to BPUT, Rourkela, Odisha. The Institute works with a mission to provide quality education of international standards for producing technocrats and future leaders in a disciplined and conducive environment as an integral part of our social commitment to promote education globally. GATE offer graduate programmes in Mechanical Engineering, Civil Engineering, Electronics Engineering, Electrical Engineering and More than 900 graduate and post graduate students are being groomed here to excel in their area of specialization. GATE’s alumni have been well accepted by both public sector and private sector companies and many are holding important positions in their respective organizations.

The Institute works with a mission to provide quality education of international standards for producing technocrats and future leaders in a disciplined and conducive environment as an integral part of our social commitment to promote education globally.

CONFERENCE PROCEEDINGS

(ORAL & PAPER PRESENTATION)

Gandhi Academy of Technology and Engineering
Golanthara, Berhampur, Odisha- 761008

Dr. Satya Prakash Panda
Chairman

MESSAGE FROM THE CHAIRMAN

On behalf of the Gandhi Academy of Technology and Engineering (GATE), I extend a very warm welcome to all delegates and participants to the National Conference. GATE has borne the mantle of excellence, omitted to ensuring the students their own space to learn, grow and broaden their horizon of knowledge by indulging into diverse spheres of learning. In our endeavor to raise the standards of discourse, we continue to remain aware to meet the changing needs of our stakeholders.

Last but not the least; we would also like to thank the staff, faculty members, the Organizers and the students for their contribution in successfully organizing and managing this event. This event wouldn't have been possible without their guidance and constant support.

We welcome all of you to GATE and hope that, this national conference will act as a medium for all to ponder upon the topic of discussions, challenge us to strive towards it, and inspiring us to go ahead

Thank you!

Dr. Satya Prakash Panda

Gandhi Academy of Technology and Engineering
Golanthara, Berhampur, Odisha- 761008

Prof. (Dr.) Gouri Shankar Mohapatro
Principal, GATE

MESSAGE FROM THE PRINCIPAL

The conference is necessary to bring at the culture of information exchange and feedback on developing trends in technologies. I am delighted to note that Gandhi Academy of Engineering Technology is organizing the National Conference on "Recent trends of Science and its Application in Engineering". Certainly, this type of conference not only brings all researches, students in one platform, but it also inculcates the research culture among the entire fraternity of Education in the country, thereby contributing to the development of the nation.

I hope that this conference would certainly induce innovative idea among the participants paving way for new invention and technologies in the field of application of optimization techniques and stainable development in engineering sciences.

I Congratulate All Professors of GATE and the entire organizing team for initiating the conduction of such an important event at our institute.

I wish the conference a grand success.

Prof. (Dr.) Gouri Shankar Mohapatro

Gandhi Academy of Technology and Engineering
Golanthara, Berhampur, Odisha- 761008

MESSAGE FROM CONVENER

It gives me immense pleasure to invite all delegates, researches and students at Gandhi Academy of technology and Engineering (GATE), berhampur, Odisha india to the National Conference "Recent trends of Science and its Application in Engineering". New Technology are introducing every day that will radically transform the future of this fields. The aim of the conference is promote excellence in scientific knowledge and innovations in the diversified fields of science, engineering and technology to motivate young researches and students. It is also offer the budding researches to different opportunities to present their work in front of eminent experts of individual fields.

As the convener of the conference, I extend my gratitude to all professors, Invited speakers, Chief Guest, Guest of honour, Keynote speakers, National Delegates, Invited Faculty member, researcher and students coordinators fot their wholehearted participation in the national Conference. I would like to thank all advisory committee members, organizing committee and department faculty and staff members for their continuing support. I would like to thank all the authors and persons who directly or indirectly contributed their helping hand in the conference. Without their cooperation and full support, this conference would not have been possible

I wish the conference and the proceedings a grand success.

Dr. Santanu Kumar Das

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NCRTSAE- 2019

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Air–assisted liquid–liquid micro extraction; principles and applications with analytical instruments

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ABSTRACT

Air-helped fluid micro extraction is an example planning strategy having high extraction recuperations and advancement factors with related low natural dissolvable utilization. This strategy has tracked down wide acknowledgment among analysts because of various benefits, like effortlessness, minimal expense, what's more, availability in most scientific research centers. The current survey centers on improvements of the strategy since its creation in 2012. The utility of created strategy related to gas chromatography, elite execution fluid chromatography, nuclear ingestion spectrometry, and bright noticeable spectrometry is portrayed. The utilization of various solvents like ionic fluids, profound eutectic solvents, and natural solvents are thought of. Additionally, derivatization and rotator less strategies are evaluated. The overview of writing demonstrated the way that the strategy can be utilized as a proficient and strong method for extraction of various mixtures. The distributed reports on assurance of the extricated analytes by the strategy are basically investigated. Future patterns are additionally referenced.

1. INTRODUCTION

Prior to playing out an instrumental investigation, test pretreatment is a huge step. Test planning is for the most part performed to kill impedances and non-target compounds, or to coordinate the properties of the example to the prerequisites of a particular logical instrument. Ordinarily, preconcentration is required, especially when the grouping of analytes is exceptionally low. To accomplish these objectives, a basic way is to extricate the analytes from the grid. Fluid extraction (LLE) generally has been a favored technique for pretreatment of various examples in many fields. Attributable to low advancement factors (EFs) and utilization of broad dangerous natural solvents, need was felt throughout an opportunity to supplant it by elective techniques. Starting today, LLE stands overshadowed by strong stage extraction (SPE), which deals with primary burdens of LLE. In most SPE systems, the analytes are adsorbed onto a sorbent set in a cartridge. The adsorbed analyses are eluted utilizing a reasonable natural dissolvable and exposed to examination by a fitting procedure. SPE cartridges too have a few disservices, similar to they are costly and non-reusable. To conquer these downsides, a large portion of the new exploration exercises have zeroed in on minimization of extraction process by presenting strong stage micro extraction (SPME.

Selected Organ metallic Compounds for Third Order Nonlinear Optical Application

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ABSTRACT

In this paper, we present the third symphonious age reaction of Znq2 (Bis-(8-hydroxyquinolinato)zinc), Cuq2 (8-Hydroxyquinoline copper(II)), and Alq3 (Tris-(8-hydroxyquinoline)aluminum) organometallic compounds. An investigation was directed for s furthermore, p polarizations of episode shaft, utilizing the Creator borders strategy. The third request nonlinear powerlessness (3) was assessed utilizing the Kubodera and Kobayashi relative model, on the grounds that introduced intensifies display high straight retention of the created third symphonious frequency (355 nm). These edifices were saved as flimsy movies utilizing the actual fume affidavit (PVD) technique. Examined edifices change as far as the coordination community and number of quinoline ligands, which apparently impact their nonlinear reaction. The worldwide cross breed B3LYP utilitarian with the premise set 6-31G(d) was utilized in processing the straight and non-direct optical properties. The processed child esteem (8765.36 10^{-36} esu for Cuq2) is better than that of methylene blue (= 32.00 10⍰36 esu). The determined hypothetical qualities were viewed as in great arrangement with the trial results.

Keywords Organometallic compounds; nonlinear optic (NLO); physical vapor deposition (PVD); third harmonic generation (THG); coordination complexes; DFT/B3LYP/6-31G(d) calculations

1. INTRODUCTION

These days, an extraordinary number of scientists focus on the metal edifices that address promising possibility for nonlinear optics (NLO) [1]. These sort of mixtures pulled in colossal consideration because of their applications in various fields, for example, medication natural light-transmitting diodes (OLED) photovoltaic , and photonics and optoelectronics Organometallic compounds show potential as a third request nonlinear material, because of the significant charge move between the ligands and the metal, as well as the switchable nonlinearity that is connected with different electronic states of the focal metal iota . numerous isothermal tests are tolerant to restraint, evacuating the require for complex test planning strategies [1].

Synthesis and Glycan−Protein Interaction Studies of Se-Sialosides by ^{77}Se NMR

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ABSTRACT

To extend the capability of Se-sugars for multifunctional mimicry of sugars, thus we tended to the amalgamation of the exceptionally difficult and organically huge Se-glycosides of sialic corrosive (Se-sialosides). A α-sialyl selenolate anion created in situ flawlessly responded with electrophiles to give α-Se-sialosides as single stereoisomers. A Se-sialoside was successively consolidated with selenium, delivering a triseleno-sialoside. This particle was utilized as a ^{77}Se NMR-dynamic handle for contemplating glycan−protein communication, uncovering different restricting profiles of sialic corrosive restricting proteins

1. INTRODUCTION

The compound combination of seleno-glycosides (Se-glycosides) has been getting expanding consideration due to their adaptable biochemical potential.1 Se-Sugars, containing Se-glycosides, have prime restorative importance and act as key bioisosteres of ligands to starch restricting proteins.2 Their use as working atoms in the X-beam crystallographic examination is an essential device for contemplating carbohydrate−protein complexes.3 In expansion, the utility of Se-glycosides and glycosyldiselenides as NMR-dynamic handles and correspondents for concentrating on sugar conformities and carbohydrate−lectin communications by NMR spectroscopy has been as of late demonstrated.4 In any case, to completely saddle the capability of this class of carbs, the extent of accessible engineered strategies should be extended to permit the readiness of complex and organically huge Secarbohydrates. Furthermore, the advancement of systems for the consolidation of numerous selenium molecules into glycans is of prime significance to explain carbohydrate−protein connections including numerous collaborations between their utilitarian gatherings. Sialic corrosive containing glycans (sialoglycans) are notable for their changed bioactivities,5 and the present concentrate on addresses the union of Se-sialoglycans, which have never been incorporated. We report in this the combination of Sesialoglycans by means of stepwise fuse of a selenium iota into a Se-sialoglycan.

Analytical methods in food additives determination: compounds with functional applications

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ABSTRACT

Biomolecules are in consistent movement. To comprehend how they capability, andwhy breakdowns can cause infection, it is important to portray their three-layered structures as far as unique conformational troupes. Here,we exhibit how nuclearmagnetic reverberation (NMR) spectroscopy gives a fundamental, dynamic perspective on primary science that catches biomolecular movements at nuclear goal. We center around models that stress the variety of biomolecules and biochemical applications that are amiable to NMR, for example, explaining utilitarian elements in huge atomic machines, describing transient conformities ensnared in the beginning of illness, and getting nuclear level portrayals of characteristically cluttered districts thatmake frail connections engaged with fluid stage partition. At long last, we examine the significant job that NMR has played in driving forward how we might interpret the biomolecular elements capability worldview.

Keywords: Food additives, Analytical methods, Spectroscopy, Chromatography, Electroanalysis, Food control.

1. INTRODUCTION

Somewhat recently, the expanded populace and way of life changes advanced impressive changes in the definition of food items. Moreover, the change of the dietary patterns and adjustment in the nourishing requests caused a significant change in the food enterprises, which included the consolidation of extra food fixings to food items. The motivation behind these mixtures (food added substances) is to add dietary nourishment (fortifiers) (Martins, Franco, Muñoz, and De Souza, 2017), increment the time span of usability and additionally to work on the physicochemical, sensorial and microbiological properties of the industrialized food varieties (Damodaran and Parkin, 2017). A huge assortment and amount of synthetic added substances are utilized in industrialized food sources, to keep up with and additionally work on the organic, physicochemical, rheological and sensorial properties, like pH, surface, homogeneity, variety, flavor, pleasantness, crunchiness, in general quality and steadiness, and to expand the expiry date. A plenty of compounds introducing explicit usefulness is utilized to accomplish these targets, advancing separated quality in industrialized food varieties.

Metal-Organic Frameworks based Gas Chromatographic Separation

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ABSTRACT

Metal-natural structures (MOFs) as novel permeable materials, have applied in different fields in light of their interesting designs and great properties. MOFs go about as fixed progressively eases in gas chromatography (GC), which has driven up to remarkable enhancements of execution. We synopsis the use of MOFs in GC in light of the grouping of analytes. The benefits and detachment instrument of MOFs as fixed progressively eases in GC are additionally talked about in the blend with the qualities and designs of MOFs. The constraints are additionally summed up in this audit, which can give possibilities on additional exploration to the uses of MOFs.

1. INTRODUCTION

Metal-natural systems (MOFs) are new practical materials with exceptionally systematic structure structures framed by selfassembling coordination between natural linkers and inorganic metal ions.[1-3] MOFs are brilliant permeable materials with the natural and inorganic properties, which not just show adsorption-based properties, yet in addition have the adaptability and designability of designs. The different designs and interesting properties make MOFs alluring for insightful applications. Customary inorganic permeable zeolites by and large have actually steady, and long-lasting permeable designs. In any case, the designs and geographies of zeolites, which are fundamentally made out of tetrahedral AlO4 and SiO4 units,[4] are exceptionally restricted. Additionally, as partition media in logical science, zeolites are difficult to be adjusted with various pore sizes and chiral gatherings. Accordingly, the use of zeolites is hampered in logical science in light of their straightforward constitution units. Contrasted and traditional inorganic permeable materials, MOFs offer the special properties with the most reduced thickness (0.13 g·cm-3),[5] the most elevated explicit surface region (10,400 m2·g-1)[6] and the biggest pore opening (98 Å)[7] because of the blend between inorganic bunches and natural ligands. Also, MOFs give an anticipated possibility that varieties of huge quantities of natural linkers and metal hubs offer custom-made materials through self-gathering, which is past the range of regular permeable materials. For instance, in the equivalent geography of design, the pore sizes of MOFs are by and large not entirely set in stone by the length of the natural linker, and different pores of MOF materials can be altered utilizing different natural gatherings while keeping up with similar geographies of structures.[8]

Analysis of Women Entrepreneurs in India

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ABSTRACT

Women entrepreneurship is gaining importance in India in the wake of economic liberalization and globalization. "In Indian mythology, woman is an incarnation of Shakthi-the Goddess of Power. We believe women empowerment is vital to our development" Honorable Prime Minister of India. The policy and institutional framework for developing entrepreneurial skills, providing vocation education and training has widened the horizon for economic empowerment of women. However, women constitute only one third of the economic enterprises. In today's world, women entrepreneurs are playing very vital role and they have become important part of the global business environment and it's really important for the sustained economic development and social progress. In India, though women are playing key role in the society, but still their entrepreneurial ability has not been properly tapped due to the lower status of women in the society.

