IRSD 2017

International Conference on Interdisciplinary Research for Sustainable Development | 6-7 November 2017

National Institute of Technical Teachers Training &Research (NITTTR)
Chandigarh (India)

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National Institute of Technical Teachers Training and Research (NITTTR) Chandigarh

2017 IRSD Green ThinkerZ Society, India

Spoken Tutorial
IIT Bombay
MHRD, Govt. of India

Organized by:

Green ThinkerZ Society, India in association with NITTTR Chandigarh (India) and Spoken Tutorial, IIT Bombay, India

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PREFACE

We are happy to bring out the Conference Proceedings of the **2017 International Conference on Interdisciplinary Research for Sustainable Development (IRSD–2017)** at **NITTTR Chandigarh (U.T.), India** on **6th & 7th November 2017** (Monday & Tuesday), as a special issue of abstracts of all accepted papers for presentation and publication in UGC Approved and refereed Indexed International Journals. The Conference has been organized by the **Green ThinkerZ Society, India** in association with **NITTTR Chandigarh, India & Spoken Tutorial Project, IIT Bombay**.

The preparation for the conference started nearly Ten months ago with the help and support of all the Conference Committee Members after a successful IRSD 2016 at NITTTR Chandigarh in December 2016. We are thankful to the support provided by their respective organizations. The conference is quite a success in the sense that we had received a good number of 178 papers/abstracts from 7 different countries across the globe. The reviewers, especially from India, had done wonderful work and reviewed the papers within the given time frame. Keeping in view the theme of conference, 72 papers/abstracts are selected for presentation/publication in the conference.

The conference has total 4 paper presentation sessions, 6 keynote addresses, 2 plenary sessions. The Conference has a Special Track on **Free and Open Source Software (FOSS)** powered by **Spoken Tutorial Project, IIT Bombay**. The Conference Proceedings as a special issue that contains all the selected and registered papers/abstracts.

We look forward to reviving and thought-provoking power-packed day at NITTTR Chandigarh, India. The wide range of topics covered in the conference would be beneficial to both industry and academia. We sincerely hope that attending the conference will help the participants in enhancing their professional skill.

We take this opportunity to express our gratitude to the reviewers from India and abroad for their invaluable contribution for assessing the papers and giving suggestions for improving the papers. The authors, whose papers are rejected due to one reason or the other, will take note of these suggestions to improve their paper as per relevant domain and keep pursuing their research endeavours.

We would like to thank the keynote speakers, experts delivering plenary talks and the session chairs for making sessions interesting and fruitful.

We would like to express our thanks to Team of Green ThinkerZ Society for the successful organization of the conference and for providing all the logistic support to the conference. Thanks are also due to the members of various committees for their support in making conference successful.

Every effort has been made for making the conference a success and for the pleasant stay of participants during the conference. We hope that participants will have very productive day at Chandigarh and will return with sweet memories and enhanced knowledge base.

We hope that this "Conference Proceeding will be a valuable document to be referred for a long time.

Dr S Negi
Conference Patron

Er Tanvir Singh
Conference Convener

Dr. S. Negi
Researcher
Institute of Forest Protection
Nanjing Forestry University, Nanjing
Jiangsu, People Republic of China

MESSAGE

It gives me immense pleasure that the Green ThinkerZ Society, India is Organizing the 2nd **International Conference on Interdisciplinary Research for Sustainable Development (IRSD – 2017)** to be held at **NITTTR, Chandigarh, India** on **6 – 7 November 2017** in association with **Department of Computer Science and Engineering, NITTTR Chandigarh, India** and **Spoken Tutorial Project, IIT Bombay, MHRD, Govt. of India**.

I take this opportunity to appreciate the initiative of the organizers to hold a conference on interdisciplinary research domain with a special track on **Free and Open Source Software (FOSS).** Such conferences provide a splendid platform to eminent scholars and researchers to share and converse their research experiences in the relevant fields of science and technology. I am sure that scholars, delegates and keynote Speakers assembled at the event will keenly debate their decisive issues confronting research on Environmental Sustainability, which will pave the way for sustainable development of science and technology.

I convey my best wishes to the organizing committee and delegates of the conference and hope that the proceedings of this conference in the form of special issue of the abstracts of all accepted papers for presentation and publication in UGC Approved and refereed Indexed International Journals will prove highly gratifying for them.

I wish the conference an enormous success.

With sincere regards

Dr. S. Negi
Conference Patron
IRSD - 2017, NITTTR Chandigarh, India

Mrs. Shyama Iyer
National Coordinator, Training – Spoken Tutorial, IIT Bombay
NMEICT, MHRD, Govt. Of India

MESSAGE

It is with great pleasure that I welcome you to the **2nd International Conference on Interdisciplinary Research for Sustainable Development (IRSD 2017).** The key organisers include "Green ThinkerZ Society", NITTTR Chandigarh and Spoken Tutorial, IIT Bombay. The two days in November 6th and 7th will I am certain be enlightening and enriching for all. The Conference aims to facilitate networking of specialist Researchers, Scientists, Govt. of India Project Officers, Industry representatives and senior students and Faculty to achieve a cross-pollination of ideas and initiative experiences.

Today it is vital to think, work and act in the Environmental Sustainability arena. Academics and Researchers – both budding Research Scholars and Research Scientists must take the lead to educate and sensitise all persons coming in their sphere of influence. Concepts of E-Learning, MOOCs, Free & Open Source Software (FOSS) deployment – are relevant, imperative and need the necessary impetus to become widespread and part of everyone's lexicon. It is expected that at the end of two days task forces will be formed to adopt or take up pet projects – per the domain expertise of the group constituent persons – and formulate S.M.A.R.T goals for tangible and definitive projects.

On a personal level I am truly honored to be a Keynote Speaker representing Spoken Tutorial, IIT Bombay, MHRD, Govt. of India ICT program and also a resource person for one dynamic, valuable Technical Writing Software workshop, namely LaTeX. The project is recognised as the frontrunner to sensitise all on FOSS, and I can say this invite is an achievement coming after the six years that we have been active in the Training field.

My thanks to all in the organising committee – Faculty, Officers, Student volunteers, Management – who would have worked many long hours to ensure the Meet is successful. Looking forward to these two days in November spent in the City beautiful, Chandigarh.

Conveying the Very Best of Wishes,

Mrs. Shyama Iyer
Conference General Secretary
IRSD-2017, NITTTR Chandigarh, India

Dr. Yunfei Liu
Director
College of Information Science and Technology
Nanjing Forestry University, Nanjing
Jiangsu, People Republic of China

MESSAGE

It gives me immense pleasure to know that the Green ThinkerZ Society, India is Organizing the 2nd International Conference on Interdisciplinary Research for Sustainable Development (IRSD – 2017) to be held at NITTTR, Chandigarh, India on 6 – 7 November 2017 in association with Spoken Tutorial IIT Bombay MHRD, Govt. of India and Department of Computer Science and Engineering of NITTTR Chandigarh, India.

With the multiple changes in the global scenario, Interdisciplinary Research for Sustainable Development now-a-days has its own significance. This conference will bring in research ideas of various people from different countries in a single forum and which certainly will be a fabulous opportunity for uniting the research fraternity. I hope that large number of budding engineers, academicians, students and research scholars will take part in this two days programme and reap the benefit of its outcome.

I take this opportunity to thank the dignitaries, invited speakers and all the delegates for sparing their valuable time and gracing this conference.

I congratulate the organizing team for their efforts and team work for conducting this conference.

With Sincere Regards

Dr Yunfei Liu
Program Chair
IRSD – 2017, NITTTR Chandigarh, India

Prof. (Dr.) K K Saini
Director - Principal
Hindu College of Engineering, Sonepat, Haryana, India
www.drkksaini.in

MESSAGE

I extend our hearty welcome to all the delegates to the 2nd **International Conference on "Interdisciplinary Research for Sustainable Development (IRSD-2017)" at NITTTR, Chandigarh (India), from November 6 – 7, 2017** organized by **Green ThinkerZ Society, India** inassociation with **Department of CSE, NITTTR Chandigarh, India** and **Spoken Tutorial Project, IIT Bombay, India.**

In the past few years we have seen new computing paradigms emerging from the advancements in massive parallelism, multi-core architecture, management of distributed resources, optimum utilization of individual machine's computing power, Internet and web technology. This has led to a scale of economy, affordability and ease of usage, moving from expensive high performance supercomputing to cluster computing, low – cost service & application oriented grid architecture to user-friendly virtualised platforms in cloud computing and software as a service paradigms. All these have yielded new innovations in applications in medicine, health services, commerce, manufacturing, forecasting, education, entertainment and governance. At the same time, it has posed several challenges to the researchers and developers in terms of management of aspects concerning security, privacy, transparency, scalability, flexibility, standardization etc. I trust this conference will provide a fertile platform to exchange, deliberate and innovate ideas resulting in possible future collaborations in pursuit of the identified goals.

Today, the term 'design and technology' are commonly used as synonymous. But, there exists some subtle difference. Design is the central and unifying activity of engineering and is carried out expressly to benefit mankind. But, the efficacy of design depends largely upon the technology available and it is what makes the two terms as synonyms in use. How technology develops? When an idea is meaningfully integrated with suitable research findings, which can greatly entrance the efficacy of a design, acquires the status of technology. For this to happen we need a common platform and a conference of this nature serves the purpose. It's here one gets the feel and glimpse of the emerging trends of technology and decides the course of future research activity. I thank the researchers for contributing their quality works to the conference, and the sponsors for their valued support and the organizers for their dedicated effort in making this conference a grand success.

Prof. (Dr.) K.K. Saini
Program Chair
IRSD – 2017, NITTTR Chandigarh, India

Dr. C. Rama Krishna
Professor & Head
Department of CSE
NITTTR, Chandigarh

MESSAGE

I am pleased to welcome you to the 2nd **International Conference on Interdisciplinary Research for Sustainable Development (IRSD – 2017)** to be held at NITTTR, Chandigarh, India on 6 – 7 November 2017.

This conference is an ideal platform for technocrats and management professionals to share their knowledge and experience. Various sub themes of the conference will also offer the delegates many opportunities to learn new things and apply the same in their respective workplace.