Keywords: Introduction of Women Entrepreneurs, Reasons for the rise of Women Entrepreneurs, Government support schemes, Problems of Women Entrepreneurs in India, Reasons for women to become entrepreneurs, Conclusion.

1. INTRODUCTION

"In Indian mythology, woman is an incarnation of Shakthi-the Goddess of Power. We believe women empowerment is vital to our development" Honorable Prime Minister of India, Women entrepreneurship is gaining importance in India in the wake of economic liberalization and globalization. The policy and institutional framework for developing entrepreneurial skills, providing vocation education and training has widened the horizon for economic empowerment of women. However, women constitute only one third of the economic enterprises. Women Entrepreneurs may be define as the women or a group of women who commence and operate a business venture. . Like a male entrepreneurs a women entrepreneur has many functions. They should explore the prospects of starting new enterprise; undertake risks, introduction of new innovations, coordination, administration and control of business and providing effective leadership in all aspects of business. Government of India has described women entrepreneurs as an enterprise/venture owned and controlled by women having at least financial interest of 51% of the capital and giving at least 51% of employment generated in the organization to women.

Effect of Customer Relationship Management in Banking Sector, Bangalore Region

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ABSTRACT

Driven by challenges on competition, rising customer expectation and shrinking margins, banks have been using technology to reduce cost. Apart from competitive environment, there has been deregulation as to rate of interest, technology intensive delivery channel like Internet Banking, Tele Banking, Mobile banking and Automated Teller Machines (ATMs) etc have created a multiple choice to user of the bank. The banking business is becoming more and more complex with the changes emanating from the liberalization and globalization. For a new bank, customer creation is important, but an established bank it is the retention is much more efficient and cost effective mechanism. CRM is a sound business strategy to identify the bank's most profitable customers and prospects, and devotes time and attention to expanding account relationships with Banking Industry in India has undergone a rapid changes followed by a series of fundamental developments. Those customers through individualized marketing, reprising, discretionary decision making, and customized service-all delivered through the various sales channels that the bank uses. Under this case study, a campaign management in a bank is conducted using data mining tasks such as dependency analysis, cluster profile analysis, concept description, deviation detection, and data visualization. Crucial business decisions with this campaign are made by extracting valid, previously unknown and ultimately comprehensible and actionable knowledge from large databases..

Keywords: Customer Management, Banking sector, CRM

1. INTRODUCTION

Today, many businesses such as banks, insurance companies, and other service providers realize the importance of Customer Relationship Management (CRM) and its potential to help them acquire new customers retain existing ones and maximize their lifetime value. At this point, close relationship with customers will require a strong coordination between IT and marketing departments to provide a long-term retention of selected customers. This paper deals with the role of Customer Relationship Management in banking sector and the need for Customer Relationship Management to increase customer value by using some analytical methods in CRM applications.

Financial Sustainability of Indian Banking Sector

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ABSTRACT

The banking sector underwent paramount transformations since decades. It dates back to post first phase of Economic Liberalization of 1991 and NPA emerged as an upsetting intimidation in the nation sending adverse signals on the sustainability and insurability of the debt burden banks. Among many desirable well-functioning characteristics of the financial system, management of NPA is a significant one. The aggravation in the asset quality deterioration of the Indian banking sector came to the lime light gradually post financial crisis 2008 and by virtue of time span it touched the peak level. The story not being new, Government and RBI initiated multiple steps to curb down the upsurge in NPA, but did not result expectedly. The two concepts of Gross NPA (GNPA) and Net NPA (NNPA) are indicative of further slippages. Higher slippages can be compensated by proper provisioning norms and these being higher the profitability becomes a question.

Keywords: NPA, GNPA, Liberalization, RBI.

1. INTRODUCTION

Indian banking system is plagued by the surge in Non-Performing Assets (NPAs) since 2009, post global financial crisis. Repeated measures taken by the Government and Reserve Bank of India (RBI) collaboratively or individually did not bring the expected outcomes and more-so it exacerbated to the core and heightened the level of deterioration of asset quality of Indian banks. Prominently the public sector banks are worse hit than its private counterparts, though the latter made entry into the world of devastation in the recent years and thereby added to the ceremonial growth of stressed assets. The paper has attempted to focus on the vulnerability of the Indian banks, both public and private sector towards its burgeoning NPAs post 2008. The study revealed that the sustainability of the Indian banking sector became troublesome as disadvantages in uncontrollable asset quality deterioration; growth outpaces the advantage of the remedial measures. The banking sector underwent paramount transformations since decades. It dates back to post first phase of Economic Liberalization of 1991 and NPA emerged as an upsetting intimidation in the nation sending adverse signals on the sustainability and insurability of the debt burden banks.

Labour Problems Experienced by the Retail Entrepreneurs in Indian with Special reference to Delhi NCR

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ABSTRACT

This study examined the labour problems experienced with respect to the demographic variables of the retail entrepreneurs in NCR Region, India. A sample size of 410 retail market entrepreneurs was selected for the study by using a pre-tested questionnaire which was customized and designed the researcher and the research supervisor. The statistical tools namely, descriptive statistics, one-way analysis of variance, and independent sample 't' test, analysis were applied. The findings of study are given in detail.

Key words: Retail Market Entrepreneurs, Labour Problems

1. INTRODUCTION

The word "Retail" originates from a French-Italian word. Retailer is someone who cuts off or sheds a small piece from something. Retailing is the set of activities that markets products or services to final consumers for their own personal or household use. It does this by organizing their availability on a relatively large scale and supplying them to customers on a relatively small scale. Retailer is a person or agent or agency or company or organization who is instrumental in reaching the Goods or merchandise or Services to the end user or ultimate consumer. Structure of Retail Industry The retail industry continued in India in the form of Kiranas till 1980. Soon, following the modernization of the retail sector in India, many companies started pouring in the retail industry in India like Bombay Dyeing, Grasim etc. As has been mentioned earlier the retail sector in India can be widely split into the organized and the unorganized sector.

After 50 years of unorganized retailing and fragmented Kiranas stores, the Indian retail industry has finally begun to move towards modernization, Systematization and consolidation. Today, modernization is the catch phrase and the key to understanding retail in the next decade and the key to understanding retail in the next decade. Traditionally retailers and the key to understanding retail in the next decade. Traditionally retailers have had localized operations. This localized nature of the industry is changing as retailers face lower growth rates and threatened profitability in home markets.

Register analysis and ESP pedagogy: Noun-phrase modification in a corpus of English for military navy submariners

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ABSTRACT

Research in Maritime English (ME) has paid no attention to the range of textbooks and language to which Navy submariners are exposed during their training and professional careers. This exploration looked at Noun Expression(NP) revision patterns in a longitudinal corpus of Submarine English(SE) professional textbooks in the Cartagena Military Submarine Corpus(CMSC). Using a combination of quantitative and qualitative analyses, we set up that SE is characterized by heavy nominal premodification, low adjective premodification, low prepositional expression post modification and by the predominant use of appositive nouns in postmodifying places. These distinctive features of SE call for a register-sensitive pedagogy that unload these characteristics and present them in environment. We argue that the donation of corpus linguistics is essential to explore registers which, for different reasons, haven't been addressed or described linguistically in the history. also, we maintain that the examination and tutoring of NPs is essential to understand current trends in professional jotting and communication

1. INTRODUCTION

Little is known about the range of language registers to which the service are exposed when they're trained in warfare seminaries innon-English speaking countries. There is, still, a variety of handbooks and accoutrements that address the requirements of transnational forces. Tick(2006) developed ane-learning English Language Teaching(ELT) course grounded on the NATO Formalized Language Profile(SLP) for the Hungarian service. Orna- Montesinos(2016) created English language literacy accoutrements drawing

Linguistic and ethnic media stereotypes in everyday talk: Humor and identity construction among friends

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ABSTRACT

This study explores humorous intertextual media references in the audio- recorded everyday talk of a European American friend group. fastening on conceptions of ethnically-pronounced kinds of American English in media references, I dissect talk where white speakers perform African American English appropriated from an Internet meme and " Hollywood Injun English " as portrayed in television homilies. I also examinepost-recording playback interviews in which speakers admit and note on the problematic source textbooks and their performances. I illustrate how speakers construct their individual humorous individualities and their participated artistic and ethnical individualities through the " others " they state, while contemporaneously cranking and buttressing the social conceptions represented in the media they source. While these speakers don't incontinently notice these conceptions, in playback interviews they repel the individualities formerly performed, with their statements ranging from nebulous evaluation to deconstruction of the media and the references. This study contributes to understanding how and why speakers bring media- bedded verbal and artistic conceptions for humorous individual and group identity construction, and how humorous media references serve as a point for cranking , buttressing, and deconstructing media conceptions about verbal and artistic individualities in everyday commerce.

1. INTRODUCTION

Experimenters fete media as a point for the(re) product of verbal and artistic conceptions(Bucholtz, 2011a, Bucholtz, 2011b Bucholtz and Lopez, 2011, Dragojevic etal., 2016, Lippi-Green, 2012), and scholars have examined how media is appropriated in everyday talk(Beers Fägersten, 2012, Duff, 2002, Sierra, 2016a, Sierra, 2016b; Tovares, 2006, Tovares, 2007, Tovares, 2012), yet no exploration has shown how specific media conceptions circulate in everyday commerce. Conceptions are reproduced in everyday talk for colorful interactive functions, similar as defying participation in stereotypical conditioning(Robles and Kurylo, 2017), justifying stereoytpical geste working interactional problems, scapegoating(Kurylo, 2013), bullying, shocking, claiming the bottom, conciliating the informal tone of social hassles, creating closeness and solidarity, entertaining, and managing a variety of particular and social individualities(Condor 2006).

A general mathematical model for two-parameter generating machining of involutes cylindrical gears

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ABSTRACT

Rather of the common logical model for involutes gears machining, a general mathematical model for two- parameter generating machining is developed in this study with espousing separate boxing to increase its robustness and generality for crafted profile computation and instant contact analysis. The geometric parameters and stir relation vessels are integrated according to the cross-axis gear entrapping at first, and the envelop ing proposition for two- parameter generating process is anatomized compactly with involving middle gear rack. By transubstantiating the multiple slice edges relative to the gear blank according to the generating movements, a numerical algorithm is proposed to distinguish the external boxing profile on the shaft section, also the derivate of instant contact points via the inferred time sequences of profile points is introduced. Eventually, the match trans conformations for the spatial line of instant contact points relating and the engaged cutting edge parts distinguishing are delved . At last, a non- involutes profile skiv ing is performed to corroborate the generality and the robustness of proposed system, and sev eral generally generating machining operations for spherical involutes gear are dissembled numerically to evidence the delicacy of the proposed model by chancing the diversions from the standard involutes angles and the shapes of the instant contact points.

1. INTRODUCTION

Respiratory illnesses are omnipresent among European citizens. The number of affected individuals is expanding relentlessly. A EU wide wellbeing study of the OECD/EU (2016) has appeared that 6.1% of the populace in Europe matured 15 a long time or more seasoned endure from asthma. Moreover, 4.0% of the same populace bunch were detailed to endure from COPD. These numbers ensnare that by and large more than 10% of the populace within the EU with an age of 15 a long time or more seasoned endures from extreme respiratory infections. More profound knowledge into the respiratory process might offer assistance to extend advancement possibilities for respiratory care. Modelling of the region of intrigued within the human body could be a state of the craftsmanship strategy to extend information and permit overviews for specific research questions.

Mathematical simulation of nonlinear oscillations of viscoelastic pipelines conveying fluid

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ABSTRACT

A fine model of the problem of nonlinear oscillations of a viscoelastic channel conveying fluid is developed in the paper. The Boltzmann – Valera integral model with weakly singular kernels of heredity is used to describe the processes of channel strain. Using the Bubnov – Galerkin system, the fine model of the problem is reduced to the study of a system of ordinary integro- discrimination equations, where time is an indepen dent variable. The result of integro-discrimination equations is determined by a numerical system grounded on the elimination of the oddity in the relaxation kernel of the inte gral driver. Using the numerical system for unknowns, a system of algebraic equations is attained. To break a system of algebraic equations, the Gauss system is used. A com putational algorithm is developed to break the problems of the dynamics of viscoelastic channels with a flowing fluid. The algorithm of the proposed system makes it possible to probe in detail the effect of rheological parameters on the character of vibrational strength of viscoelastic channels with a fluid inflow, in particular, in the study of free zilches cillations of channels grounded on the proposition of immaculately elastic shells. On the base of the computational algorithm developed, a set of applied computer programs has been created, which makes it possible to carry out numerical studies of channel oscillations.