I am very happy and congratulate the team of IRSD-2017 for organizing the conference on a well thought issue pertinent to Interdisciplinary Research for Sustainable Development.

I am sure that the output of this conference will be benefit to individuals, society and our country as well.

With Best Wishes

Dr. C. Rama Krishna
Organizing Chair
IRSD 2017, NITTTR Chandigarh

Er. Tanvir Singh
Training Coordinator (Punjab, Chandigarh and J&K)
Spoken Tutorial IIT Bombay, MHRD Govt. of India

MESSAGE

It is with great pleasure that I welcome you to the 2nd **International Conference on Interdisciplinary Research for Sustainable Development (IRSD-2017), organized by "Green ThinkerZ Society, India"** in association with **Department of CSE, NITTTR Chandigarh** and **Spoken Tutorial Project, IIT Bombay at NITTTR Chandigarh, India during 6 -7 November 2017.** The Conference provides a valuable platform for researchers, academic institutions, and industries to join together and share their findings, ideas, scientific knowledge and new techniques/applications about most recent developments in different fields. IRSD - 2017 promotes the co-operation in research with individual researcher, academicians and industry people from different domains.

The contribution of the participants is highly appreciable in terms of growth and progress of engineering education around the globe. I am glad to add that this conference has whetted novice researchers' appetite for subsequent studies beyond the syllabus and ongoing relative works. Many individuals have contributed to the success of the Conference. I would like to thank all the participants for submitting their research/review papers. I would like to thank the keynote speakers for their valuable contribution.I am also thankful to all the members of the Organizing Committee and all the Sub-Committees for their dedication and team work.

I would like to extend my gratitude to the Conference Advisory Board members and the technical Reviewers for their suggestions and constructive criticisms in reviewing the papers. Their combined work and wisdom has helped us in selecting the best and relevant papers. As a Conference Convener, it is my duty to remind those who are behind this conference for making a step ahead to make a mark in the research and technological advancements for Sustainable Development. I believe that you will find this conference to be a worthwhile experience.

With Warmest Regards
Er. Tanvir Singh
Conference Convener
IRSD - 2017, Chandigarh, India

Amit Kumar
Researcher
College of Information Science & Technology,
Nanjing Forestry University, Nanjing
Jiangsu, P.R. China

MESSAGE

It gives immense pleasure in writing this message that the 2nd **International Conference on Interdisciplinary Research for Sustainable Development (IRSD – 2017)** organized by **"Department of CSE, National Institute of Technical Teachers Training and Research (NITTTR) Chandigarh, MHRD Govt. of India and Green ThinkerZ Society, India in association with Spoken Tutorial Project, IIT Bombay, MHRD, Govt. of India"** at **NITTTR Chandigarh, India** on **6th & 7th November 2017** is gratifying the objective to organize high quality conference which will contribute to new research initiatives in the domain of Social &Environmental Sustainability research for sustainable development of mankind. A special track on **Free and Open Source Software (FOSS)** technically organized by **Spoken Tutorial Project, IIT Bombay, MHRD, Govt. of India** is praiseworthy and will be highly beneficial for the novice as well as adroit researchers participating in the conference for integration of ICT in their Teaching-learning Process and Research endeavours

I would like to appreciate the team of Green ThinkerZ Society; whose visionary attitude always encourages organizers to make whole hearted efforts for the success of this initiative.

I am thankful to Er. Tanvir Singh, Conference Convener and Mr. Amit Doegar, Conference Coordinator; who have assured the smooth management of all the online and offline operations pertaining to the conference. I also thank the conference organization committee for ceaseless effort to make this event successful.

Amit Kumar
Advisory Board Member,
IRSD - 2017, NITTTR Chandigarh, India

Dr. Balwinder Singh
Coordinator & Senior Engineer
CDAC – Mohali, Punjab, India

MESSAGE

In this period of quickly evolving innovations, it is crucial for all experts to keep side by side for most recent improvements, developing patterns and systems in the territory of Multi-disciplinary Technologies. Certain issues and difficulties confronted in these range should be dealt with appropriate arrangement, more over to accomplish and maintain a particular objective we have to co-ordinate numerous controls in innovation and administration also an incredible test.

In this regards 2nd **International Conference on Interdisciplinary Research for Sustainable Development (IRSD – 2017)** is an ideal platform for technocrats and management professionals to share their knowledge and experiences. Also, the special track on **Free and Open Source Software** in association with Spoken Tutorial Project, IIT Bombay and various sub themes of the conference will offer the delegates many opportunities to learn new things and apply the same in their respective workplace.

I am very happy and congratulate the team of **Green ThinkerZ Society, India**; **Department of CSE, NITTTR Chandigarh** and **Spoken Tutorial Project, IIT Bombay** for organizing the conference on a well thought issue pertinent to Interdisciplinary Research for Sustainable Development.

I am sure the output of this conference will be benefitted to individual, society and our country as well.

Dr. Balwinder Singh
Advisory Committee Member
IRSD-2017, NITTTR Chandigarh, India

Dr. S P Ahuja
Principal
Indo Global College of Management & Technology
Mohali, Punjab, India

MESSAGE

It is heartening to learn that Green ThinkerZ Society, India is organizing the 2nd International Conference on Interdisciplinary Research for Sustainable Development (IRSD – 2017) at National Institute of Technical Teachers' Training and Research, Chandigarh on November 6 – 7, 2017 in association with Dept. of CSE, NITTTR Chandigarh and Spoken Tutorial, IIT Bombay, MHRD, Govt. of India. Conference of such theme becomes all the more relevant in wake of deteriorating life conditions for living beings in general and humans in particular. I hope the conference will prove a confluence of cross discipline research aimed at sustenance of development with ecology. I wish the organizers all the success.

Dr. S P Ahuja
Advisory Committee Member
IRSD 2017, NITTTR, Chandigarh

Dr. Hardeep Singh Saini
Dean, Indo Global College of Engineering
Mohali, Punjab, India

MESSAGE

At the outset my congratulations are with Dr S Negi, Head (Research) & Er Tanvir Singh, President, Green ThinkerZ Society, India for organizing 2nd International Conference on Interdisciplinary Research for Sustainable Development (IRSD – 2017) on a very promising interdisciplinary domain. During the past few years, it has been witnessed a rapid growth in the number and variety of applications ranging from consumer electronics, industrial process control, robotics, medical diagnostics, data mining, bio informatics, power systems to decision support systems and financial trading. These problems are usually imprecisely defined and require human intervention. This conference will deliberate the applications in Engineering and medicine, management, computer security, data mining, signal and image processing, etc. in the way of presentation by eminent speakers. I sincerely hope that you would find time outside your conference to enjoy and visit some beautiful places near Chandigarh.

I wish the participants a very fruitful stay in Chandigarh and enjoy the deliberations.

With Regards

Dr. Hardeep Singh Saini
Advisory Committee Member
IRSD – 2017, NITTTR Chandigarh, India

Dr. Sawtantar Singh Khurmi
Yaduvindra College of Engineering (YCoE)
Bathinda, Punjab, India

MESSAGE

On behalf of the Advisory Board of Green ThinkerZ Society and Conference Committee, I would like to welcome you to the 2nd **International Conference on Interdisciplinary Research for Sustainable Development (IRSD – 2017),** to be held from November 6, 2017 to November 7, 2017 at **NITTTR Chandigarh, India.**

This Conference organized by **Department of CSE, NITTTR Chandigarh, MHRD, Govt. of India**; **Green ThinkerZ Society, India** in association with **Spoken Tutorial Project, IIT Bombay, MHRD, Govt. of India** is an outstanding international forum to present and discuss progress in research, development, standards, and applications of the topics pertaining to Interdisciplinary domains. The special Track on Free and Open Source Software (FOSS) will be going to highly beneficial for the research community owing to the overwhelming technical support offered by Spoken Tutorial Project, IIT Bombay. The popularity of the conferences organized by the Green ThinkerZ is increasing and can be seen from the fact that this year approximately 178 papers have been received for presentation at IRSD 2017. I would like to express our deepest gratitude to all the Conference Committee Members and the Reviewers for their dedicated contributions in the review process. I sincerely hope that all the participants will enjoy the technical program of IRSD 2017.

We thank you for your participation and look forward to seeing you in our future endeavours too.

Sincerely,

Dr Sawtantar Singh Khurmi
Technical Committee Member
IRSD – 2017, NITTTR Chandigarh, India

Mr. Prasad Perera
Management Information System Consultant
University of Moratuwa, Moratuwa, Sri Lanka

MESSAGE

Dear colleagues of the International Research Community for the forthcoming 2nd **International Conference on Interdisciplinary Research for Sustainable Development (IRSD – 2017), India**, we will be delighted to welcome you for what is sure to be two exciting days of discussions and events in a country that is world-renowned for its incredibly rich and diverse cultural heritage.

As an Advisory Board Member of the Conference Committee, I am proud to be involved in such an upscale international event. Packed with stimulating sessions, networking opportunities and committee meetings, the Conference will be an eye opener for the Research Community for Sustainable Development.

It will be my honor to welcome you, together with our Indian hosts, to this momentous event. I am confident that with the help of your contributions and participation, it will be an unforgettable experience. Looking forward for a fruitful knowledge sharing experience in Chandigarh, India.

With Sincere Regards

Mr. Prasad Perera
Advisory Committee Member
IRSD- 2017, NITTTR Chandigarh, India

Eng. Samudaya Nanyakkara
University of Moratuwa, Sri Lanka

MESSAGE

It gives me enormous pleasure that Green ThinkerZ Society, India; is organizing the 2nd International Conference on Interdisciplinary Research for Sustainable Development (IRSD – 2017) at NITTTR Chandigarh on 6th – 7th November, 2017. I appreciate the initiative of the organizers to hold a conference on an interdisciplinary domain.

Such conferences provide a magnificent platform to eminent scholars and researchers to share and discuss their research experiences in the relevant fields of Science & Technology, Education and Management. I am sure that scholars, delegates and keynote Speakers assembled at the event will keenly debate their crucial issues confronting research in Science & Technology, Education and Management, which will pave the way for sustainable development of Science and Technology.