1. INTRODUCTION

Mathematical simulation of dynamic problems of oscillations and the stability of viscoelastic systems is also a veritably rele vant problem due to the fact that, on the one hand, the possibilities of using accoutrements with pronounced viscoelastic proper ties in oil painting and gas assiduity and other branches of engineering are expanding, and, on the other hand, when using heritable models(3) for describing the internal damping of material, the oscillation equations of elastic systems are written in the same form as for viscoelastic systems. frequently when considering elastic systems, the internal disunion of material is taken into account by the Voigt model, although it's known that indeed in systems with a finite number of degrees of freedom lesser than concinnity, it leads to incorrect results, since for utmost accoutrements the internal disunion is nearly independent or, at least, weakly depends on the haste of oscillations in a sufficiently wide frequency range. In this sense, a model that reflects heritable parcels (4) is more preferable.

A mathematical model of optical instability and the multiplicity of its solutions

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ABSTRACT

The problem of high- intensity ray palpitation commerce with a semiconductor under the condition of the light energy nonlinear immersion is considered. Mathematical model of an optic instability grounded onre-normalization of interdicted energy zone of a semiconductor because of the convinced electric field is presented. The multifariousness of the problem results at the Neumann boundary conditions statement is bandied and ways of its prostrating are proposed. The effective system for the numerical result of the problem is developed and computer simulation results are presented.

1. INTRODUCTION

The ray palpitation commerce with a semiconductor is a ultramodern problem and has the enhancing expansive operation. This process accompanies by numerous nonlinear goods and the miracle of an optic instability (OB) is among them. As it's well known, the OB miracle consists in actuality of two intensity values of the ray palpitation transmitted through a semiconductor for the certain intensity of the incident palpitation. numerous experimenters pay attention to studying of this miracle(1 – 7) in connection with a consummation of the optic analogues for colorful electronic bias for illustration, each- optic switching bias, optic data storehouse, each- optic computer. One of the physical mechanisms for the OB consummation is grounded on a light energy nonlinear immersion in a semiconductor. This process can be described by the set of nonlinear on-stationary PDEs in 1D, 2D or multidimensional cases with the corresponding boundary conditions (BCs) and original conditions. For numerical result of similar complicated nonlinear problem it's necessary to use an effective finite- difference scheme(FDS), which possesses a high delicacy and parcels of the traditionalism, and asymptotic stability, as well as an occasion of using rather big meshsteps.With this purpose we had developed the conservative FDS(8) applicable for this problem with the arbitrary BCs. This FDS is a nonlinear implicit bone, so for its consummation we proposed an original replication process, allowing achievement of the asymptotic stability property

A mathematical model and algorithms for the aircraft hangar maintenance scheduling problem

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ABSTRACT

An aircraft hangar conservation scheduling problem is studied, motivated by the aircraft heavy conservation conducted in a hangar operated by an independent conservation service company. The aircraft hangar conservation scheduling problem in similar environment consists of determining a conservation schedule with minimal penalty costs in fulfilling conservation requests, and a series of hangar parking plans aligned with the conservation schedule through the planning period. A mixed- integer direct programming(MILP) calculation ematical model, integrating the interrelations between the conservation schedule and air craft parking layout plans, is presented at first. In the model, the variation of parking capacity of the conservation hangar and the blocking of the aircraft rolling in and out paths are considered. Secondly, the model is enhanced by narrowing down the sphere of the time- related decision variables to the possible rolling in and out operations time of each conservation request. Thirdly, to gain good quality doable results for large scale cases, a rolling horizon approach incorporating the enhanced fine model is presented.

1. INTRODUCTION

The rapid-fire development of air transport has led to significant profitable growth, and the demand for marketable air transport has been increased (1,2). This rapid-fire growth of air transport has assessed numerous challenges on planning and pieces tions conditioning in the aeronautics assiduity (1,3). numerous airline companies have been redefining their operations practices in conducting conservation conditioning on their line, in order to insure aircraft conservation, form and overhaul(MRO) pieces tions continue to conform with the regulations specified by aeronautics authorities, while maintaining minimal conservation cost(4,5). rather of conducting the heavy conservation taking significant input in terms of the hiring of certified engi neers, holding conservation accoutrements and operating a conservation hangar within the airline company, outsourcing of MRO the proposed conservation scheduling and parking layout planning problem is studied from the perspective of an aircraft conservation service company furnishing heavy conservation service. The aircraft conservation, form and overhaul (MRO) conditioning are critical for aircraft safety, and periodic conservation checks need to be carried out on each aircraft upon matching operating for a specified number of flying hours.

Electromagnetic fields' influence on transportable, Implantable medical devices

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ABSTRACT

This paper subtle elements numerical computation of initiated obstructions voltage inside a pacemaker due to exposure to electromagnetic (EM) field spresentinatrain. The goalisto verify whether electro magnetic field sources posea potential threat to passengers with an embedded pacemaker. A disentangled human body show with a bipolar lead setup pacemaker was situated within the region of an electric dissemination box - the source of an 50 Hz electric field affecting the pacemaker. Two positions were examined, each set in two diverse separations from the source of the electromagnetic (EM) field. The most extreme calculated interference voltage in all simulated cases is within the 0,29V/m range. This value corresponds to the input filter attenuation band and speaks to a secure esteem for prepare travelers with an embedded pacemaker, subject to undamaged dispersion box and is in compliance with security necessities.

1. INTRODUCTION

As of late, American and European specialists unveiled data that cardiovascular infections are on a rise, in accordance with the world wide WHO organization report of 2018 published by Benjaminetal.(2018). Cardiovascular maladies of cardio-electrical beginning may be treated by embedding an dynamic cardiac device–also called a pacemaker. Generally, a pacemaker comprises of a metallic casing, a connector and a lead (one to three, based on setup thereof). Electronic circuits and a battery are encased inside the metallic lodging. The pacemaker performs incitement or discovery of heart movement through the said leads. Two distinctive sorts of location are utilized – either unipolar or bipolar. In the unipolar configuration, the etallic casing itself acts as an electrode(anode)and the lead speaks to the moment cathode (cathode). In bipolar mode, both leads act as terminals (Gercek et al., 2016; Gálováet.al.,2014-2018). The latter is most commonly used in European din North America and is detailed in EN50527-2-1 (2016).

Black phosphorus's optical anisotropy as determined via Total internal reflection

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ABSTRACT

In spite of the fact that copious investigate on the anisotropy of van der Waals (vdW) materials has been distributed, we un- dertake an in-depth think about of their optical properties as they have an critical directing part for light control in two-dimensional (2D) nanospace. As an case, we ponder the reflectance of few-layered dark phosphorus (BP) within the add up to inside reflection (TIR) mode in detail. We illustrate that its optical anisotropy can be changed on a huge scale by changing the occurrence points, polarization states, and the in-plane turn points of the BP tests. Hypothetical investigation shows that the wonders watched are common to all the atom-thick biaxial gems, so these conclusions can be broadly connected to other anisotropic 2D materials. This inquire about assists the current understanding of the properties of BP more comprehensively, and gives direction for creating modern opto- electronic applications, particularly when BP and other atom-thick biaxial gems are coordinates with TIR gadgets.

2. INTRODUCTION

The optical anisotropy characteristics of materials, such as dichroism and birefringence, are omnipresent in nature since of the discrepant spatial dispersion and interaction strengths of molecules along diverse ori- entations in precious stones. This may give successful strategies for tweaking the transmission behaviors of light [1,2]. In common, these significant anisotropic properties require successful optical ways, such as by expanding the test estimate in three-dimensional space; this limits the advancement of such materials for utilize in coordinates applications. Artificial materials (metamaterials) can dodge this issue by planning the uncommon dielec- tric parameters and micro/nano structures required to coordinate the solid light-matter interaction, but this happens at the taken a toll of expanding the complexity of the tests [3–5]. Hence, it is essential to find and make a comprehensive analysis of the appropriate substitute that provides both solid anisotropy and flexible arrangement, such as a normal van der Waals (vdW) gem, which encourages the balance property and the appropriateness for micro/nano gadget creation [6].

Effectiveness of Connections Type on Vibration Response of Steel Beam

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ABSTRACT

Selecting the type of connections in an architecture is one of the most crucial factors to take into account.This paper has examined the effects of connection type on steel beam vibration. The connection type that reduces beam vibration the best has been highlighted. Several finite element models were used in the study to simulate each kind of connection. First, the model's validity was confirmed by contrasting its output with the outcomes of the analytical method. The beam natural frequency was calculated using a linear frequency analysis in the numerical model, and it was then compared to the value obtained using the Euler-Bernoulli approximations for simply supported beams. Following that, the steady-state analysis and the transient analysis processes were carried out.A harmonic load with various frequencies was applied to the beam mid-span in the steady-state analysis, whereas an impulsive load was used in the transient analysis. The findings show that employing one of the moment connections rather than the conventional shear connection can reduce the deflection by 72% and the beam's steady vibration by 81%.

Keywords: Vibration Analysis; Steel Beam; Finite Element Modeling; Steady State Analysis; Transient Analysis.

1. INTRODUCTION

Structural engineers have long been captivated by the possibilities presented by material structures.Modern building methods allowed for the highest strength to weight ratio to be used. Due to this new design trend, there is a direct increase in unwanted floor vibration-related problems. As a result, impacts and other causes of excessive vibrations expose the structural floor systems [1].The main objective of this study is to show that connection type can significantly reduce beam vibration. On the other hand, a serviceability problem in a steel building could arise from choosing the wrong connection type.As a result, this work has identified the connection that minimizes beam refraction during oscillation.The investigation was carried out by thorough finite element modeling using ABAQUS software.

Experimental and Numerical Investigations of Composite Concrete–Steel Plate Shear Walls Subjected to Axial Load

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ABSTRACT

To determine the impact of the wall's aspect ratio and concrete compressive strength on the axial capacity, lateral displacement, and axial shortening of the walls, this study presents experimental and numerical investigations of composite concrete-steel plate shear walls under axial loads. As part of the experimental program, two groups of walls with different aspect ratios will be cast and tested. The first group's aspect ratio (H/L) was 1.667, whereas the second group's was 2. Three composite concrete-steel plate walls with three cube compressive strength targets of 39, 54.75, and 63.3 MPa make up each group. The tests' findings indicate that a rise in the compressive strength of the concrete raises the wall's ultimate axial load capacity. Therefore, as the compressive strength increased from 39 to 63.3 MPa for the case of the composite wall with aspect ratios H/L=1.667 and H/L=2, respectively, the failure load, the corresponding lateral displacement, and the axial shortening increased.

Keywords: Composite Concrete-Steel Plate Shear Walls; Axial Load; Compressive Strength; Aspect Ratio; Lateral Displacement; Shortening; Failure Mode.

1. INTRODUCTION

Because of its advantages in terms of high load bearing capacity, good seismic behavior, and speed of construction, concrete-filled steel tubes have been utilized extensively in high-rise structures and bridges . A novel type of composite wall structure has recently been developed that combines steel plates with concrete. It is mostly used in missile defense and super-high rise buildings, as well as plate resistance walls due to its high bearing capacity and decreased thickness. The relative motion that occurs between the faceplate and the infill concrete makes the axial compression loading a significant condition. Conversely, the axial performance of composite walls can be significantly impacted by weak cooperative action resulting from the local instability of the steel plate. Recently, a few related investigations have been conducted on the axial performance of composite walls that feature integrated connectors.

Footing Soil Pressure from Biaxial Loading

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ABSTRACT

Soil pressure shifts in response to a symmetrical isolated rectangular foundation with centered biaxial overturning, counterbalancing the stresses. At a corner is where the soil pressure is maximum. The aim of this study is to record a straightforward and comprehensible method for directly calculating the form of the soil pressure distribution, as well as to expand the uniaxial soil pressure solution to include biaxial stresses. Making the solution automation-ready is another goal. There are two transition shapes in uniaxial overturning: trapezoidal and triangular. There exist three transition shapes in biaxial overturning, which result in 4-, 5-, and 6-sided polyhedrons. The characteristic shape of the soil pressure distribution is ascertained by computing those volumes and comparing them with the design vertical load. Subsequently, the computation advances towards the exact form, determining its centroid and moment capacity. All of the soil pressure shapes are modeled using tetrahedron assemblies.

Keywords: Footing; Soil Pressure; Biaxial; Tetrahedron; Determinant.

1. INTRODUCTION

Retrofitting is a technique used in rehabilitation and repair to alter pre-existing structures to increase their resistance to ground motion, vibrations, seismic activity, etc. Many materials are used to reinforce the structures that have been weakened by earthquakes and other events. The different materials, such as steel plates, glass fiber reinforced polymer, carbon fiber reinforced polymer, etc. Compared to other fiber-reinforced polymers, carbon fibers have advantages of their own. Because of its low weight, great strength, excellent durability, high fatigue endurance, competitive cost, and ease of installation, carbon fiber is recommended.This paper's goal is to examine how CFRP strengthens structures and how it affects different structural members. Initially, engineers and scientists employed carbon fiber reinforced polymer (CFRP) to reinforce reinforced concrete beams, based on its effects. Considerable investigation has been done into the application of composites to shield concrete from impact force.