I convey my best wishes to the organizing committee and delegates of the conference and hope that the proceedings of this conference will prove highly gratifying for them in terms of inculcating innovative ideas for Sustainable Development.

I wish the conference a great success.

With sincere regards
Eng. Samudaya Nanyakkara
Conference Coordinator
IRSD- 2017, NITTTR Chandigarh, India

Dr. Rudrarup Gupta
Commercial Manager, Multifarious Projects Group, India
Overseas Reviewer, World Academy of Science and Technology, USA

Green ThinkerZ, an Exemplary Platform for Glistening Environment

Environment is the perdurable medium to create the best cultural modification, which is an unstoppable spirit for a fabulous fusion to enrich the elevating attainments of multifarious research in deed. In such impeccable instance "Green ThinkerZ" has already been into the very profound occupational actions from Chandigarh, India. Moreover it has entrenched a spectacular bond of research for sustainable development for our very comprehensive world just without any inhabitable pause but through a notable cause of upstanding contemplation of their righteous initiative and in other words commendable objective for the entire devoted academic performer in a befitting manner.

This fascinating society pays the indispensible academic values and the ageless moral supports for the real contributors in all over the globe in a very respectful manner. It fetches the great technological metamorphosis for the booming researchers, which is going to be truly thought provoking at all not to highlight their captivating research brilliance but to have the world-wide educational recognition in a very stimulating manner. Right from India to China again from china to Australia plenty of renowned people have already been assembled with each and other to grace this worthwhile society through destined "Sustainable Developments" very rapidly.

I am extremely thankful to this fascinating association and their best occupational magnanimity in all the regards. Their continuous support and the countless organizational spirit have exclusively inspired me and my wholehearted contributions for this ardent research platform to enrich and it has been extremely advantageous to enhance my most evident academic network for projecting my purposeful educational introspection to be globally appreciated. I shall be contributing a lot for this esteemed research consortium, which is gradually snatching the monumental embellishment of technology within a short while.

It is one of the spellbinding Research alliances in all over the globe for the evergreen global actuality for creating an extensive hope of research eminence in deed and I am honestly fortunate to take a pivotal initiative for Green ThinkerZ Society with my paramount satisfaction.

With cordial regards,

Dr. Rudrarup Gupta
Advisory Committee Member
IRSD- 2017, NITTTR Chandigarh, India

Impact of Free and Open-Source Software Paradigm for Environmental Sustainability - Case Study in Higher Education Sector

Kanishka Samudaya Nanayakkara

C.Eng, M.Sc. (CS), B.Sc. Eng (Hons), BIT, MBCS, MIET, MIEEE, MACM, MIE (SL), MCSSL

University of Moratuwa, Sri Lanka

Abstract - Sustainability means achieving people's needs without compromising the ability of future generations to meet their needs, considering three domains including economic, social and environmental sustainability. Pulp and paper industry makes an enormous negative impact on environmental sustainability, and software development and usage also significantly effect on environmental sustainability. This research was carried out to determine environmental sustainability impact of open-source software reuse in development of Educational Management Information System and usage of open-source e-learning platform called Moodle during a year of time in the University of Moratuwa, Sri Lanka. Case study research methodology was used to analyse the data quantitatively and qualitatively. Research outcomes show that some components of environmental stainability concepts called three R's - Reduce, Reuse and Recycle can be achieved by using free and open-source software solutions. The case study showed that available open-source solution could reduce millions of papers used per year in a higher education institute. Medium-scale Management Information System development can reuse free and open-source software components and save hundreds of Gigawatt Hours of energy and dozens of e-waste computers produced by software development. Accordingly, this research concludes that there is a significant impact of free and open-source software paradigm for environmental sustainability in the higher education sector by reducing and reusing resources, especially in limited financial allocations in Information and Communications Technology development.

Keywords - *Environmental Sustainability, Paper Industry, Free and Open-source Software (FOSS), Education Management Information System (EMIS), E-learning, Higher Education Sector.*

Students' Perspective towards the Adoption of E-Learning System of Spoken Tutorials in Arts, Science and Commerce Colleges in the State of Punjab & Himachal Pradesh, India

[1]Amit Kumar, [2]Tanvir Singh

[1]Nanjing Forestry University, Nanjing, Jiangsu, P. R. China

[1]JNV Shimla, HP, India

[2]Spoken Tutorial Project, IIT Bombay, India

Abstract— E-Learning systems have great potential to bridge the Digital Divide in India by using Free and Open Source Software (FOSS) based platforms. A new dimension has already been added to the teaching-learning process with the integration of E-learning in the traditional class room teaching with the implementation of Information Communication Technology (ICT) in Education through FOSS. IIT Bombay has been working for last few years on bridging the digital divide in Indian Schools, Colleges and Universities through 'Spoken Tutorial' Project, funded by MHRD (Ministry of Human Resource Development), Government of India. The implementation of the project has been quite successful in the institutions offering professional courses i.e. Engineering, Management etc. but the same is not the case with the institutions offering humanity, commerce and science streams. In the current study, we have discussed the opportunities created and challenges being faced in the adoption of E-Learning System of Spoken Tutorials in the Arts, Science and Commerce Colleges in the states of Punjab and Himachal Pradesh in India. The study is aimed to identify students' perspective toward the acceptance of E-Learning system in the teaching and learning process. Further, this study attempts to examine the factors influencing Arts, Science and Commerce students' adaptability to the integration of E-Learning in the class room teaching. The findings of this study are based upon a comprehensive survey of more than 100 colleges in State of Himachal Pradesh and more than 500 colleges in the State of Punjab.

Keywords— *E-Learning, ICT, Teaching-Learning Process, FOSS, Spoken-Tutorial*

Rising Leaders are Exceedingly Indispensable for Organizational Team Building

Dr. Rudrarup Gupta

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Abstract **-** Elevating performance is always the very significant alert for a decent success of an organization. Moreover, any organization is actually formed to fulfill their destined occupational objectives in a befitting manner. So organization needs the sound departmental participation in this regard. Then only any organization can enrich the highest organizational standing in deed. On the other hand each employee should have the definite devotion not only to perform well but to understand the present professional celerity in all the regards. Organizational actuality largely depends upon their performances and the achievements respectively. Therefore they need the sincerity, dedication, devotion, diligence and most notably absolute team work. That is why trained leaders are appointed accordingly to construct an unbeaten team, which is one of the massive factors for an organizational apex very shortly. It is honestly pivotal from the perspective of an organization to explore in all over the world. Because each organizational benchmark is entirely successful through some exemplary team works and their united professional devotion for that organization at all.

Keywords **-** *Leader's potential, organizational advancement, essence of team building, consequence of team performance.*

Environmental Implications of the Hydropower Projects in District Kinnaur, Himachal Pradesh, India: A Review

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Abstract- Appraisal of impact of changed flow regime on the river bed ecosystem and supply of environmental flows has become indispensable in the increasing construction of hydropower projects (HEPs). The environmental effects of HEPs can be sorted according to diverse criteria like long term and short term impacts, impacts on the dam operation sites and on the nearby areas areas, social and unsocial effects, positive and negative effects. These impacts possibly be prepared in an concentrated and complex way like climatic, hydraulic, biologic, social, cultural, archaeological etc. Construction and operation of HEPs have constantly been related with changes in the social, physical and natural condition. A portion of the harmful effects of HEPs comprise loss of vegetation, land aggravations, changes in river flow pattern, unplanned resettlement, medical issues, loss of social esteems and minimization of local communities.Therefore, present study is an effort to review the environmental implications of the hydroelectric projects in Kinnaur District of Himachal Pradesh. The investigation proposes that there is a need to evaluate the advantages and adverse social effects of the HEPs in the region. Appropriate environmental evaluation should be done to ensure that rare species are not being lost and individuals dislodged ought to be suitably restored.

Keywords **-***Mountain, Hydropower, Environmental Effects, Resettlement and Rare Species, Kinnaur*

Effect of Organic Manures prepared from Trianthema on Growth of Zea mays L.

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Abstract - Trianthema portulacastrum Linn. commonly known as Desert Horse purslane, it is a creeping, much branched, annual herb. This plant is an invasive weed in irrigated areas of nearly all states of India and other parts of world. The aim of present investigation was to study the influence of different manures prepared from Trianthema on growth of maize. A field experiment was carried out in the Research farm located in the Botanical garden of Dr. Babasaheb Ambedkar Marathwada University, Aurangabad, India to prepare different manures from Trianthema and evaluate the performance of various manures viz. NADEP compost (AC), Bangalore pit compost (BC), Trianthema vermicompost (TV), dry leaf manure (DLM) and garden leaf vermicompost (GLV) on growth of fodder maize. It was compared with chemical fertilizer treatment and Control. Growth analysis was carried out periodically. The application of Trianthema vermicompost was more effective followed by dry leaf manure. Results are statistically significant when compared to chemical fertilizer treatment and control. Manures prepared from Trianthema are the best, active and cheapest source of plant nutrients. It will not only be useful for weed control, but will also promote use of manures to replace chemical fertilization to the deteriorating agricultural lands.

Keywords - *compost, dry leaf manure, vermicompost, weed.*

Hybrid Design of Image Processing Techniques for Multiple Biomedical Applications in MATLAB and FPGA

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Abstract - The Computer Vision has become an essential component in the fields of biomedical applications and laboratory research in which images are processed and analyzed. The aim of the current research is to propose a hybrid design by using watershed algorithm and morphological filters for multiple biomedical applications like detection of brain tumor, lung cancer, gall bladder stone and cataract. The watershed algorithm is first implemented in MATLAB and then FPGA. Co-simulation is also done using HDL Coder. The paper compares the three implementations for watershed algorithm and also detects cataract by morphological filters.