Investigated of Desalination of Saline Waters by Using Dunaliella Salina Algae and Its Effect on Water Ions

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ABSTRACT

Current water resources are insufficient to meet human requirements because of population growth, city expansion, and the world's diminishing freshwater resources. Biological techniques such as desalination, or the reduction of salinity in water, can be achieved by employing bacteria, algae, or plant species in combination. Investigating the desalination of saline waters using Dunaliella salina algae was the aim of this study. The factorial experiments were conducted using a completely randomized design for this reason. For ninety days, the anticipated experiments were carried out in a laboratory with controlled humidity, light, and temperature. Every day, the Electrical Conductivity (EC) was measured for this study. The findings demonstrated a considerable difference in the way that Dunaliella salina algae absorbed salt. Dunaliella salina exhibited a high degree of salt absorption at a concentration of 130mS.cm-1. In laboratory settings, salt removal from saline water was detected because of the constant humidity, light, and temperature. According to the study's findings, Dunaliella salina algae were used to significantly lower the levels of salt, chlorine, and bicarbonate.

Keywords: Bio-desalination; Dunaliella Salina; Saline Water; Dry Weight

1. INTRODUCTION

Desalination from sea water has become increasingly crucial as a result of the world's freshwater sources being depleted and the use of drinking water for purposes other than agriculture and industry. As a result, the human race will face a water crisis in the near future. Desalination process development and selection is a crucial necessity that is both less expensive and more efficient than current techniques. The water crisis that arid nations are currently experiencing will only worsen due to population growth, industrialization, and agricultural development, as well as increased water consumption at varying costs and increased competition among varied applications . Because of the soil, land, climate, and dearth of surface and subsurface freshwater resources in dry and semi-arid regions, as well as the desalination of salty water (rivers and seas),

Analysis of what sets off an agile transformation: A central bank's example

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ABSTRACT

For many major enterprise IT departments, one of the main subjects of discussion is agile transformation. Large businesses have adopted these strategies at the level of all information system initiatives, persuaded by their advantages. However, practitioners are mostly ignorant of the process by which a business moves from the experimental stage to the generalization stage. Our study seeks to provide a response to the following question: given that agile methods lead to many changes in roles, procedures, and culture, what are the decision triggers that will allow an organization to transition from agile method experimentation to a broad implementation of the technique? Using a case study and a qualitative research approach, this intricate phenomena is being attempted to be explained.We looked into how the IT division of the French central bank had used agile techniques during the previous 13 years. A major public organization was able to coordinate the introduction of agile methodologies thanks to the contributions and practical consequences highlighted

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1. INTRODUCTION

Information systems (IS) projects are still being influenced by agile methodologies more and more, even after the agile manifesto was published over 20 years ago [1]. Agile techniques are recognized for being somewhat codified approaches that enable taking into account requirements and solutions that change as a project progresses. Their development method is gradual, adaptable, and iterative, and they rely on diverse teams that adhere to self-management principles [2].

Many techniques have emerged and gained acceptance among practitioners since the 2001 release of the Agile Manifesto, mostly because of the advantages associated with them. Consequently, a lot of big businesses are starting to use agile methods widely [3]. There are still a lot of questions on this subject, even though information technology (IT) departments are typically the first organizations to use these techniques. One of them is about how a company will handle the integration of non-IT departments in the adoption, adaption, and use of agile methodologies. Numerous writers in the field of information systems refer to the adoption process as an agile transformation [4]. Nevertheless, agile transformation involves more than just implementing agile methods.

Application of project management software in medium and large project-based enterprises: an empirical investigation in Poland

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ABSTRACT

Information technology equipment (computers and related hardware), communication equipment, and software are the three parts of ICT (Information and Communications Technology). Information systems and information technology together make up IS/IT. The body of literature reveals that while many studies describe the use of IT in various sectors, very few of them concentrate on PBOs (project-based organizations), and those that do are mostly restricted to the construction sector. The paper's major goals are to present and debate the results of empirical investigations on software adoption and its difference in PBOs of different sizes and sectors. The study focuses on middle-sized and big PBOs that are active in Poland The study's key conclusions include that PBOs typically use well-known software, including the office suite, and IT tools to integrate different parts of businesses, like ERP (Enterprise Resource Planning) systems.

1. INTRODUCTION

The state of the market today and the rapid development of new technological solutions have led to a wide range of uses for ICT (information and communications technology), which facilitates management and company operations. Information technology equipment (computers and related hardware), communication equipment, and software are the three parts of ICT, according to the OECD (Organization for Economic Co-operation and Development) [1]. Information Systems and Technology, or IS/IT, is made up of them.

The rise in popularity of Industry 4.0, a trend of automation, robotization, and data interchange in industrial technologies or service delivery, is evidence of the growing importance of ICT [2]. The widespread use of the Internet determines living standards and organizational possibilities. The following factors primarily determine the benefits: the extent to which an entity is open to IT; the functionalities of the chosen IT solutions (hardware and/or software); the quality of the final IT solutions delivered.

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Using Block chain Technology in Logistics

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ABSTRACT

This study examines blockchain technology's decentralized data storage capabilities and the potential applications it may have in supply chain management and environmentally friendly transportation. Major logistical difficulties including order delays, products damage, mistakes, and multiple data input may all be reduced by implementing blockchain technology, even though its advantages have been extensively studied in the banking industry. An extensive analysis of the emerging and present applications of blockchain technology in supply chain and logistics management is presented in this study.

1. INTRODUCTION

The production and distribution of commodities include intricate procedures that are linked to the supply chain. various stages, various locations, several accounts and payments, multiple people, companies, and modes of transportation can all be a part of the supply chain, depending on the product. Consequently, the purchase of goods may take many months to complete. The parties engaged in the logistics process have a vested interest in introducing and developing blockchain technology to improve the supply chain's logistics procedures and make them more sustainable due to the intricacy and opaqueness of traditional supply networks. Although blockchain technology is most frequently discussed and utilized in relation to cryptocurrency, there are a lot more potential uses for it. Blockchain is a distributed ledger with a wide range of possible uses. It may be used for any kind of data sharing, including financial transactions (payments), contract tracking, and shipment tracking. The system is transparent since every operation is recorded in the block and the data is spread among several nodes, or computers. Because each block is connected to the ones that come before and after it, the system is safer.

An outline of the NFAIS Conference: Artificial insights: Finding its put in investigate, revelation, and insightful distributing

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ABSTRACT

Theoretical:- This paper offers an outline of the highlights of the NFAIS Conference, Artificial Insights: Finding Its Put in Inquire about, Revelation, and Academic Distributing, that was held in Alexandria, VA from May 15–16, 2019. The objective of this conference was to investigate the application and suggestion of Artificial Insights (AI) over all divisions of grant. Points secured were, among others: the sum of information, computing control, and the specialized foundation required for AI and Machine Learning (ML) forms; the challenges to building effective AI and ML models; how distributers are utilizing AI and ML in arrange to make strides revelation and the generally client look involvement; what libraries and colleges are doing to cultivate an mindfulness of AI in higher instruction; and an genuine case ponder of utilizing AI and ML within the improvement of a suggestion motor. There was something for everybody.

Catchphrases: Insightful distributing, artificial insights, machine Learning, AI models, tall dimensional information, wikipedia, overfitting, TrendMD, suggestion motors, AI labs, AI centers, Amazon SageMaker.

1. INTRODUCTION

"Just as power changed nearly everything 100 a long time prior, nowadays I really have a difficult time considering of an industry that I don't think AI (Artificial Intelligence) will change within the another a few a long time [1]". The scientific distributing industry is no special case to the over cite. This conference given a see as to how the utilize of Artificial Insights (AI) and Machine Learning (ML) are permitting inventive distributers to mine their data and give data searchers with information instead of a list of answers to questions. Luckily for me, this was not a conference for the AI computer-savvy, or maybe it was for non- techies who needed to memorize how ML and AI are being utilized inside the Data Community - by distributers, custodians, and merchants - and as you studied this article I trust simply will concur with me that the objective was met.

Architectural learning in digital era computing applications: between academia and practice

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ABSTRACT

Architecture is a technology-intensive discipline. It uses technology both in design and manufacturing. Digital information technology is likely to have a strong impact on architectural design, architectural education and practice. Image architecture, digital simulation and virtual scene among other applications gradually became progressive expressions of architectural design. Architectural education is necessary to adapt to such changes.

Due to the rapid development of computer applications in the architectural profession, there is an increased need to find a framework for integrating computer applications into the architectural curriculum. Therefore, it became imperative to study the effects of computer integration on schools of architecture and at the same time identify the needs of the architectural profession to find an effective framework for architectural education.This article examines the integration of computer applications with the top 20 international schools of architecture and eight departments of architecture in Egyptian universities to understand the current state of education at the national and international levels.

KEYWORDS: Architectural education; Computer applications; Curriculum; Architectural profession

1. INTRODUCTION

Information technology offered architects new opportunities and began to displace traditional design techniques. Clearly, efficiency, control and intelligence have been made possible by computer tools; These methods are increasingly considered indispensable in architectural practice. However, it is less clear how this technology has influenced the practice of architecture, the society it serves, and thus the education of architects. According to Qaqish and Hanna [27], information technology includes all computer applications, whether integrated in a design studio or in independent courses; in both architectural design and urban planning courses.

A New Architecture for the Cognitive Internet of Things And Big Data

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ABSTRACT

Big data and the Internet of Things (IoT) are the most important paradigms in defining new information architecture projects. Therefore, the technologies that make up these solutions can play an important role in the information architecture of a company. Solutions that approached Big Data and the Internet of Things because unique technological initiatives struggle to find value in such efforts and the technology itself. Combining requirements (volume, speed and variability) is imperative to achieve potential business goals. In this regard, we propose a new architecture for the Cognitive Internet of Things (CIoT) and Big Data. The proposed architecture benefits computational mechanisms by combining a data warehouse (DWH) and a data lake (DL) and defining a tool for heterogeneous data collection.

Keywords: Internet of Things, Big-Data, Architecture, Cognitive, Data-flow.

1. INTRODUCTION

If we look around, technology affects almost every object in the world and it extends to all fields. Thus, information processing and communication technology became the most possible era of the era. Any object associated with the word "intelligent" can communicate at a high level not only with humans, but also with other intelligent things. Therefore, the Internet of Things seems to change our world and also create more opportunities. This new paradigm aims to provide online connectivity between physical and virtual objects anywhere, anytime, for everything. It refers to a world where networking and data processing capabilities provided by sensors and other physical objects enable communication between devices to reduce human activity. The increasing volume, variety and velocity of data generated by the IoT continues to fuel the explosion of data volume. Another important impact of technology is that it empowers and empowers people to analyze data and make decisions based on quantitative analysis.

Limitations of Triangular Networks

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ABSTRACT

In a graph G, suppose S is a subset of vertices that are all colored and the remaining vertices are uncolored. Dynamic grain coloring is defined such that at each discrete time interval a colored vertex forces exactly one colorless vertex to be colored. This process continues to color all the vertices. A subset S is called a forced set of G. The limit ζ(G) of a graph G is the minimum cardinality of a set S with colored vertices that force the set V(G) to be colored after some time. If a subset S has the additional property that it induces a subgraph of G whose components are all edges, then S is called a ζP2-forced set of G. The minimal cardinality of a bounded set G with a is called P2. -G is a forced number and is denoted by ζP2(G). Analogously to the limit set P2, we define a set S as the limit set P3 if all components of S are non-uniform paths of 3 vertices. The minimum cardinality of the P3 imposed set is called the P3 imposed number G and is denoted by ζP3(G). We calculate the force P2 and the force P3 of the triangular mesh.

Keywords: dynamic coloring; Triangular networks; forcing set

1. INTRODUCTION

In the power grid, power companies must regularly evaluate or control power parameters, which is very important. An effective way to solve this problem is to place phase measurement units (PMU) in the necessary places. The number of phase and voltage meters can be reduced without compromising its ability to control the entire plant. The powerful system monitoring problem presented in [1] allows to minimize the number of measuring devices and their location to monitor the entire enterprise. Haynes et al., [6] methodically formulated this problem as the dominant problem of graph theory. This type of dominance is more different than a normal dominance type problem because the rules of dominance can be executed multiple times.

An environment-based approach to ant colony convergence

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ABSTRACT

Ant Colony Optimization (ACO) algorithms are biologically influenced solutions that have been very successful in solving combinatorial problems, also known as NP-hard problems, including transportation system optimization. Unlike exact methods, which could provide the best results for the problem under test, this meta heuristic is based on stochastic logic, but not on theoretical mathematical proof (or only for certain well-defined applications). According to this, the weak point of this meta heuristic is its convergence, its termination condition. Many different termination criteria can be found in the scientific literature, but most of them are resource intensive and not suitable for solving practical problems. On the other hand, based on the fact that ACO is a stochastic approach, it seems difficult to decide whether to terminate the algorithms to obtain an optimal result for the tested problems. Therefore, the thesis of this paper is to propose an environment-based approach to determine the best ACO termination criteria for an optimized solution.

Keywords: Ant Colony, Environment approach, Dynamic convergence

1. INTRODUCTION

Ant colony-based algorithms were developed by Colorni, Dorigo and Maniezzo [1], [4], [5] in the early 1990s and are now very common in the scientific literature. This meta heuristic is based on biological inspiration characteristics Later it was used to solve combinatorial optimization problems called NP-Hard, and it was used for the first time to solve the Traveling Salesman Problem (TSP). Later, compared to other traditional optimization methods, it quickly spread and was adopted in problems such as task sequencing [2] or graph coloring [3], which benefit from the use of intrinsic properties. Moreover, due to its retro properties (positive and negative), preserving its past experiences in the form of pheromones and adapting to the evolution of its model, this meta heurist is particularly suitable for solving dynamic combinatorial optimization problems. . Determining the termination criteria of the ant colony algorithm is still a sensitive research topic in practice.

Weighted random algorithms for efficient load balancing in distributed computing environments

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ABSTRACT

When selecting resources, randomized algorithms use information about the distribution of their key information using random samples. This can effectively improve resource utilization, but naturally can cause load imbalance due to the randomness of the input state. For certain problems, it is useful to use a helper to point the solution space in the right direction. This paper proposes a weighted randomized allocation algorithm to achieve efficient resource utilization with optimized load balancing. Simulation results using standard workload format data sets show that the proposed algorithm outperforms existing solutions in terms of average resource utilization by 8-12 percent and improves load balancing by 5-11 percent.

Keywords: Grid computing Load balancing Randomized algorithms Resource utilization Task scheduling

1. INTRODUCTION

In grid computing, the heterogeneity of network resources (or resources) creates a challenge when implementing load balancing. Better load balancing systems avoid redistributing users' work and further overloading network resources to improve resource utilization. Existing works use a sequential approach to tasking, which fails to evenly distribute the workload across all resources. Grid computing has become one of the most abstract buzzwords used in the field of computer science. From loosely connected computers used to perform non-essential tasks with an idle CPU to tightly coupled clusters of servers used in data centers in advanced cloud environments, the keyword network-based computing fits anywhere.

The challenges of the entire complex were shared computing resources used in vertical or horizontal domains seem to evolve every day with new applications. From the latest content delivery networks to legacy high-performance scientific testing environments, the need for grid computing systems is to adapt to the needs of applications. Service providers always need better ways to satisfy customer needs by limiting quantity of resources.

Testing and Evaluation System for Cloud Computing Information Security Products

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ABSTRACT

Due to the lack of a professional testing and evaluation system for cloud information security products, the basic security of cloud service information security products cannot be guaranteed. In order to promote the development of cloud technology and information security, the creation of a testing and evaluation system for information security products of cloud services is proposed, and the system is used in actual product testing.

Keywords: Cloud Computing, information security, testing, evaluation

1. INTRODUCTION

Cloud computing is a style of computing where dynamically scalable and often virtualized resources are made available as a service over the Internet.

The National Institute of Standards and Technology (NIST) has defined cloud computing as a model that enables ubiquitous, convenient, on-demand access to a shared set of network-configurable computing resources (such as networks, servers, storage, applications and services) that can be quickly provisioned and released with minimal administrative effort or service provider interaction. The range of applications for different cloud computing services is increasing and its impact is immeasurable.

Analysis and Evaluation of Low-Pressure Circuit Operations in Heat Recovery Steam Generators

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ABSTRACT

The paper illustrates the utilization of contemporary software for executing thermal computations. It analyzes and juxtaposes the integral features of a high-pressure heat recovery steam generator with those of a standard 3-pressure heat recovery steam generator, commonly employed in high-capacity combined cycle gas turbines. The comparison underscores that heightened pressure results in an augmented heat transfer, evidenced by an increase in the heat transfer coefficient. Moreover, the article delves into the reliability issues concerning heat recovery steam generators, particularly focusing on concerns related to flow-accelerated corrosion within pipes.

Keywords: Heat recovery steam generator, HRSG, low-pressure evaporator, natural circulation circuit, flow-accelerated corrosion, Boiler Designer software

1. INTRODUCTION

The primary aim of thermal calculation involves acquiring parameter values pertaining to the medium within components of calculated heat-generating equipment. These parameters include the adiabatic furnace outlet temperature, exit gas temperature, and the inlet or outlet temperature of the medium within the heating surface, among others. Thermal calculations encompass two distinct types: engineering thermal calculation and verification thermal calculation.

Engineering thermal calculation comes into play during the design phase of new heat-generating equipment. Conversely, verification thermal calculation occurs after the equipment has been calculated and placed into operation. Situations necessitating the latter may include replacing damaged or worn-out equipment or evaluating existing equipment for use under new conditions. In such cases, known medium parameters need to be matched with other unknown parameters, vital for configuring the existing equipment operation scheme. Both forms of thermal calculation demand meticulous attention and diligence.

Development and Evaluation of Superconducting Synchronous Generators for Wave Energy Conversion

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ABSTRACT

An innovative approach for designing a superconducting synchronous generator intended for wave energy conversion is proposed to surpass the output capabilities of conventional permanent magnet synchronous generators. This generator leverages the robust magnetic field generated through the remarkable magnetic field capturing abilities of superconducting bulk magnets. As a result, the output performance of the superconducting synchronous generator, encompassing induced voltage, power density, and efficiency, surpasses that of its permanent magnet synchronous counterpart. The generator's design is rigorously assessed using finite element analysis to confirm its accuracy and feasibility.

Keywords: superconducting bulk magnet, superconducting synchronous generator, wave power generation

1. INTRODUCTION

As global non-renewable energy sources diminish and environmental issues intensify, there's an urgent need to explore clean, sustainable alternatives to replace depleted fossil fuels. Consequently, considerable research attention, both domestically and internationally , has shifted towards renewable energy sources, encompassing wind, solar, and ocean energy. Ocean energy, in particular, holds substantial promise due to its extensive reserves and widespread distribution. Among ocean energies, wave energy stands out for its concentration, durability, and predictability, offering a resource more concentrated than wind or solar power. Global data estimates wave energy resources surpassing 1 terawatt (TW), with an annual potential energy output of 2000 terawatt-hours (TWh).

China, situated in the western Pacific Ocean, boasts abundant marine energy resources. Relevant statistics indicate that China's potential for wave energy development exceeds 100 million kilowatts.

Short Circuit Analysis at the Self-Excited Synchronous Generator Outlet

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ABSTRACT

The occurrence of a short circuit at the generator outlet stands as a severe fault, generating significant electromagnetic impact on both the rotor and the associated generator outlet equipment. Consequently, comprehending the short circuit current at the generator outlet holds paramount importance in power plant design.

The study delves into the implications on dynamic and thermal stability pertaining to relevant electrical equipment, juxtaposing these findings with the traditional curve method employed in power plant design codes. It is discerned that the short-circuit current of the self-excited generator is notably lower than that of the externally excited counterpart. This leads to the recommendation that the classical curve method not be applied to self-excited generators. Instead, simulation modeling analysis is proposed as a more cost-effective and rational alternative.

Keywords: self-excited generator; generator outlet short circuit current; stability assessment

1. INTRODUCTION

Initially, synchronous generators were primarily excited by independent DC exciters. However, the evolution of modern power electronic technology has introduced the self-excited system, leveraging Silicon Controlled Rectifiers (SCRs). This system offers rapid response, lacks rotating equipment, boasts a simple structure, and ensures stability and reliability, making it the preferred excitation method for large synchronous generators. Yet, an inherent challenge emerges: the power supply for the self-excited system derives from an excitation transformer parallel to the generator outlet. During a short circuit at the generator outlet, this setup encounters power loss, leading to rapid decay in the residual current of the excitation circuit. Consequently, the short-circuit process at the generator outlet differs from other excitation unit scenarios.

Computational Framework for Investigating Heat Transfer in High-Pressure Heat Recovery Steam Generators

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ABSTRACT

This article outlines the key phases involved in developing a computational model for conducting Computational Fluid Dynamics (CFD) research centered on High-Pressurized Heat Recovery Steam Generators (HPHRSG). This project aims to address the challenge of swiftly decommissioning and replacing energy equipment, featuring a unique structure designed explicitly to reduce reconstruction costs in existing units. Employing the ANSYS CFX software, a comprehensive model has been constructed, validated through various approaches to ensure accuracy. The model enables rapid alterations in geometric and physical properties, facilitating the examination of diverse heat transfer effects. Particular emphasis is placed on selecting appropriate mathematical models to analyze flow dynamics and heat transfer processes. The Reynolds Averaged Navier-Stokes equations (RANS) method emerges as the most practical approach for solving engineering tasks.

Keywords: power generation, steam boiler, heat recovery steam generator, HRSG, combined cycle gas turbine, combustion products high pressure, steam turbine, Boiler Designer, ANSYS, Solid Works

1. INTRODUCTION

The adoption of combined-cycle power plants, with natural gas as the primary fuel, aligns with the Russian energy development strategy until 2020. However, a significant challenge arises due to the deterioration of existing power plant energy units, with over 60% of heat power equipment having surpassed its operational lifespan. This situation necessitates prompt decommissioning and replacement of energy equipment, a process that significantly inflates project costs due to various factors.

An innovative solution involves employing the high-pressurized heat recovery steam generator (HPHRSG) alongside the existing turbine and heat recovery system (depicted in Fig. 1, a). Notably, all heat transfer characteristics of the high-pressurized heat recovery steam generator, including the heat-transfer coefficient and specific heat flow density, surpass those of conventional power boilers with common furnaces and burners, often by a factor of 3-4.

Electricity and Energy performance development of a solar pushed tri generation system using particle swarm optimization set of rules

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ABSTRACT

On this paper, a solar micro blended Cooling, Heating, and electricity (mCCHP) device primarily based on ORC cycle is thermodynamically and economically analyzed. The version of conservation of mass, energy, and linear momentum is used to strength analysis of the system. However, a model based totally on the first and the second one laws of the thermodynamics is used to exergy analysis of the device. Sensitivity evaluation of the inlet temperature, returned turbine strain, turbine inlet strain, and evaporator temperature are considered as the decision variables of the optimization algorithm. The overall performance of the mCCHP gadget is decided via some important indices which includes energy performance, exergy efficiency, and investment cost charge. Consequently, the 3 noted indices are taken into consideration because the goal capabilities of the optimization. The Particle swarm optimization (PSO) set of rules is used for each unmarried- objective and multi-objective optimization of the machine and its code is developed in MATLAB software. The implementation of the multi-goal optimization the use of PSO for R123 working fluid improves 27.65% thermal efficiency, 27.46% exergy efficiency and reduces 11.98% of the machine cost charge.

1. INTRODUCTION

In latest years, rising strength call for, national electricity protection, and strengthening environmental guidelines had been the maximum crucial elements for implementing sustainable, efficient and economically viable strength-conversion technology. Solar energy as a kind of clean and on hand electricity is considered as one of the maximum crucial approaches of supplying strength using green technology. One of the maximum promising solar strength conversion technologies is the CCHP system. Trigeneration electricity flowers have grown dramatically in current year's way to advances together with increasing power performance, reducing greenhouse emissions, and financial benefits. CCHP technology becomes first used in large dimensions, consisting of commercial and industrial homes.

Lithium-ion Battery market analysis for Hybrid, Plug-in and Sun-Powered electric powered motors

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ABSTRACT

Currently, the world is combating with diverse types of challenges related to climate exchange and fuel fees. But, the research subject of the electric cars has given a tremendous alternative for traditional motors. Further more, the global involvement within the development of Hybrid electric powered cars (HEVs) and Plug-in Hybrid cars (PHEVs) is getting higher. The mountain climbing costs and decreasing oil below the earth is distressing the sector's economic system adversely. In 1991, the battery market inside the international changed into anticipated to be at $21 Billion dollars yearly by S.L Deshpande anticipated. As of this present day, electric powered and hybrid electric cars have grow to be extra protuberant and extensively widespread by means of the public, this indicates the battery marketplace could be more than double the 1991 price by now. Due to the boom inside the variety of car customers, the price of CO2 emissions has risen, appreciably.

1. INTRODUCTION

Till now, the development achieved inside the area of combustion motor is the peak of generation. In these days's world, the advancement in the motor automobile has fulfilled the primary need of emerging, a better societal and ethnic generation, and it offers a facility for the transportation of the goods and those. There exist many causes and elements which ignite humans to reflect on consideration on strength assets. In a meantime, the sensational topic of discussions in the colleges and research corporations is grew to become towards renewable assets and methods for green recycling. The running down of assets is up-surging rapidly which will become a effective purpose to find out new resources, nonetheless, the usage of those sources is inadequate. Electricity consumption is going in a one-manner irreversible course wherein fed on electricity can't be replenished as rapid enough because the rate of intake. Those, being a real trouble has been the idea for quite a few research on alternative power resources that may be used collectively with already developed electricity resources like fuel, crude oil and coal (fossil fuels) [3-4].

CFD Analysis of solar chimney Energy plant – Effect of Chimney peak, Shape & Collector Size

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ABSTRACT

This paper affords computational fluid dynamics (CFD) simulation of the sun chimney power plant to research to research buoyancy-nature of heated air through harnessing sun strength. ANSYS Fluent a finite quantity code has been used for axis symmetric model of the solar chimney power plant (SCPP) prototype in Manzanares, Spain thinking about updraft tower. A fashionable ok-E turbulence model and Bossiness approximation for buoyancy driven glide is considered. Small pressure distinction is- reason of herbal draft in the chimney all through day time has been determined due to sun radiation. The numerical outcomes received for average speed and temperature at chimney inlet are established with the experimental results of the prototype. it's been determined that each the velocity and temperature of air inside the SCPP will increase considerably with the increment in sun radiation. Increase within the chimney peak and collector radius additionally will increase the electricity output of the plant. The impact of chimney convergence with different ratio on the power output of SCCPs has been analyzed

1. INTRODUCTION

Present day power generation from the petroleum derivatives like flammable gas, oil or coal are damaging to the earth by exposing the impediments that rely on the sustainable electricity resources. Most of the developing countries cannot afford the price of those convectional energy assets, and inside the number of these areas nuclear electricity has been viewed as in-admissibly dangerous. Solar electricity plays a exceptional position in components of power conversion variety and aid accessibility. Non-traditional power resources are the pleasant options for fixing problems related to CO2 emissions enhancing environmental pollution. but, the contemporary scientists are seeking out controlled use of fossil fuels to counteract the inevitable scarcity of strength assets SCPP is one of the non-conventional energy structures and the fine alternative to analyze the characteristics of the sun chimney electricity plant with extraordinary geometrical and operational parameters. within the mid 1900s, Spanish Colonel Cabanyes proposed that the energy from the air could be applied to generate energy. Researcher attempted Cabanyes hypothesis within the 1980s, by way of constructing a solar chimney energy plant prototype.