Keywords - *Biomedical, Image Processing, Watershed, Morphological filters, Co-simulation, FPGA*

Effectiveness of Stock Market Regulators: Comparative Study of India with Developed Nations

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Abstract - The development of an economy is largely influenced by financial markets—they competitively allocate financial resources that are mobilized from savers and investors among users in the economy. The Indian stock market is one of the earliest market in Asia, which is operational since 1875. However, it remained largely outside the global integration process until 1991. There has been a conscious effort by the RBI and the Government of India to develop and integrate various financial market segments in a phased manner. Both have proactively shaped the development of financial markets in India through its series of economic policy reforms— market-determined interest and exchange rates, current account convertibility, monetary policy dealing with price-based instruments, auction-based allocation in the government securities market (GSM), and phased capital account. As a consequence, India too has become a part of the world-wide integrated financial system. In this context, this paper seeks to examine whether reform in the Indian stock market has led to integration with the developed stock markets in the world. The study finds that Indian stock market is not co-integrated with the developed market as yet. Only some short-term impact exists. The integration is unidirectional in majority of countries. That is to say, the developed stock markets, viz., Canada, France, Germany, Japan, Norway, Sweden, UK and USA Granger cause the India stock market but not vice versa. Its only with Australia that India have bi-directional causality. It is derived from the study that although some positive steps have been taken up, which are responsible for the substantial improvement of the Indian stock market. However, these are not sufficient enough to make Indian stock market as a matured one and hence not integrated with the developed stock markets so far. From a policy perspective, no co-integration between Indian financial market with developed countries leads to policy formation aiming to level co-integration so as to achieve financial stability.

Keywords - *Unit Roots Test, Cointegration, Variance Decomposition, Granger Causality.*

Year around Performance Analysis of Double Basin Solar Still with Evacuated Tubes

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Abstract - Solar distillation is a simple technique to convert available brackish or saline water into potable water by use of solar energy. Solar still is a device in which solar distillation process occurs. But due to its lower distillate output, it is not used for industrial and domestic potable water need. Hence, the main aim of the present research work to test double basin solar still with Evacuated tubes annually and compared with other researchers work in terms of distillate output. From the one year analysis, it has been found that the, distillate output of present solar still found 12 liter per day and energy payback time and cost or potable water per day is around 117 days and 0.51 Rs.

Keywords - *Double basin solar still, Evacuated tubes, cost of water per day, energy payback time*

A Comparitive Study of Sparse Channel Estimation Techniques for OFDM Systems Based on Compressive Sensing

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Abstract **-** Sparse channels are typically encountered in many communication systems like underwater acoustic channels, communications in a hilly terrain etc. Conventional channel estimation techniques like the Least Squares approach and interpolation based methods do not work well in this case, because these techniques do not exploit the sparse structure of the channel. In this paper, we first present a comparative study of the existing sparse channel estimation techniques based on Matching Pursuit (MP), Orthogonal Matching Pursuit (OMP) and Basis Pursuit (BP) with respect to the mean squared error (MSE) and bit error rate (BER). Then we introduce the novel Compressive Sampling Matching Pursuit (CoSaMP) algorithm and demonstrate its superior performance with respect to the previously mentioned schemes. The channel estimation techniques are compared taking Cramer-Rao lower bound (CRLB) as the reference. Evaluation of the system performance is done in time domain because in frequency domain the system performance becomes dependent on the number of points over which the FFT operation is performed and therefore the interpretation can be misleading.

Keywords **-** *Sparse channels, Compressive Sensing, Matching Pursuit, Basis Pursuit, Cramer Rao Lower bound, MSE and BER(key words)*

Is Distance Education Really Beneficial For Our Society – A Survey

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Abstract **-** Through this paper of mine, I will discuss with the audience, the benefits of distance education. First, we will start with the introduction, then we will continue to the history of distance education and how it is different from e-learning. We will discuss thetechnologies used in distance education. And the most important thing is criticism for distance education, like, why & what is the reasonthat an individual having the regular degree is more valued than the individual having the degree from distance education, if it is sowhat is the need of having the Distance Education in current education system.

Keywords **-** *Virtual education, synchronous, proxy, hybrid, blended.*

Emotional Speech Recognition using Optimized Features

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Abstract - Human speech emotion requires a deep analysis on the acoustic properties of speech production mechanism.Spectral characteristics being a constituent of the acoustic parameter can represent human speech emotion if chose judiciously.Spectral parameters such as Spectral roll-off, Spectral centroid, and Spectral flux have been extracted at frame level initially, to approximate the non-stationary speech signal in a stationary platform. The popular Genetic Algorithm (GA) has been used to optimize the extracted feature sets in the next phase. Neural network classifiers happen to perform better in the presence of small feature dimension. The simple but popular Multilayer Perceptron (MLP) network has been simulated to study the effect of optimized feature sets on the classification accuracy. Utterances from the Standard Surrey Audio-Visual Expressed Emotion (SAVEE) database have been used for the said task. Results suggest the superiority of optimized feature over baseline spectral features in classifying the investigated emotions.

Keywords - *Emotional speech recognition, Optimized features, Genetic Algorithm, Classification, Multi-Layer Perceptron*

Comparative Analysis of Various Types of Photonic Crystal Bends

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Abstract - Photonic crystals are periodically structured electromagnetic media, generally possessing photonic band gaps: ranges of frequency in which light cannot propagate through the structure. The increasing bend losses at longer wavelengths often limit the usable wavelength range of a single-mode fiber. In this paper, the design and analysis of different bending structures has been performed. Three bending structures has been designed with bend angles as: All Crystal, 60 Degree and 90 Degree. In these waveguides, we have seen the propagation of light through them. The observation of the wave when entering this waveguide and when leaving it, has been analyzed. We will analyze which bending structure will provide best results on the basis two parameters: Passband and Ripples. The input wave behaves differently when propagating through different bend angles. To perform these bending techniques, OPTIFDTD software is used.

Keywords - *Photonic Crystals, Hollow Core-Photonic Crystal Fiber, Hexagonal Photonic Crystal Fiber, Modified Total Internal Reflection, Polarization Maintaining Photonic Crystal Fiber.*

Sustainable Development and Resource Management in Growing Economy

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Abstract **-** During the development process natural resources are widely used in various economic sectors. We should make the best possible use of these resources in such a way that we can make optimum utilization of such resources. They should not be underutilized or misused. In our economy, we are adopting the development measures to a large extent. This paper highlights the measures to preserve our resources for coming generations, to become welfare state. This Paper presents an idea about speedy economic development along with preservation of natural resources for future generations. In the present Economic Scenario all the economies are striving their best to become a welfare state. Hence, it is of great importance to discover the base of healthy economic development which may lead the modern world economies to the path of sustainable development. This paper highlights the causes and consequences of the miss utilization of our natural resources it also throws light on the possibilities of exploring such resources which may provide the best possible utilization of our natural resources in such a way that may prevent our so called third world economies from future disastrous and harmful effect of extinction of our precious resources. Now we lay emphasis on speedy industrial growth, causing so many environmental evils as slums, wastage, air pollution, water pollution and degradation of human resource. To get rid of such evils government should have full control on public sector and private sector units, especially the private sector units which are profit oriented and not paying attention to interest of working class, causing ill health and low productivity in future. Reformative industrial and labor laws may prove beneficial in this regard. Thus, keeping in view these perspectives, it is possible to achieve the objective of sustainable development by taking into consideration the preservation of our natural resources for future generations.

Keywords **-** *Economic development, Sustainable development, Industrialization, Globalization*

Wireless Power Generation in Sustainable Technology

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Abstract **-** This paper presents comparative study associated with Wireless power generation using sustainable technology. From survey and review of different papers, different methods for conversion of Radio Frequency (RF) and Microwave Frequency into electric power are presented. The qualitative comparison of different existing methods in production of electric power is being discussed. The approach for harvesting ambient electromagnetic energy through the electronics, converting such electromagnetic energy into electrical power, and retaining this power for utilization of wide range of electrical/electronic circuits are presented. It is possible to power a simple electronic device wirelessly which could be a valuable tool for future use.

Keywords **-** *Radio Frequency, Microwave Frequency, Electromagnetic energy, Electric power, Wireless Power.*

Experimental Investigations on the Performance of PV Modules with/without Module Cooling

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Abstract – Temperature effect on the performance of a photovoltaic module is one of the main concerns facing the effective utilization of solar energy for electrical power generation. Such effects can lessen the overall output of the Solar panel for a given level of solar insulation. Cooling of the solar panels is thus necessary. In the literature, this issue has been addressed by different researchers using passive and active means. Some of the methods suggested use water cooling, liquid cooling, air cooling, use of cooling fins, air ducts, hybrid PV/T systems etc. However, the authors of this paper feel that a simple cooling arrangement consisting of a small D.C. operated fan and a suitable heat sink can help to reduce the loss in the PV efficiency. This paper attempts to investigate experimentally the changes in the system characteristics and performance with and without such a cooling system. The results of the study indicate that some degree of improvements can be expected in system outputs and efficiency when a cooling fan is introduced.

Keywords – *Solar PV modules, Cooling system, Solar performance Characteristics, Experimental study, Fan Cooling.*

Quantitative Analysis of Atmospheric Turbulence Effect on Laser Beam Wander

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Abstract - The performance of free space optical (FSO) communication gets affected by several phenomena such as attenuation, absorption, scattering, atmospheric turbulence. The impairment losses due to atmospheric turbulence severely degrade the system performance. In this paper, the stochastic nature of atmospheric turbulence is discussed. The deviation in the variance of laser beam due to turbulence and its effect on the performance of the link has been experimentally determined.

Keywords - *Atmospheric turbulence, free space optical communication, beam wander, intensity map, variance.*

Participatory Tourism: An Inclusive Developmental Approach Encompassing All Stakeholders, in Leh District, India

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Abstract - Leh District which spans an area of 45110 km2 is located in state of Jammu and Kashmir between North latitude 32 to 36 and East longitude 77o38'00" to 77o32'00" which is divided into 9 Community Development Blocks and the relief ranges from 3250m (amsl) lowest to highest 4500m (amsl) with a population of 1,47,104 (Census.,2011). Ladakh, a well renowned cold desert was partially opened to tourism in year 1974 and tourism have been expanding very rapidly ever since. With current contribution of tourism making a greater impact on the GDP of the region which stands almost at 50 % of the total GDP, inspite of a miniscule participation of the people directly in this sphere which is around 4 % of the total population. The rate of tourist arrivals is almost drastic from 527 in year 1974 to 1,79,491 in year 2011 which is expected to rise more in the coming future. The major benefits of this sector is concentrated in the well off area, in and around Leh Town while the bulk of poorer section of the society located in far flung areas is bereft of its benefit. Still many innovative and inclusive practices are being implemented with the synergetic approach of various stakeholders like public, private and other civil society institutions and reaching the poorest section of this society. Homestays, eco-tourism practices, religious, cultural and research based tourism are some of the practices making this sector truely inclusive for a wider population in general.