A High performance on- board Charger for Solar powered Electric Automobiles the use of a Unique Twin-output DC-DC Converter

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ABSTRACT

Solar powered electric powered automobiles (SPEVs) price their strength storages from photovoltaic (PV) panels through on-board charger. The battery charger for these vehicles is specifically depending on the DC-DC level. Accordingly, this paper proposes an on-board battery charger using a unique twin-output isolated DC-DC converter to fee battery and super capacitor (SC) concurrently. This topology makes use of impedance quasi-Z supply community and also integrates each switched-capacitors and paired-inductor techniques to gain better voltage advantage ratio. Moreover, compared to the traditional battery chargers, because of the use of only switches, the quantity of additives, the device length and the corresponding price can be decreased. The consequences obtained through pc simulation reveal that the excessive voltage advantage is obtained for each battery and SC ports at decrease values of obligation ratio with an performance of extra than ninety four.5%. Sooner or later, experiments with a 150W prototype are confirmed inside the laboratory to research the performance and effectiveness of the proposed SPEVs charger

1. INTRODUCTION

Growing environmental issues coupled to the decreasing of fossil fuel strength resources stimulate highly research on new automobile technology. sun powered electric powered vehicles (SPEVs) and hybrid electric powered vehicles (HEVs) appear like one of the most promising technologies for decreasing fuel consumption and pollutant emissions In SPEVs, the sun power absorbed from the sun by the sun panels is transformed into chemical electricity, and stored in rechargeable batteries . Also, these styles of vehicles require a bigger battery with a great deal better capacity . Without a doubt, the primary obstacle in SPEVs advancement is the supply of green, strong and enough electric strength for the electric motor.

Optimal coordinated control of OLTCs using the Taguchi method To improve power system voltage stability

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ABSTRACT

On-load tap converters (OLTCs) play an important role in regulating the voltage of the power system. Although some times the secondary voltage of the OLTC is lowered when the taps are increased to restore the voltage level. This condition can eventually lead to stress collapse. To solve this problem, the tap setting operation of OLTC was studied, the critical transformer and its allowable tap setting range were determined in the paper. This paper also proposes a Taguchi-based method to find the optimal output settings of the OLTC, including the critical transformer, to improve the voltage stability margin and reduce the actual power loss of the system. The proposed method is tested on IEEE 30 bus system to verify its applicability.

1. INTRODUCTION

Present power systems are operated under stressed condition. As light disturbance at this stage results in reduction in EHV level voltages which is reflected finally in the distribution system network. The action of on-load tap changer (OLTC) helps to restore the voltage at previous levels. With each tap changing operation, the line current would increase, thereby increasing the reactive power loss of the system. As a result the reactive power output of the generators increases gradually and generators may reach to their reactive power capability limit. Beyond that generators loses their capability to support the system voltages, thereby causing the problem of voltage instability. Therefore, operation of OLTCs is critical for voltage stability and line losses of the system. Numerous studies have been carried out in this area remodeled the voltage collapse phenomenon by co-relating non-linear dynamic models of impedance loads, OLTCs and de-coupled reactive power-voltage relation investigated the effect of dynamic tap changer on voltage stability using eigen value analysis proposes a method for modeling, analyzing and designing slow distributed voltage control schemes. In the stability region around the stable equilibrium is derived through nonlinear analysis of the continuum model discussed the reverse effect, whereby the transformer secondary voltage is lowered as the tap-changer terminal position as the load increases to increase the secondary voltage.

Electrical architecture for integrating photovoltaic generation systems into DC micro grids

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ABSTRACT

This paper describes a preliminary analysis on the integration of renewable energy systems in smart micro grids. The initial theoretical evaluations are referred to the case study of a laboratory DC micro grid interconnecting: electric mobility, stationary storage systems and renewable energy sources in a smart grid scenario. Specific power architectures for the integration of a7kWp solar generation system with the considered micro grid are analysed and compared, in terms of efficiency and costs, in order to support the choice and the design of optimal solutions. Modeling and simulations of the related components are carried out in Matlab-Simulink environment in order to evaluate the performance of different embedded maximum power point tracking techniques, working in balanced and unbalanced irradiance conditions for the considered PV generation system. The promising results and the considerations reported in this paper high light the importance of using the proposed smart power architectures and the related control techniques to support the optimal use of sustainable energy generation systems.

1. INTRODUCTION

In this context, the smart grid concept plays an important role as it is expected to support the electrification of the transport sector through the efficient integration of stationary energy storage systems and other sources. In particular, smart grid scenarios have been widely studied in the literature as a way to improve electricity generation and distribution networks, achieving high flexibility, efficiency, reliability and security. Starting from the above considerations, various papers reported in the scientific literature have mainly focused the attention on the optimal integration of renewable energy sources and sustainable mobility in a smart grid scenario. In particular, the first series of articles analyze and propose electrical architectures used for the optimal design of smart PEV charging stations and the integration of renewable energy sources. In the authors the consideration of electrical architectures for grid integration of renewable energy systems was analyzed, with a particular focus on multilevel modular converters.

Active Power Regulation of Hydro Electric Power System using IDD optimized FPA

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ABSTRACT

In this paper an attempt is made to propose the different models of control and design such as integral derivative (ID), proportional integral derivative (PID) and integral double derivative (IDD) effectively optimized through flower pollination algorithm (FPA) for active power regulation of modern energy system having hydro dominating areas. At first, the performance of FPA-ID, FPA-PID and FPA-IDD founded LFC are evaluated for standard load change in one control area and their performance for system model is judged on the basis of inverse time multiplied absolute error (ITAE). The results obtained show the advancement of FPA-IDD over other designs for hydro dominating energy system. The performance of the control lacks in minimizing system overshoot, oscillations and settling time due to large responding time of hydro turbines.

***Keywords*:** AGC; Flower pollination algorithm; FPA-ID; FPA-PID; FPA-IDD; RFB; UPFC

1. INTRODUCTION

As electricity generation shifts to hydropower, regulating active power will become a challenge for power companies because the response time of hydroelectric turbines is much longer than that of thermal turbines, regulating this will cause performance degradation and system instability after rapid load changes. Hence, it is always welcome step in the AGC studies to come up with some strong optimization techniques such as flower pollination algorithm (FPA) to evaluate the gains of conventional controllers as well as to explore the different structures in order to achieve the standards of AGC. Further, most of AGC studies are related to thermal power plants and very less efforts are made to study hydro dominating models due to large turbine time constants resulting in loss of system stability. Unified power flow controller (UPFC) is also a member of FACTS family which is much cheaper in cost and installed in series with the tie-line to enhance the performance of hydro dominating power system.

The Brain Computer user Interface: the Next Generation of Though- Based Technology

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ABSTRACT

Brain computer interface technology represents a highly growing field of research with application systems. Its contributions in medical fields range from prevention to neuronal rehabilitation for serious injuries. Mind reading and remote communication have their unique fingerprint in numerous fields such as educational, self-regulation, production, marketing, security as well as games and entertainment. It creates a mutual understanding between users and the surrounding systems. This paper shows the application areas that could benefit from brain waves in facilitating or achieving their goals. We also discuss major usability and technical challenges that face brain signals utilization in various components of BCI system. Different solutions that aim to limit and decrease their effects have also been reviewed.

Keywords: Brain Computer Interfaces, Brain signal acquisition, BCI applications, Mind commands, Brain monitoring, BCI challenges.

1. INTRODUCTION

Brain Computer Interface (BCI) technology is a powerful communication tool between users and systems. It does not require any external devices or muscle intervention to issue commands and complete the interaction [1]. The research community has initially developed BCIs with biomedical applications in mind, leading to the generation of assistive devices [2]. They have facilitated restoring the movement ability for physically challenged or locked-in users and replacing lost motor functionality [3]. The promising future predicted for BCI has encouraged research community to study the involvement of BCI in the life of non-paralyzed humans through medical applications.

However, the scope of research has been further widened to include non-medical applications. More recent studies have targeted normal individuals by exploring the use of BCIs as a novel input device and investigating the generation of hands-free applications [1], [2]. The use of BCI interfaces for healthy users has been subject to some doubts as discussed in [4]. The problem of poor information transfer rate (ITR) of BCIs and its effect on reducing the commands user can give has been addressed as one of those issues.

Hybrid RF/MIMO-FSO Relay Systems over Gamma- gamma Fading Channels

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ABSTRACT

This paper presents a new architecture for hybrid radio frequency (RF) / free space optical (FSO) communication systems. RF and FSO connections based on an adjustable gain AF relay are connected in series. The proposed method uses RF-FSO or FSO-RF paths for data transmission. Fading of RF and FSO systems is modeled by Rayleigh and Gamma-Gamma distributions. FSO links are expected to use direct detection (IM/DD) intensity modulation and heterodyne detection techniques. This paper presents new closed-form expressions for the outage probability (OP) and the bit error rate (BER). The performance of the proposed system is compared with a single RF-FSO system under different atmospheric disturbance conditions. Numerical results show that the new RF-FSO/FSO-RF system has a significant improvement over the single RF-FSO system. for dB, we get the outage probability and RF-FSO of our proposed system, and , respectively.

1. INTRODUCTION

In recent years, Free Space Optical (FSO) communication systems have been considered as a promising solution for many applications. This is due to the availability of broadband, low energy consumption and affordable implementation. In addition, direct communication between sender and receiver can achieve high link protection [1]. The advantages of the FSO system make it a low-cost alternative for fifth-generation (5G) backhaul in high-demand applications such as metropolitan areas [2]. However, the implementation of the FSO system has serious challenges due to the use of the free space channel, which significantly reduces the connection quality [3]. Atmospheric turbulence and visibility limitation caused by airborne particles, heavy snowfall and fog are also the most important challenges for the FSO system [1]. In addition, strong winds and weak earthquakes can cause vibrations in buildings or towers where the transmitter and receiver are installed. These phenomena can cause an error of indication [4], [5]. The authors of [1] claimed that a hybrid RF/FSO system reduces the aforementioned negative effects on the FSO system.

A New Voltage- State Configuration for a First- order all –pas filter with one Active Element and All Grounded passive Components

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ABSTRACT

This research paper presents an analysis of mixed user diversity radio frequency (RF)/spatial diversity free-space optics (FSO). With multi-user diversity (COMO), an RF link is modeled using distribution, while the FSO link spatial diversity statistic is derived using a gamma-turbulence mixture model that also takes pointing errors into account. Exact closed-form expressions for the outage probability and bit error ratio (BER) were derived for the considered system model. In addition, a high signal-to-noise ratio (SNR) analysis was performed to provide asymptotic expressions for the outage probability and BER. Finally, numerical examples verified by Monte-Carlo simulations are shown**.**

1. INTRODUCTION

The lack of bandwidth in radio frequency (RF) communication systems has led researchers to wireless optical signal transmission using free-space optical (FSO) communication systems. Although affected by atmospheric turbulence and pointing errors, FSO systems are capable of receiving high data rates for a wireless user [1]. Furthermore, to overcome the challenges of turbulence-induced scintillation and pointing errors, the authors of [2] proposed collaborative RF/FSO relay systems as a mitigation technique. Such systems have the ability to combine the advantages of RF systems, such as mobility and slow fading, with the advantages of high bandwidth and fast installation provided by FSO technology. Multi-user diversity (COM) is recommended in [3], [4] to improve RF link quality in mixed RF/FSO transmission systems. Bidirectional transmission was studied in [3], where a multi-user RF link is modeled by Nakagami- evanescence model, while the FSO link is modeled by the Gamma-Gamma turbulence model. On the other hand, the authors in [4] presented an improvement resulting from the use of MUD on a functional RF link. fading while the FSO link suffers from the Malaga turbulence model. It is worth mentioning that the authors of [3] considered decoding and forwarding (DF) and [4] analyzed amplification and forwarding (AF).

A Multi- output multi –mode Biquadratic Filter With All Passive Components Grounded

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ABSTRACT

The paper presents a multiple-output multiple-mode biquad filter (MMBF) using two differential difference dual-X second generation current conveyor (DD-DXCCII) and six grounded passive components. Presented MMBF simultaneously delivers five voltage-mode outputs and two trans-admittance mode outputs with different filter functionalities like low pass (LP), high Pass (HP) and band pass (BP). This filter possesses some promising analog signal processing attributes such as: simultaneous availability of multiple outputs, IC realization suitability due to the use of grounded passive components, single input multiple output (SIMO) configuration, great sensitivity performance and high frequency of operation. Non-ideal analysis is also presented to highlight the MMBF's acceptably good performance under practical adversities. PSPICE simulations are carried out to verify the functionality of proposed filter that are conveyed by the theoretical analysis.

Keywords: band-pass filters, biquadratic filters, current conveyors, high-pass filters, SPICE.