Keywords -*Tourism, cold desert, Leh Town, homestays, eco-tourism*

A Comparison of Various Types of Photonic Crystal Tapers

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Abstract - The various designs of non-uniform shaped photonic crystal tapers are discussed in this paper. These structures are used for coupling modes of broader waveguides with narrow photonic crystal waveguides. In order to achieve adiabatic mode conversion the waveguides are integrated with taper structures. The result includes the power losses in the form of ripples at the output of each taper. The exponential taper of 23 μm length yields the best output amongst the various taper designs. The most appropriate taper model is thus acquired.

Keywords - *Photonic crystals (PhCs), photonic band gaps (PBG), Photonic integrated circuit(PIC).*

A Review on Employee Job Satisfaction in Indian Pharmaceutical Sector

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Abstract - The Indian Pharmaceutical industry plays an imperative role in strengthening the economic progress. The purpose of this study is to evaluate the level job satisfaction of employees in various pharmaceutical companies. The present study focuses on the relative significance of job satisfaction factors and their effect on the overall job satisfaction of employees. It also explores the impacts of Indian pharmaceutical nature, work practice; demographic differences on the approaches toward job Satisfaction. The outcomes of study show that compensation, work efficiency, and employee relations are the most significant factors contributing to job satisfaction. The summative job satisfaction of the employees in pharmaceutical industry is at the constructive stage. The present study highlights some of the problems and presents a status of job satisfaction level among employees of pharmaceutical companies. Indian Pharmaceuticals industry is currently undergoing continued expansion, hence the research is mainly commenced to investigate on the importance of aspects such as pay and promotion, working environment and conditions, pay and promotion, job security, employee relationship and fairness in the job satisfaction. The study presents an inclusive conclusion of job satisfaction manifestations of pharmaceutical sector along with the factors causing the job dissatisfaction & suggestions for improvement of job satisfaction.

Keywords - *Job satisfaction, working Environment, Pharmaceutical industry.*

A Study of Architectural Education in India: A Critical Review

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Abstract - Growth of architectural institutes was the requirement in late 90's of 20th century. There was mushrooming of institutes as privatization was allowed. The growth has impacted the quality adversely. Quality in architectural education is being studies and discussed nationally and internationally. Many parameters become basis of quality in the field. Basically, if we broadly look into the education system schools, students, managements and regulatory bodies are the prime components, responsible for quality in architectural education. There is dire need to study the whole architectural education system. This paper peep into the issues of quality degradation of architectural education.

Keywords- Quality, Architectural Education, Schools, Impact

Influence of Applied Load and Sliding Speed on Wear Behavior of SiC Particles Reinforced Al6061 Alloy Composites

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Abstract - In the present work, an attempt has been made to develop and study the, wear properties of Al-6061-SiC reinforced Aluminium metal matrix composites. The composite was prepared by using Liquid Metallurgy Route (Stir Casting Technique). Al6061 alloy was taken as the base matrix to which SiC particulates were used as reinforcements. 6, 9 and 12 wt% of SiC was added to the base matrix. For each composite, reinforcement particles were pre-heated to a temperature of 600 degree Celsius and then dispersed in steps of two into the vortex of molten Al-6061 alloy to improve wettability and distribution. The micostructural study was done by using Optical Microscopy, which revealed the uniform distribution of particles in matrix alloy. A pin-on-disc wear testing machine was used to evaluate the volumetric wear loss, in which a hardened EN32 steel disc was used as the counter face. The results indicated that the volumetric wear loss of the composites was lesser than that of the Al6061 matrix alloy. However, the material loss in terms of wear volume increased with the increase in load and sliding speed, both in case of composites and the alloy.

Keywords - *Al6061Alloy; SiC,; Wear; Metal Matrix Composites*

Identifying Statistical Analysis For Building Performance Simulation

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Abstract - Since designing a net zero-energy buildings (NZEBs) has many complex parameters and is also largely dominated by mandatory codes and standards like ASHRAE (2008, IEA), the analytical energy modelling of NZEBs becomes a challenging problem. It is also important to involve the active and passive strategies and the primary assessment of life cycle of a building at the early stage of design itself. This stage involves use of modelling, simulation and analytical software. It involves not only high costs but also the degree of uncertainty of decision making is also high. Most of the software give results relating to Life cycle assessment and whole building performance of a building.

Keywords - *Building technology, Zero energy buildings, zero carbon buildings, Energy efficient buildings*

Sparse Channel Estimation Techniques for OFDM Systems Based on Subspace Methods

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Abstract **-** Sparse channels are typically encountered in many communication systems like underwater acoustic channels, communications in a hilly terrain etc. Conventional channel estimation techniques like the Least Squares approach and interpolation based methods do not work well in this case, because these techniques do not exploit the sparse structure of the channel. In this paper, we introduce the subspace based methods of Multiple Signal Classification (MUSIC) and Estimation of Signal Parameters via Rotational Invariance Techniques (ESPRIT) algorithm when the channel is constant for a few OFDM frames within the coherence time of the channel. We propose a new method for ESPRIT based channel estimation as calculation of the ESPRIT MMSE estimator proposed in the literature is prohibitively complex and involves two matrix inversions per iteration. Simulation results show that the proposed ESPRIT estimator slightly outperforms the ESPRIT MMSE estimator in terms of bit error rate over a wide range of SNR's and that too with a reduced computational complexity. Finally the performance of these subspace based estimators have been comprehensively quantified for many different test cases.

Keywords **-** *Sparse channels, Subspace, MSE, BER, MUSIC, ESPRIT, MMSE, Cramer-Rao Lower bound.*

Experimental Invesitgations in the Water Scrubber for Biogas Purification

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Abstract **-** Biogas is a renewable energy source and is generated from the organic wastes. Biogas purification by using the water scrubber is an effective technique for the biogas purification and thus increases the heat value. A water scrubber was indigenously developed and experiments were performed to test its effectiveness. It was found to be significantly effective in increasing the heat value of the biogas.

Keywords **-** *biogass; water scrubber; effective heat value*

Comparative Assessment of Knowledge, Attitude, Practice regarding sustainable development amongst Under Graduate and Post Graduate students of Dentistry in Pune city

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[1]Professor and Head, [2]Post Graduate Student, [3]Professor, [4]Senior Lecturer
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Abstract **-** Introduction: The UN has recommended 17 sustainable development goals (SDGs) which is to be attained by the countries around the world. They highlight the importance of good health and well being. The SDGs have been made easier to understand and practice by the common man in the form of "Lazy person's guide". A questionnaire was formulated by taking input from the guide to know about the practice, attitude and knowledge towards sustainable future. Objective: A comparative KAP survey was planned amongst the Under Graduate (UG) and Post Graduate (PG) students of Dental Colleges in Pune regarding sustainable development. Materials and Method: Two private dental colleges in Pune having 336 UG and 162 PG students were approached for the survey. The formulated questionnaire which covered 8 domains was validated and had good reliability. Data collection was done through the self administered questionnaire after briefing the students about the nature of the study. The responses to knowledge, attitude, practice was categorized dichotomously during analysis. Results: Knowledge regarding sustainable development seemed to be poor having less than 50% responses for most of the items. The UG and PG students had favorable attitude and their practice seemed to be good (>50%).Discussion: Majority of the female students in the age group of 20-27 years who responded need to have their knowledge boosted. Government of India(GOI) initiatives like protecting the girl child and educating, immunization program, cleanliness drive, encouraging use of solar energy and public transport, low cost lighting, encouraging corporate social responsibility will help spread awareness. This will definitely lead to a greener India, better place to live and a brighter future for all. Conclusion: Post graduate dental students showed better knowledge, attitude and practice than under graduate students though not significantly different. Within the limitations of the study, as the saying goes "Every cloud has a silver lining" ,though the knowledge about sustainable development is poor amongst the dental students, the attitude and practices are encouraging.

Keywords **-** *Sustainable Development,Dentistry,Dental Students*

Cloud Computing: A Future e-Learning Environment

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Abstract **-**Cloud Computing is a growing area for research and development fields. Whenever large data volume is required to store online then Clouds play important role to manage such all the things. In this paper, we have focused on need and importance of cloud computing for e Learning. There are various LMS (Learning Management System) for online learning and those are available for easy to use. Educators, students and learners who are really wanted to make their life easy and follow the information where they are available at any time can use these LMSs.

Keywords **-** *Cloud Computing; LMS; e-Learning; Services;*

Artificial Intelligence for Condition Monitoring and Fault Diagnosis of Induction Motors

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Abstract - Three phase squirrel cage IMs are used most commonly for industrial process. During its operation internal faults may occur due to mechanical, electrical, magnetic, thermal and environmental strains. If these internal faults are left undetected in its early stage, it leads to unscheduled maintenance, process shutdown/repair of machines and massive financial loss in industries. This requires fault detection and non-invasive condition monitoring system so as to ensure the reliable operation of the motors. Condition monitoring involves an acquisition of signals, processing, fault signature extraction and decision making on the occurrence and type of faults. This paper highlights the prevailing trends using artificial intelligence (AI) techniques for fault diagnosis and future research options.

Keywords - *Condition monitoring; induction motor (IM); on-line monitoring; fault diagnosis; Artificial intelligence;*

AES AND DES Technique Used in Cloud Computing Environment

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Abstract - The objective of the study is to inspect the safety restriction and highlight the present dangers in cloud computing real safety procedures for cloud computing systems. It will assist the researchers to categorize security provisions at several stages to recognize the threats in the numerous cloud computing models modeled by mutually interior and exterior customers. Thus, it will beneficial to explain cloud security protocols that guarantee the safety of the cloud environment. In this paper we work AES and DES Based approach using Cloud Computing. Evaluate AES and DES encryption and Decryption timing

Keywords - *Cloud Computing, AES,DES,SHA,ECC*

Review of WSN Integrated with Wireless Technology in Health Monitoring Applications

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CGC Technical Campus, Jhanjeri

Abstract **-** Wireless Sensor networks integrated with wireless technology is rapidly growing and widely used in variety of applications such as Agriculture, Medical Healthcare, Millitary Tracking, Smart homes, Industrial Monitoring, Environmental Monitoring and many more. This paper covers specifically the health care monitoring application using Wireless Sensor Networks. Wearable or implanted sensors on our body can sense the various physical parameters of our body such as heart rate, blood pressure, ECG, EEG, oxygen level and many more in regular intervals which can be transmitted through wireless technologies to the end server and then to doctor's PDA with the help of SMS or email. In this review paper we specifically consider the health monitoring application with WSN architecture, wireless technologies used & issues of WSN integrated with Wireless Technology.

Keywords- *Wireless Sensor networks, Wireless Technologies, routing protocol, Zigbee, WiMAX, WiFi, Bluetooth*

Analysis and Modeling of Fixed-Pitch angle Wind Turbine with Permanent Magnet Synchronous Generator

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Abstract **-** This work aim to create a platform for detail modeling and analysis of the fixed-pitch angle wind turbine with permanent magnet synchronous generator (PMSG). It is required to evaluate the system analysis in an efficient manner while considering the fixed pitch angle and constant wind speed. This system consists of a wind speed model, wind turbine model, driven train model and PMSG model. Proposed wind speed model is put forward in such a manner that it could reflect the natural wind speed characteristics. Wind speed for wind turbine is used as an input to an aerodynamic model. It captures the optimal power of the wind and generates mechanical torque for the PMSG. Mathematical analysis is used to demonstrate the efficacy of the model in dq-synchronous rotating reference frame of the generator. The analysis of proposed fixed-pitch angle wind turbine PMSG model is evaluated with MATLAB/Simulink software.

Keywords **-** *wind speed,wind turbine,PMSG, drive train.*

A Wideband CPW - Fed Circularly Polarized Monopole Antenna for Multi-Band Applications

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Abstract **-** A CPW-fed circularly-polarized monopole antenna with bandwidth enhancement is presented in this paper. The circularly polarized characteristic is achieved by a C-shaped monopole. To realize the circular polarization a new structure including two semicircles and a spring are etched on CPW-fed ground and at the opposite side of the substrate two metallic closed ring resonators (CRRs) for wide band application.. The proposed antenna has a very small size of $20 \times 20 \times 0.8\ mm^3$. That cover simulated impedance bandwidth (IBW) 16.5598 GHz- 32.9153 GHz (16.3555 GHz i.e. 77.22 %, at centre frequency 21.18 GHz) with axial ratio bandwidth (ARBW) 1.0755 GHz (23.9453 GHz – 25.0208 GHz i.e. 4.41 %, at centre frequency 24.388 GHz) for microwave 'Ku' , 'K'and 'K_a' band application. The peak gain of the antenna is 4.3648 dBi.

Keywords **-** *Circular polarization, impedance bandwidth, axial ratio, Ku, K and K_a band.*

An Ideal Automatic Solar Beam Concentrator with Sun Tracking System

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Abstract **-**A microcontroller based Rotating Solar Beam Concentrator is proposed. This system is divided into 3 units. The first unit consists of solar beam concentrator whose function is to concentrate the beam coming from the sun on the solar panel. The second unit consists of microcontroller based sun tracking system which helps to get the positioning of the sun in order to get maximum efficiency and maximum output as it rotates the dish towards the axis of the sun. The last unit consists of an integrated program that helps the user to interact with the information provided by the system.

Keywords **-** *Sun Tracking System; Concentrated Solar Power; Rotating Dish; Solar panel; CPC Collector*

Assessment of Biomimetically Sequestered Calcium Carbonate for Tyrosinase Production from Pleurotus Florida with reference to Phenol Degradation: Innovative Approach for Complete Bioremediation of Atmospheric CO_2

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Abstract - Manuscript describes process to sequester CO_2 biomimetically and overcome problem to utilize its byproduct in environmentally benign way to produce mushroom and degrade phenol by the tyrosinase extracted from its different growth stages. Wastewater containing phenolic compounds presents a serious discharge problem due to their poor biodegradability, high toxicity and long term ecological damage. This study deals with both the aforementioned problems. CO_2 sequestration for its conversion into carbonate was pursued using electrometric unit. Paenibacillus dendritiformis (2.87 U/mg protein) showed a significantly high CO_2 sequestration capacity of 27.3 mg of $CaCO_3$/mg of Carbonic Anhydrase in 12 second. Biomimetic calcium carbonate was optimized for Pleurotus florida cultivation and all its stages were assayed for tyrosinase activity. Mushroom size (weight) was larger with substrate supplemented with 2% $CaCO_3$ with the yield of 74.2 g/150gm at mature stage. We finally determined that tyrosinase (8.9 U/mg) from premature stage degraded 90% phenol. GC-MS was castoff to identify the product formed after degradation of phenol by tyrosinase as Catechol. Mushroom grown using precipitated $CaCO_3$ shows the complete utilization of CO_2 with maximum phenol degradation from tyrosinase extracted from premature stage. The study holds tremendous economic implication of CO_2 sequestered product utilization, with strong potential utility of tyrosinase for subsequent decontamination of phenol.

Keywords - *sequestration, Pleurotus, tyrosinase, phenol degradation, catechol*

A Study of IFRS in INDIA

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Abstract - In 1991, the Narasimha Rao government was announced liberalization, privatization and globalization (LPG) in India. The Introduction of International Financial Reporting Standards (IFRS) is closely related to the entire issue of globalization because it has changed close economy into open economy. The implementation process of International Financial Reporting Standards (IFRS) gained wide interest in the field of financial accounting research community in India. The International Financial Reporting Standards (IFRS) represents a essential change in accounting for transactions and reporting of financial statements and it is one of the recent Developments in the field of accounting, with the aim of making accounts more consistent, In India the date of implementation has been postponed from April 2011 to April 2015. Hear after India has no further escape route and the mind set has to change for IFRS. But the process of convergence with IFRS has been making a slow but steady progress till now.

Keywords - *IFRS, Convergence, IASB, Regulatory Board and Business environment*

Design and Analysis of Peep Removing Machine

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Abstract - CNC machines are found almost in all industries, from a small scale industry to big companies these days. They remove the metal from the raw material to give it desired shape as needed . There are many operation performed on CNC lathe machine,This project is based on the precision turn component company. During the parting operation of fastener on CNC lathe machine at precision turn component, there is a peep remained at the center of the fastener. Hence they have to remove this peep separately on the grinding wheel manually which is very time consuming.In this project we design and analysis the tip removing machine. In which number of work pieces are mounted against the grinding wheel to remove the tip. First we accumulate the essential data related to the fastener and the peep such as diameter of the job, material, peep dia. etc. Also, we gathered the grinding machine specification and mechanism. After that we develop a CAD model of the machine, and then we perform FEM and FEA.

Keywords - *CNC machine, peep.*

Impact of HR Practices on Organizational Performance through Employee Engagement: A Review and Research Agenda

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Abstract - Due to the Globalization organizations are facing emerging challenges now-a-days in form of acquisition, developing and retaining the key organizational talent in the highly dynamic business environment. The dynamic business scenario requires companies as well as their HR teams to think out-of-the box, and come up with revolutionary HR practices and approaches to keep the employees motivated and enhance the overall organizational performance in order to survive in this volatile environment. The success of an organization depends upon several factors but the most crucial factor that affects the organization performance is its employees. In the age of competitiveness, organization cannot be able to bear the loss of prospective human resource. These firms do not want their proficient employees to leave (Cascio 2000; Glebbeek&Bax, 2004). Human resource (HR) practices and employee engagement are the key for enhancing the firms' performance and received substantial attention in recent research on management sciences. On the basis of existing literature, this conceptual paper attempts to focus on the importance of HR practices and employee engagement to sustainable organizational success on a long term basis. The paper proposes a relationship between HR practices and employees' level of engagement with organizational performance. This study reveals a positive relationship between these variables. The present study is based on the vast research literature in the domain of human resource management in Indian context and beyond, and hence it exhort researchers to carry out relevant studies in this field.

Keywords - *HR Practices, Organizational Performance, Employee Engagement, Employee Retention*

A Review on Human Identity and Gender Recognition from Gait Sequences

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Abstract - The Identification of People through gait sequences have resulted in an immense compact of curiosity in computer vision by reason of its benefit of not noticeable recognition from far distance. Biometrics recognition is a process that uniquely identifies people on the bases of natural characteristics either physical or behavioural. Identification of humans by Gait biometric is a way to recognize people by their walking manner or style of person's moving feet. Gait recognition is based on the behavioural characteristics of human that can uniquely differentiate one human from another. It receives great interest in Biometric field. In Human Gait biometric recognition there are a variety of gait recognition techniques each having its on benefits and demerits. In this paper, the different gait recognition methods are discussed.

Keywords - *Gait, Biometrics, Human identity, Gender recognition,SRML, SVM*

Review on Various Techniques of Database Security

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Abstract - Being safe in today's world is top priority as well as a challenge that humans are in front of all over the world in lives every aspect. Alike security in electronic planet has an immense importance. In this, I survey the protection of database which holds as the crucial/major problem in world of digitalism. Security, integrity and confidentiality of records are demanded on internet for any type of work we do there. Each time the term security gets related to data, the main focus is secure transport of information from one to other end over unreliable network communication. Likewise the database which acts as backbone of any organization needs security as well.