1. INTRODUCTION

Filters are analog signal processing circuits and used for frequency selective transmissions. Enhancing the versatility of these filters has always been the primary objective of research works related to frequency selective circuits. A multiple output filter is capable of delivering more than one output at a time. When such a 2^{nd} order filter accepts a voltage/current signal and delivers its multiple frequency selective voltage and current versions at the output. Hence, the filter is termed as multiple-output multiple-mode biquad filter. Various multiple-output filters reported in the [1] - [18] are quite promising but suffer from one or more of the below mentioned negative traits: •

Circuit complexity due to excessive use of active elements: [1]–[8], [17]–[18] use three active element each and [9]–[10] use four active element each. Excessive use of passive components: [3] employs eight passive components and [4] employs nine passive components.

Facial Recognition Technology: Enhanced Security to The ATM

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ABSTRACT

Automated Teller Machine (ATM) has been convenient approach than ever before for accessing bank's account from anywhere anytime. Being an electronic telecommunication device, it helps customer to perform transactions/withdraw cash, make deposits & transfer funds by simply touching few buttons on screen without need for a cashier or bank teller. A survey showed that there is no proper security in withdrawing cash from ATM's. There are no proper authentication methods applied for security during ATM transactions. In this paper, security approaches of ATM have been focused on, and has been improved using biometric based authentication technique i.e. , face recognition from 3 angles. One of the main motive is to diminish and tranquillize the effects of attacks to ATM by use of biometrics. The end result is strengthened biometric ATM system that will be a defending approach in coming year and will escalate the confidence of customer's in banking sector.

Index Terms- ATM system, Security, Strengthen, Biometric Authentication..

1. INTRODUCTION

In modern world, numerous of people are dependent on computers for keeping major record of data. Data are transferred in a cost-effective manner across wide area. ATM is one of the automatic systems being used since 1967 by many of us. ATM was invented by John Shepphardbaren on June 1967 at United Kingdom [3]. It first came in India in 1968. Today, many people have PIN's and password for operating multiple devices like car, mobile, ATM machines ; herein using PIN's without safety results in a major difficulty faced by customers like usability, memorability and security [3]. Some people used to write their PIN and password on some paper or diary which is not at all secure. As, it can be easily attacked and hacked by someone, resulting the account holder can suffer. With the growing sector of banking, everyone is using ATM machines as these machines are located in different places and the customer can access his account anytime anywhere. A customer holding a bank account can access the account from ATM systems by getting a PIN or password confidentially from bank. By scratching the ATM card into the machine and entering PIN number, one can easily perform transaction, transfer money, etc. PIN number is a crucial aspect used to secure information of customer's account, thus should not be shared with others.

Energy – Efficient Techniques For 5G Cellular Networks in WSM

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ABSTRACT

A wireless sensor network is the smallest unit of a network which supports large scale deployment, reliability, mobility etc. WSN has various nodes which are connected by radio frequency or any other medium without wire. These nodes are sensor nodes which gather information and transmit the data to the user. This transmission requires energy. With the advancement of technology from 4G TO 4GLTE in mobile communication, the no. of users have been increased which requires communication without break. This results in power drain of mobile batteries. So, in order to enhance the longevity of mobile batteries, a scheme should be introduced to minimize the energy consumption which will result in prolonged battery life. In this paper we discuss and compare various schemes which have been proposed to reduce the energy consumption and establish an energy efficient securecommunication scheme in wireless sensor network and mobile ad-hoc network.

Keywords: Wireless sensor networks, Energy consumption,5G mobile communication, Wireless networks, Wires, Urban areas, Energy efficiency.

1. INTRODUCTION

The rapid growth of cellular network is primarily influenced by tremendous growth in wireless user devices. By the end of 2020, the fifth generation (5G) mobile network is expected to be launched. However, 5G requires the features like secure communication, infrastructure, energy efficiency, low cost, zero latency and high speed connections [1]. Wireless sensor networks typically characterized by battery powered sensor devices. As it is practically not possible to change the batteries of devices frequently, we need some scheme to enhance the battery life of sensor devices. A wireless sensor network is a network consisting of spatially distributed autonomous devices using sensors to co-operatively monitor physical/environmental conditions such as temperature, sound, vibration, pressure, motion/pollutants at different locations. User satisfaction and quality of experience are significantly important now-a-days. [2] WSNs often involve battery powered nodes which are active for a long period in absence of human control.

Battery less Phone

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ABSTRACT

If the date is January 9, 2007, that is the date the world saw the first smart phone, and in fact the first "touch screen phone". Mr. Jobs, the owner of Apple Inclusive, launched the "I phone" which aims to make everyone's life easier. And then ten years have passed since the launch of the Smartphone, and in those 10 years, the world has experienced a revolutionary change in the age of Smartphone. One of the most drastic changes was seen in the batteries of these Smartphone, which ranged from an average of 1000 mAh to 5000 mAh. Over the past few years, intensive use of Smartphone for various purposes has led to rapid battery drain. Various studies have been done to find the exact cause of rapid battery drain and its solutions, although none of them have been able to produce anything concrete and thus instead of finding a solution to long battery life. , came up with a different solution, and that was to build phones that could be used without batteries. This research paper focuses on "Battery Saving Smartphone" apps and its advantages and disadvantages. It also outlines some of the financial and potential changes that can be made based on our research.

Keywords: Invention, Advantages, Disadvantages, Incentives, Economy Factor, Astonishing Technology, Computer Science, Battery drain.

1. INTRODUCTION

Smartphone today are indeed smart, but are they really as smart as the companies claim? The answer to that question is yes, but aren't they really stupid when it comes to battery life? Yes, they are. Even companies that sell Smartphone at phenomenal prices have problems with battery performance [1]. The performance is better compared to others, but it is still a mystery when it comes to longevity. The idea of battery-free Smartphone was started by a group of researchers at the University of Washington who invented a phone with dial keys, and the next surprise was that the phone was designed so that it could collect energy from "radio signals". . The developed phone has a dial pad, a small LED light and also an E-ink screen**.**

Fast Non-Volatile Optical Memory

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ABSTRACT

We proposed, fabricated and studied a new high-speed optical non-volatile memory structure. The proposed memory recording mechanism uses the reversal of the magnetization of the nanomagnet by spin-polarized light flux. It was experimentally shown that the operating speed of this memory can be very fast above 1 TBit/s. The challenges of implementing both fast storage and fast read are discussed. The memory is compact, integrable and compatible with current semiconductor technology. If realized, it will push computing and computing technology to higher operating speeds.

Keyworks: fast optical memory; spin transfer torque; ferromagnet-metal/semiconductor hybrid; nanomagnet; spin-polarized current; fast electron transport .

1. INTRODUCTION

Data processing and transmission require ever faster operating speeds. A transmission speed of 25.4 TBit/s through a single optical fiber has been demonstrated [1]. However, due to the speed limitation of current electronic components, data is transmitted through multiple channels at different optical frequencies. Since each channel requires individual electrical and electro-optical components, such a system is complex, expensive, and high in power consumption. Due to the presence of ultra-fast optical non-volatile memory, the high bandwidth of optical fibers can be used in more applications, and it can be expected that the energy consumption of data processing will be significantly reduced. High-speed data processing, optical links between chips, and optical buffer memory are some possible applications of high-speed non-volatile memory. High-speed non-volatile optical memory is an essential component to achieve the required high-speed data processing. This memory has two main applications. The first major application of fast memory is the chip-to-chip interface [2,3]. Its purpose is to transfer data from one silicon chip to another in the shortest possible time. On-chip electrical memory such as dynamic random access memory (DRAM), static random access memory (SRAM), phase shift memory (PRAM), flash memory, resistive random access memory (ReRAM) [4] and magnetoresistive random access memory.

A Gesture- based Robotic Vehicle that Uses Sixth Sense Technology

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ABSTRACT

The way humans and robots interact has been developed using various technologies. Using gestures controlling the robot vehicle is the main way to improve the interaction. The user does not need to be in physical contact device in this interactive technology. It helps fill the technology gap for interactive systems. A robot car The purpose of this process is to define the real-time motion commands of users, which are realized by image processing algorithms and integrated methods.

KEYWORDS: Robotic vehicle, Gesture, Image processing algorithm.

1. INTRODUCTION

The power of human gestures improves human-robot interaction, making it independent of input devices. The use of gestures gives a more modest way to control and offers a rich and natural interaction with the robot. head the goal of gesture recognition research is to recognize a certain human gesture and possible information for the user complexity for a single gesture , A specific gesture of interest can be identified by a gesture question and Based on this, the robot system can receive a quick command to perform an action. An important advantage is that it presents a natural way to send information to the robot, such as forward, backward, left and right movements, etc. Transitivity to the user-friendly interface, the user can give commands to the wireless robot with hand gestures. An early device it was mainly to count the dead and control the robot without a natural carrier. This article is about the user interface robots that use gesture control technology, but far from the user. This can be achieved through image processing technique.

Biometric functional surface of 65Mn steel for Minimizing soil adhesion

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ABSTRACT

The wonder of soil attachment happens when soil-tillage actualizes associated with soil, which regularly increments the working resistance and vitality utilization. It was found that the membranous leaf sheath of rhizoma imperatae can carry in soil, owing to not as it were it's possess development constrain, but too the anti-adhesion work due to the hydrophobicity and uncommon surface. In this article, the microstructure and surface wettability of membranous leaf sheath were considered to uncover its anti-adhesion property by testing. The anti-adhesion instrument of the hydrophobic surface for the inactive and energetic state was analyzed. The biomimetic examples were planned and created utilizing 65Mn steel propelled by film leaf sheaths. The hydrophobic surface was gotten on 65Mn steel by the moo free vitality adjustment with myristic corrosive ethanol arrangement. For comparison, a 65Mn steel test without alteration was moreover arranged.

1. INTRODUCTION

Soil-engaging instruments are basic for field operations in farming and respectful engineering.1 For the soil-engaging components of rural apparatus, soil grip has been an critical issue influencing rural production,2 which expanded the working resistance and vitality utilization of these machines.3 Making strides the productivity of rural operations has continuously been critical for agriculturists and engineers.4

For the purpose of diminishing cement powers between soil and surfaces of soil-engaging devices, numerous researchers have attempted distinctive ways to unravel the issue, such as optimizing the structure of instruments, surface coating, surface shape adjustment, vibration, oil, warming, a adaptable structure, electro-osmosis, and magnetization have been investigated.2,3 For occurrence, ultrasonic and mechanical vibration were connected to decrease soil adhesion.5–7 The alteration to the wrinkled tines by ultra-high atomic weight polyethylene (UHMWPE)

Model predictive control for a micro-turbo shaft Engine design and verification

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ABSTRACT

In this article, a nonlinear demonstrate prescient control calculation for a micro-turboshaft motor is outlined. The control impact is confirmed by a seat test. To begin with, a micro-turboshaft motor test seat is built, and the open-loop control try was carried out on it. Based on explore information, a direct parameter changing forecast show is built up. At that point, by online rolling optimization based on multistep yield expectation, beside input adjustment, a nonlinear demonstrate prescient control calculation is gotten. The impact of calculation parameters on the control impact is examined, and sensible expectation period M, control period N, and control coefficient R are outlined. At long last, the application of nonlinear show prescient control in micro-turboshaft motor is confirmed by seat test

1. INTRODUCTION

Demonstrate prescient control (MPC) could be a model-based closed-loop optimization control procedure, which has been utilized for more than 15 years within the industry as a successful implies to bargain with multivariable compelled control issues. Its essential rule is to utilize expectation model to foresee the yield of controlled protest at different minutes within the future agreeing to chronicled data of control framework and future control amount and after that calculate the ideal control amount within the expectation period by rolling optimization strategy. MPC has accomplished much advance on online optimization, solidness, and execution issues for nonlinear frameworks and appears great vigor within the genuine complex control process. In see of unavoidable presence of numerous physical imperatives and vulnerabilities in aero-engine control frameworks, and the expanding requests for exactness and execution of aero-engine control frameworks, increasingly analysts pay consideration to MPC in aero-engine control field. At show, MPC calculation investigate is basically for turbojet and turboprop motors, and ordinary control of turboshaft motors still employments cascade proportional–integral (PI) control.

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Enhanced heat transfer in working fluids with ramped-wall Nan particles: Uses in engine oil

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ABSTRACT

The reason of this article is to examine the stream of Maxwell liquid with nanoparticles, that's, molybdenum disulfide and graphene with inclined temperature condition at the boundary, and motor oil is considered as base liquid. Besides, molybdenum disulfide and graphene nanoparticles are uniformly disseminated within the base liquid. The issue is modeled in terms of halfway differential equations with physical beginning and boundary conditions. To form the framework of overseeing conditions dimensionless, we presented a few appropriate non-dimensional factors. The gotten dimensionless framework of conditions is fathomed utilizing the Laplace change strategy. From graphical investigation, it can be taken note that the speed is tall with isothermal divider temperature and lower for sloped divider temperature. These arrangements are confirmed by comparing with the well-known distributed comes about. In expansion, the material science of all parameters of intrigued is examined through charts.

1. INTRODUCTION

The subject related to nanofluids is getting more consideration within the final three decades within the field of science as well as in designing and natural sciences. The routine base liquids, for illustration, lamp fuel oil, motor oil (EO), water, polyethylene glycol, and ethylene glycol, are utilized for warm transport reason. They have moo warm conductivities as a result of which the warm exchange rate is reduced. The primary logical attempts have been examined by Maxwell who clarified the method of suspending a few micro-sized strong particles within the base liquids. In any case, there were a few restrictions in Maxwell's handle of suspended micro-sized strong particles. Afterward, Choi presented the concept of nanofluid which was acknowledged, and presently nanotechnology is utilized in organic and building sciences. Nanoparticles are scattered consistently completely different base liquids to extend the warm exchange rate of the base liquids. The scattering of nanometer-sized particles is superior than micro-sized particles because of a few substantial reasons such as nanoparticles are steadier as compared to micro-sized particles. Nanofluids have numerous valuable applications in physical marvels due to tall warm conductivities.