Keywords - *Database Security, Encryption, Access Control, Security techniques, cryptography, hashing, steganography.*

Prioritization of Sectors for Use of Social Media in Delivery of Government Services to Citizens in the State of Punjab

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Abstract - As the concept of electronic service delivery gains maturity, the demand for new and multiple channels for delivery of Government services is increasing. With the experience of successful implementation of a number of e-Governance initiatives and programs in India, the use of social media platform for delivering Government services is emerging as an effective channel. The exponential growth in the number of internet users and the rapid social media penetration are offering the potential for use in delivering Government services. Many Central and State Government departments and organizations in India have already started using social media applications for the delivery of Government-to-citizen (G2C) services. The 'Digital India' programme is likely to propel this further. As the use of social media in e-Governance gains acceptance and popularity, it becomes important to identify and explore the priority sectors (e.g. agriculture, health etc.) in states for using social media platforms for improved effectiveness of delivery of Government services. This paper is an outcome of an exploratory study carried out with the aim to identify and prioritize the sectors for use of social media for Government services in the Indian state of Punjab. Delphi method has been used for the purpose of the study.

Keywords - *e-Governance, Social media, sectors, Government services*

A Morphological Filtering Based Technique for Simultaneous Enhancement and Denoising of Grey Scale Images

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Abstract - Image denoising plays a vital role in pre-acquisition and post acquisition imaging applications. In context to ever growing demand of image denoising we designed an algorithm based on the morphological operations i.e. opening and closing operations. The error images depicting the gradient features and details are calculated to enhance the amount of information in the denoised images. The final results are obtained using median filtering on the eight bit planes. The reconstructed images with denoised bit planes show high quality of visual as well as quantitative results.

Keywords - *opening operation; closing operation; morphology;gaussian filter; median filter*

Optimal Control of Restructured Electric Power Systems Interconnected via AC-DC Links

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Abstract -A comparative analysis of automatic generation control of two-area restructured electric power systems interconnected by AC and AC-DC links has been considered in this study. Each area has thermal-hydro (TH) power sources. The state space model of the power systems have been developed and optimal proportional integral structured controller is designed to simulate all market contracts probable in a deregulated power environment. The eigenvalue analysis is carried out to assess the comparative stability analysis of the power systems with or without AC/DC links. Further, the dynamic responses are obtained in the presence of AC link and AC-DC links. It can be observed that the inclusion of AC-DC links improves the dynamic performance of all the systems remarkably, moreover, optimal controller is found competent to demonstrate the matching of generation with power demand under different market transactions.

Keywords - *automatic generation control; deregulation; optimal control, optimal control application; hydro power system; AC/DC parallel links; vertically integrated utility*.

Anatomical and Functional Imaging Modalities: A Brief Review

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Abstract - The precise and accurate diagnose of an ailment is foundation of an effective medical aid. For this the medical fraternity relies heavily upon the various radiographic scans which help in the diagnosis, staging and treatment of a particular disease. These imaging modalities depict the anatomical, functional as well as molecular level information about body organs. In this paper we have presented the basic principle, advancement and applications of some of the major imaging modalities. These multi-sensor images depicting complimentary information are fused together to generate a composite image with higher amount of information.

Keywords - *radiogarphy, radiation, angiogarphy, magnetic resonance, modalities, imaging*

Econometric Study on Dynamics Relationships of International Stock Indices: Evidences from Regional Integrations

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Abstract **-** At this instant, the whole world is moving towards a global village or single commune. In this context, this paper investigates dynamic inter-linkages of indices of seven Regional Integrations namely, ASEAN, BRICS, EFTA, EU, LAFTA, NAFTA and SAARC comprising of 53 countries including India and also its interlinkages with two Regional Integrations BRICS and SAARC, because of its membership in these Regional Integrations. Analysis of time series data relating to Index Prices has been taken for the period ranging from 1st April, 2011 to 31st March, 2016. Price discovery is confirmed for all Regional Integrations using Johnson's Co-integration test confirming long term relationship in all twenty-seven combinations. To understand the short term dynamics amongst these combinations of Regional Integrations VECM is employed. This test signifies the short-term adjustments made by various combinations of Regional Integrations to reach towards equilibrium and to understand the market dominance. The results of VECM are encouraging exhibiting establishment of strong market information mechanism. To add robustness to this result Variance Decomposition Analysis is employed. To understand the direction of causality Granger Causality/Block Exogeneity Test is used, the results of which are mixed showing bi-directional Granger lead relationships in 11 combinations of Regional Integration, showing greater regional influence amongst each other, and uni-directional Granger lead relationships in 10 combinations of Regional Integrations and in 6 combination of countries with India, depicting the regional influence reflecting nascent structure of markets. The results of interlinkages of India with BRICS and SAARC exhibit dominant role of India vis-à-vis Sri Lanka, China and Russia while with Pakistan, Brazil, and South Africa, India is in role reversal situation. The findings are relevant for policy makers, hedgers, traders and investors and it may provide diversification benefits for potential investors.

Keywords **-** *Interlinkages, Regional Integration, Price discovery, Granger Causality, VECM*

Comparative Analysis of Ship Board Emission Based on Automatic Identification System (AIS) Data

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Abstract- Automatic Identification System (AIS) is a transponder system designed for the exchange of information related to ships. This automatic tracking system is used for collision avoidance and vessel traffic services.AIS provides static, dynamic and voyage information of ships from which the emissions could be estimated over a period. In this paper, emissions are calculated by taking AIS data of Oceanographic Research Vessel (ORV) Sagar Nidhi when it started its voyage from New Mangalore Port to Central Indian Ocean Basin (CIOB) and returned to Chennai Port. In this voyage, she has covered approximately 3000 nm (5556 Km) and encountered about three hundred ships. The author has calculated the emissions by considering the Gross Tonnage (GT), speed and other essential parameters of ship into account. A model is developed based on GT which is used for calculating fuel consumption and emissions. The calculated emissions are validated with emissions of ORV Sagar Nidhi which are measured using Testo Flue gas analyser. Based on ship type and fuel consumed, this simplified analysis can be used for emission calculation.

Keywords-*Emissions; Ship Traffic; Automatic Identification System; Fuel Consumption*

Lead Iodide as Room Temperature X-Ray Detector and its Limitations

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Abstract - Lead Iodide is a very good room temperature detector. The properties of Lead Iodide are such that they match with the properties needed for a good room temperature X-ray detector. It is also having some limitations like degrading with time and having soft crystals. The concept of polymer composites of Lead Iodide will solve this problem in great extent. So with the polymer composites of Lead Iodide, we get a material act as excellent X-ray detector.

Keywords - *Lead Iodide; Polymer Composites; X-ray Detector, X-ray Switching, Zone Refining.*

Binary Nanofluid Convection Subjected to Rotation

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Abstract - The paper investigates instability of a binary nanofluid layer acted on by uniform rotation. The effects of Dufour and Soret parameters due to the presence of solute and the similar effects of Brownian motion and thermophoresis due to the presence of nanoparticles are incorporated in the employed model. The onset of instability is governed by partial differential equations based on conservation laws which are further solved by normal mode analysis. For analytical study, approximations are made to get simplified expression for thermal Rayleigh number and numerical study is made using water based binary nanofluids with metallic and non-metallic nanoparticles. Oscillatory mode of convection in the fluid layer may come into existence for bottom heavy nanofluids and the frequency of oscillation falls with the rise in rotation parameter while rises with the rise in nanoparticle volume fraction at the bottom of the layer and has no effect of solute. The stability of the fluid increases due to the inclusion of rotation. Effects of solute concentration difference, nanoparticle volume fraction difference and temperature difference are studied on the onset of convection using Mathematica software and results are shown graphically.

Keywords - *Binary nanofluid convection; Rotation; Brownian motion; Thermophoresis; Metallic and non-metallic nanoparticles*

Integrating Sustainability with Marketing: An Emerging Paradigm of Sustainable Development

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Abstract - This paper aims to analyze the inception and development of the terms sustainability with marketing and the nascent relationship between the two. Therefore this article first explores origin and definitions along with the background of sustainability, then discusses about the relationship between sustainability and marketing, presenting this link as a new paradigm of sustainable development creating competitive advantages for the business. The marketing approach with sustainability is discussed through literature available on sustainability marketing. This paper attempts to create new pathways for researchers, marketers, scientists, educators, and other professionals that are dealing with understanding and implementation practices of sustainability marketing process.

Keywords - Sustainability, eco system assessment, marketing concept, sustainability marketing, transformational change, environment friendly

A Comparative Study on Load Balancing and Energy Efficiency Techniques in Cloud Paradigm

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Abstract - Cloud computing is a materialise technology now-a-days that provides computing, storage resources and communication resources and it is that kind of technology which attracts the ICT (Information and communication Technology) services that provides huge distribution of online services. It provides a great infrastructure which involves large centres including the large amount of servers dealing with the requests given by the clients. There is rapid growth of demand for the power which computes the creation of large-scale data centres. The data centres consume a huge amount of electricity which results in carbon dioxide emission and high operational costs. This paper discusses the load balancing approach in cloud computing environment. Numerous loads are concerned with cloud such as memory load, network load and processor load. Load balancing is the task of distributing the loads across the nosed in the network which provides efficient resource utilization in the case of overloaded node. How these all loads are under loaded to make the network work easily in the cloud environment is the main issue which is resolved with different prescribed algorithms such as round robin, ant colony and opportunistic load balancing. The comparison of the algorithms and the load balancing techniques are done to show which is better in distinct network cases.

Keywords - *Cloud Computing, Energy Efficiency, Load Manager, Power Consumption, Resource Scheduling, Security,*

Complementing Data Envelopment Analysis with Regression: A New Approach

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Abstract - The present study endeavours to propose a new two-step approach to examine the impact of each input variables on each output variables that cause efficiency or inefficiency amongst DMUs. As a first step the present research investigates the year-wise efficiency level of public sector banks (DMUs) operating in India. The data were collected from the Reserve Bank of India's publication Statistical Tables Relating to Banks in India for 16 years starting from the year 1998 to the year 2013. The CCR model of Data Envelopment Analysis was used to determine efficiency levels, benchmarks and sources of inefficiency for each inefficient bank. Using least square regression analysis the study attempts to introduce second step for further investigating the effect of each input variable on each output variable. It was found that public sector banks are inefficient for almost half of the observations which strongly demands for the efforts for improvement. Main sources of inefficiency are found to be excess usage of borrowings and deposits. The study concludes that though Data Envelopment Analysis measures the efficiency level, benchmarks and sources of inefficiency amongst DMUs but it does not measure the effect of each input variable in producing the present level of outputs. This two-step approach helps in determining the effect of each input variable on each output variable which further helps in critically examining sources of inefficiency.