Estimation of an interval for the contact stiffness of a bolted joint with undetermined parameters

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ABSTRACT

Blasted joints are components utilized to form safe congregations within the mechanical framework, who's by and large execution is enormously influenced by joints' contact firmness. Most of the investigation on contact solidness are based on certainty hypothesis while in genuine applications the vulnerability characterizes the parameters such as fractal measurement D and fractal harshness parameter G. This article presents an interim estimation hypothesis to get the solidness of catapulted joints influenced by questionable parameters. Geology of the contact surface is fractal included and decided by fractal parameters. Joint firmness demonstrate is built based on the fractal geometry hypothesis and contact mechanics. Geology of the contact surface of catapulted joints is measured to get the interim of dubious fractal parameters. Conditions with interim parameters are fathomed to procure the interim of contact firmness utilizing the Chebyshev interim strategy.

1. INTRODUCTION

Bookkeeping for up to 50% of the overall solidness of the mechanical framework, the solidness of blasted joint can influence the generally execution of frameworks. A few models of blasted joint based on the certainty hypothesis have been displayed to consider the characteristics of joints. In any case, instability exists in parameters such as the fractal measurement, fractal unpleasantness parameters, and jolt pre-tightening drive. Machining mistake and estimations make fractal measurement and fractal unpleasantness dubious. The certainty hypothesis may result in a greater blunder when the number of questionable parameters is raised or the instability extend expanded. Hence, building up a steady hypothetical foundation and modeling is vital for anticipating the firmness of the blasted joints precisely. Fractal contact hypothesis has been broadly connected to the examination of the joint surface issues for the self-similarity and self-affinity of machined surfaces.

The stability of a high-order splitting approach for incompressible flow based on discontinuous velocity and continuous Pressure is evaluated

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ABSTRACT

In this work, we deal with high-order solver for incompressible flow based on velocity correction scheme with discontinuous Galerkin discretized velocity and standard continuous approximated pressure. Recently, small time step instabilities have been reported for pure discontinuous Galerkin method, in which both velocity and pressure are discretized by discontinuous Galerkin. It is interesting to examine these instabilities in the context of mixed discontinuous Galerkin–continuous Galerkin method. By means of numerical investigation, we find that the discontinuous Galerkin–continuous Galerkin method shows great stability at the same configuration. The consistent velocity divergence discretization scheme helps to achieve more accurate results at small time step size. Since the equal order discontinuous Galerkin–continuous Galerkin method does not satisfy inf-sup stability requirement, the instability for high Reynolds number flow is investigated. We numerically demonstrate that fine mesh resolution and high polynomial order are required to obtain a robust system.

1. INTRODUCTION

Irregular Galerkin strategy (DGM) is one of the foremost potential high-order discretization strategy among the state-of-the-art strategies, such as limited distinction strategies and limited volume strategy (FVM). DGM has pulled in parcels of consideration from both scholarly and industry community for the ease to realize high-order extraordinary joining rate, geometrical adaptability, numerical soundness, and great extensibility. On the contrary, the numerical recreation of incompressible Navier–Stokes (INS) conditions may be a key issue within the inquire about of DGM but still distant from completeness. This article is committed to talking about the solidness DGM coupled with ceaseless Galerkin (CG) within the reenactment of INS issues. For the recreation of INS conditions, coupled solver fathoms all components of speed and weight in a solid way, which require the arrangement of saddle point issue and non-linear cycle. Due to the complexity, the coupled solver has as it were been connected in little scale scholarly cases.

Aerodynamic performance of energy ball wind turbines investigated experimentally and computationally

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ABSTRACT

Small-scale wind turbines with imaginative plan are presented for little applications, giving clean renewable vitality to country homes, road lighting, and half breed frameworks. Vitality ball wind turbine, known as Venturi wind turbine, has untraditional blades' shape and extraordinary streamlined behavior that makes a venturi impact on the discuss stream passing through its aspherical shape. This article speaks to an integration of computational liquid flow and wind burrow experimentation to think about the streamlined execution of a fabricated demonstrate of vitality ball wind turbine. Physical models with diverse turn points were manufactured and tried in a little wind test segment. In these tests, energetic torque, precise speed, and coefficient of execution values were measured at diverse speeds. The exploratory control coefficient comes about were examined appearing the best-tested turn point. Liquid stream reenactment has been created in ANSYS Familiar program.

1. INTRODUCTION

A modern era of small wind turbines showed up after the oil emergency. Wind turbine innovations, as of late, have essentially progressed the increment in turbine size, effectiveness, and ease of establishment. In expansion, turbine proficiency has expanded due to modern edge plans and present day inventive shapes and strategies. Small-scale wind turbines (SSWTs) work with generally high rotational speed due to the small sweep so that there's no require for a gearbox. This approach decreases the fetched, support, and progresses the unwavering quality and productivity at low wind speed operation.

Small wind turbines have less creating capacity than the colossal commercial turbines found on wind ranches. In any case, their diminished costs and included flexibility permit wind control to be utilized in a more extensive set of applications rather than working 80% of the time due to its low cut-in wind speed. These small turbines are utilized basically for conveyed generation—generating power for utilize on-site—rather than transmitting vitality over the electric lattice from central control plants or wind ranches.

Investigating the use of wind power in moving reference frames for automotive applications

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ABSTRACT

The plausibility of extricating wind control from one of a kind arrangements inserted in moving vehicles utilizing microturbine gadgets has been examined. In such situations with moving outlines or stages, fueled either by people like bikes or by chemical responses like automobiles, the particular control of the discuss movement is much more prominent and less discontinuous than in stationary wind turbines secured to the ground in open air conditions. In a translational outline of reference, the rate of work done by the drag constrain acting on the wind tackling gadget due to the relative movement of discuss ought to be taken under consideration within the generally execution assessment through an vitality adjust. A gadget with a venting tube has been tested that interfaces a high-pressure stagnating stream locale within the front of the vehicle with a low-pressure locale at its raise.

1. INTRODUCTION

As the global energy economy transitions away from conventional advances to renewables, wind vitality has ended up a promising elective vitality source over the a long time, particularly with the plan and development of expansive wind ranches in which each person wind turbine is secured to the ground. One major impediment of this setup is the downtime of control yield when there's no wind blowing. In differentiate, in case one considers the stream environment around moving vehicles, there's always wind vitality accessible, which can be extricated with fittingly planned vitality converters/generators. The major advantage of such a framework is the accessibility of high-velocity discuss nearly all the time. Wind turbines are exceptionally seldom uncovered to 26.7m s^{-1} (60 mph) wind, and when they are, most closed down to ensure their basic astuteness. The major challenge in conceiving and planning such a moving framework is to tackle this plenteous wind vitality with least conceivable vitality misfortune due to the extra drag punishment caused by the generator’s introduction to wind.

Improved thermo hydraulic performance, heat transmission, and pressure loss in a channel with a sinusoidal-wavy surface

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ABSTRACT

Warm productivity improvement in a square channel warm exchanger joined with sinusoidal wavy surface is displayed numerically. The insincerity of stream assault points ($\alpha = 30°$, 45°, and 60°), stream bearings or sinusoidal wavy surface courses of action (V-apex coordinating downstream named "V-Downstream" and V-apex showing upstream named "V-Upstream"), and plentyfulness proportions (blockage ratios = 0.10, 0.15, 0.20, and 0.25) for warm exchange and stream structure are inspected for laminar stream administration (Re = 100–1000). The physical demonstrate for the show examination is approved with the relationship information. The current issue is settled with the limited volume approach (semi-implicit strategy for pressure-linked conditions calculation). The computational data is outlined in shapes of stream topology and warm exchange component within the square channel warm exchanger. The understanding of stream topology and heat exchange component within the square channel warm exchanger is important knowledge to create the warm exchange coefficient within the warm exchanger.

1. INTRODUCTION

The improvement for warm viability in a few sorts of warm exchangers and numerous building gadgets had been performed by numerous analysts. The warm execution and warm exchange improvements in heating/cooling frameworks can be partitioned into two ways: inactive and dynamic procedures. The dynamic method is the expansion of the vitality such as vibration into the framework to develop warm exchange coefficient and effectiveness. The detached strategy is the arrangement of the vortex generator or tabulator such as wing, winglet, confuse, and so on, into the framework to make the vortex/swirling stream, which hinders the warm boundary layer on the exchanged surface. The vortex stream and warm boundary layer unsettling influence are causes for warm transfer coefficient and effectiveness advancements within the warming unit.

Packets of Wavelet to identify damaged bearings, transform processing and genetic neuro-fuzzy classification are used

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ABSTRACT

An incredible venture is made in upkeep of apparatus in any industry. An enormous rate of this is often went through both in specialists and in materials in arrange to avoid potential issues with said gadgets. In arrange to maintain a strategic distance from superfluous costs, this article presents a shrewdly strategy to identify beginning issues. Especially, this think about centers on heading due to the reality that they are the mechanical components that are most likely to break down. In this article, the proposed strategy is tried with information collected from a quasi-real mechanical machine, which permits for the estimation of the behavior of flawed heading with nascent surrenders. In a moment stage, the vibrations gotten from sound and imperfect pieces are prepared with a multi resolution analysis with the reason of extricating the foremost curiously characteristics. Especially, a Wavelet Parcels Change handling is carried out. At long last, these parameters are utilized as Genetic Neuro-Fuzzy inputs; this way, once it has been prepared, it'll demonstrate whether the analyzed mechanical component is flawed or not.

1. INTRODUCTION

Machinery may be a essential part of any industry; in this manner, any breakdown might suggest an broken period of time and in this way financial misfortune. Thus, upkeep plans are a crucial portion of conventions in building. Analyzing basic components includes getting to know their inner state, which, in turn, permits for an early detection of early flaws. One of the foremost basic components in any mechanical machine is rolling bearing, which suggests that foreseeing any potential blame or breakdown is basic. In this sense, by knowing the ordinary state of the apparatus, its checking seem offer assistance to anticipate a breakdown since any apparatus would appear a flag some time recently coming up short. As a result, condition checking permits for the discovery of beginning defective mechanical components, which is why this strategy is such a broadly explored research field. A vital perspective of this work is that the experimental laboratory bench used to gather information incorporates a spiral stack due to the truth that usually the foremost critical constrain for which rolling bearings are outlined.

A Study on Customer Preference towards Lens kart Online Shopping

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ABSTRACT

A retailer or shop keeper is a business that presents a selection of goods or services and offers to sell them to customers for money or other goods. Shopping is an activity in which a customer browses the available goods or services presented by one or more retailers with the intent to purchase a suitable selection of them. People purchase things what they need. The various types of shopping available for customers are: Shopping hubs, or shopping centres, are collections of stores; that is a grouping of several businesses. Typical examples include shopping malls, town squares, flea markets and bazaars. Stores are divided into multiple categories of stores which sell a selected set of goods or services.

Keywords: Big-box stores, hypermarkets, convenience stores, department stores, general stores, dollar stores etc

1. INTRODUCTION

Online shopping or e-shopping is a form of electronic commerce allowing consumers to directly buy goods or services from a seller over the internet using a web browser. Alternative names are: e-web-store, e-shop, e-store, internet shop, web-shop, web-store, online store, online storefront and virtual store. Mobile commerce (or m-commerce) describes purchasing from an online retailer's mobile optimized online site or app. An online shop evokes the physical analogy of buying products or services at a bricks-and-mortar retailer or shopping centre; the process is called business-to-consumer (b2c) online shopping. In the case where a business buys from another business, the process is called business-to-business (b2b) online shopping. The largest of these online retailing corporations are alibaba, amazon.com, and eBay. Retail success is no longer all about physical stores. This is evident because of the increase in retailers now offering online store interfaces for consumers. With the growth of online shopping, comes a wealth of new market footprint coverage opportunities for stores that can appropriately cater to offshore market demands and service requirements.

ICT and Rural Development in India

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ABSTRACT

Remarkable societal changes and transformation brought about by information and communication technologies (ICTs), or synonymously new technologies (NTs), since 1970s are now having significant effects on the way the people live, work, and play in contemporary society. but, more often than not, greater attention concerning their impacts is given to the urban, rather than to the rural, segment of this contemporary society, specially that in India. It is needless to say that though the ICTs are impacting both urban and rural sectors of Indian society, yet it must be admitted that the potential role and scope of the NTs to transform and develop rural India into a modern society is much larger in comparison than is the case with regard to urban India. The reason is that Indian society as basically consisting more than 630,000 villages, where, according to the census of 2011, 70% (743 million) of the Indian population live. Furthermore, the importance of rural; development derives from the fact that from 65 to 70 present of the Indian population is dependent on agriculture for their livelihood.

1. INTRODUCTION

Development can also include improvements in the capabilities of the population, such as education health and nutrition, independently of any direct or indirect economic impact. The ability to participate in democratic decision-making also falls into this category. In the rural context, development involves use of physical, financial and human resources for economic growth and social development of the rural economies. The term rural development also represents improvements in the quality of life of the rural people in the villages. As per the Chambers (1993) “Rural development is a strategy to enable a specific groups of people, poor rural women and men , to gain for themselves and their children more of what they want and needs”. ‘’Sustainable Rural Development can make a powerful contributions to four critical goals of :Poverty Reduction, Wider Shared Growth, Household, National, and Global Food Security and Sustainable Resources Management”.