Keywords-*Efficiency, Data Envelopment Analysis (DEA), Public Sector Banks (PSBs), Decision Making Units (DMUs), Regression.*

Comparative Analysis of Virtualization Techniques for Mobile Cloud Computing

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Abstract - In the era of the internet, Mobile Cloud Computing (MCC) has become a significant research topic of the scientific and industrial communities. MCC integrates the cloud computing into the mobile environment and overcomes obstacles related to the performance such as battery life, storage, and bandwidth, environment like heterogeneity, scalability, and availability, and security. Smart phones connect to internet to use all these web services. Connecting through internet smart phones facing the similar security problems as we face in personal computers. As if an unsuspecting user downloads a corrupted application from internet, the entire phone could be damaged. Due to these security reasons normally it seems that many users carry different phones to fulfill their personal and work needs. So to overcome these issues virtualization is a best choice .Apart from its attributes virtualization is one major concept used in mobile cloud computing. Virtualization is a framework or methodology of dividingresources of a computer into multiple execution environments. This paper proposes concept of virtualization and its techniques for MCC.

Keywords - *mobile cloud computing, virtualization, virtualization technologies, virtualization software*

Design of Experimentation process for grains and herbs drying process using Conical Solar Dryer

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Abstract - Drying is one of the methods used to preserve food products for longer periods. The objective of this work is to develop a conical solar dryer in which the grains are dried by forced convection, the air passing through the aluminum plate present in the collecting tank heated due to high temperature of plate due to trapped heat by glass. The other problem arise is orientation of sun which is eliminated by conical solar dryer containing four drying chamber so that orientation of sun does not become the issue [1][2]. This paper presents an experimental investigations and Sequential classical experimentation technique has been used to perform experiments for various sizes of green herbs at different weather conditions to establish model for moisture removal rate for drying operation. This paper also reports the experimental procedure to establish mechanical properties using specially designed instrumentation during experimentation.

Keywords - *Conical Solar dryer, forced convection, Green Herbs, Instrumentation*

Retail Marketing: A Critical Analysis

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Abstract - This comprehensive research paper focuses upon the basics and certain crucial building blocks of retail marketing as a discipline. The paper intends to ascertain and analyze subjects such as understanding how new retail formats have taken a surge in our country, deeply understanding the Indian retailing industry, recognizing the various confronts that our organized retail sector is facing, identifying and discussing the various successful strategies of organized retailers so far, understanding the various consumer inclinations in ASEAN economies and how their retail markets are growing, retail promotion management, confronts and opportunities that lie for the retailing sector in India. In addition to this, the paper also strives to ascertain and analyze several others elements of retail marketing.

Keywords - *Retail, Retail Marketing, Retail Format, Retailing Industry, Organized Retailing, Retail Marketing Strategy, Retail Markets, Consumer Trends, Retail Promotion Management*

Design and Analysis of Sheet Bending Machine

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Abstract - Bending of plates and sheets are extensively use to produces the parts such as flanges, angles etc. In bending operation a flat sheet metal is formed into a curved by applying the bending stress. By the help of die and punch sheet get bend plastically without change in thickness.This project is rooted on the urge of Daulat Industries, Nagpur. The aim of the project is to design a sheet bending machine which is capable of bending 5mm thick stainless steel sheets of 8ft wide and 4 ft length in size. In this research CAD model of sheet bending machine is generated, detailing of the generated CAD model is performed. This project involves the design and optimization of a sheet bending machine which is capable of bending 5mm thick stainless steel sheets was performed with the help of CAD and FEA software's.The CAD model was generated on the basis of data collected from the company, calculations specification of the existing bending machines, References etc. After the CAD model generation we perform FEM and FEA.From the results of design, we concluded that stresses obtained in static analysis within the limits; hence the design of bending machine is safe.

Keywords - *Design and optimization of Sheet Bending machine.*

Review of Wireless Multimedia Sensor Networks: Its Technology, Architecture, Routing Protocols and Applications

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Abstract- From last few years there has been wide research in wireless sensor networks, its challenges, practical issues etc. In WSN, nodes are usually deployed to measure pressure, temperature, location of objects, humidity. The availability of microphones and CMOS cameras have led to the development of new networks called Wireless Multimedia Sensor Networks. In this paper architecture, network Structure, open research issues and applications are discussed further.

Keywords-*wireless sensor networks; smart cameras, wireless multimedia sensor nodes, multimedia communications*

Performance Improvement of Honing Machine Using Six Sigma

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Abstract **–**There has been number of papers published related to Six Sigma applications in manufacturing and service organizations. However, very few studies are done on honing machine in all the areas including manufacturing, construction, education, financial service, BPOs and healthcare etc. Considering the contribution of Six Sigma in recent time, a more comprehensive review is presented in this paper. A systematic approach needs to be adopted, which optimizes systems as a whole, focusing the right strategies in the correct places. In this paper it is show how a honing process can be improved and optimized using six sigma. Even applications of Six Sigma tools are observed in this paper. In the research paper DMAIC Cycle is been used for process characterization & process optimization. This paper contributes to knowledge by providing an insight into the evolution of the Six Sigma. A very few paper are available related to analysis ofhoning machine using six sigma. Literature exploring the environmental/green impact of quality management methods commonly used in industry is limited. There is also a lack of studies aiming to investigate the green impact of Six Sigma in top operations and quality management journals.

Keywords -*Six sigma, DMAIC, honing machine, Productivity, Quality.*

Overview of the Ethical Issues in Educational Technology

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Abstract - The purpose of this research paper is to discuss about the ethical issues related to education with respect to students and teachers. New developments regarding the way of transferring of knowledge by the instructor to the student have been made with recent growth of internet which provides a lot of new opportunities for teaching learning process. This has a effect of constant change in teaching learning process. These effects of technology are beneficial but complex and hard to estimate accurately as these effects are likely to have different values at different times for different people.

Keywords - *Ethics, Educational technology, issues.*

Study of Classical Ragas Structural Influence on Brain Waves

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Abstract - Indian classical musical maestros recognized, ragas influences emotions of human being by changing the resonance of human body. Ragas like darbari and khamaj are found to defuse mental tension, particularly in the case of hysterics. Raga malhar pacifies anger, excessive mental, excitement & mental instability, Raga jaijaivanti have also been pound effective in curing mental disorders and calming the mind. Although it is require to verify this raga correlation systematically. By survey, it has been seen that no schemes have demonstrated yet. The proposed research presented in this paper is aimed to discover the science behind phonetics of raga and its effects on nerve system. This research is one step to explore scientifically the ancient way of alternative medicine i.e. raga therapy, which is a need of the day since current advances in technology and rising workload on human being is accompanied by stress relating to mental disorders. This research focuses on to study the influence of Indian classical ragas structure on human body while person is listening and experiencing an emotion in it by capturing EEG signals. The brainwave signals database will be collected and analyze. This research work addresses these objectives and aims to present a strong case which will help medical practitioners like psychiatrist, to treat patient by injecting music stimulus.

Keywords - *Emotion, raga and emotions, EEG, Brainwave Signals*

Mobile Ad-hoc Cloud Architecture and Security

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Abstract - Explosive growth in capabilities of mobile devices and concept of mobile cloud computing together raised a potential technology called mobile ad-hoc cloud. MAC aims to provide more efficient, economic and constant availability of services. In this paper we discussed the various technologies involved in formation of MAC. We analysed the various challenges and threats in the implementation of this technology. This paper discussed the similar works in this area. Finally we proposed a general management architecture in which we introduced and discussed various interfaces, their execution process and their objectives. We also developed a security framework to facilitate prevention measures and defence structure for secure and trusted network of MAC.

Keywords - Mobile ad-hoc cloud, management architecture, security, node management, task distribution

K-band Co-Zr doped Strontium Hexaferrites Microwave Absorbers

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Abstract - In the current investigation, microwave K-band (18-26.5 GHz) electromagnetic and absorption characterization of Co-Zr co-substituted strontium hexaferrite have been presented. Vector Network Analyzer was used to determine the effect of microwave frequency on complex permittivity and complex permeability of the ferrite samples. Real permittivity was found to decrease while real permeability increased slightly with the increase in frequency. Imaginary permittivity and permeability have shown almost frequency independent behavior up to 21 GHz. Resonance peaks in the spectra were observed on further increase in frequency. Reflection loss values have been simulated for 3.5 mm thick ferrite pellets. Composition with x = 0.4 has achieved maximum absorption bandwidth (4.59 GHz) while that with x = 0.8 has minimum reflection loss value (-38.41 dB). The variation of reflection loss curves with change in thickness of pellet is also demonstrated. Thus, the complete K-band microwave analysis indicates that these materials are useful candidate for electromagnetic interference suppression applications in radar systems and wireless communication.

Keywords - *Strontium Hexaferrites; Permittivity & Permeability; 18-26.5 GHz; Reflection Loss Curves; Sample Thickness.*

Intellectual Capital and Its Relationship with Organisational Capabilities: A Structural Equation Modeling Approach

Bharti, Babli Dhiman

Abstract - Intellectual capital had strategic importance in SME's. Intellectual capital to be the sum of all the knowledge firms which utilize for competitive advantage In this study we develop a scale to measure the relationship between intellectual capital and organisational capabilities in SME's. Self structured research instrument were used in the study. Purposive sampling techniques were used to target SME's of Punjab. Only manufacturing SME's were targeted in the study. We target 650 SME's out of which only 500 SME's give accurate response.. SME's entrepreneurs (owner) and executive managers were the respondents of the research. The scales used for the survey were validated by using Exploratory Factor Analysis and Confirmatory Factor Analysis.Structural equation modeling was used in the study to check the relationship between intellectual capital and organisational capabilities. The findings of the study showed that the Intellectual Capital has significant and direct positive relationship with Oranisational Capabilities' The study create awareness among researchers, academicians and SME's entrepreneurs about the applications of intellectual capital to improve the organisational capabilities.

Keywords - *Intellectual Capital, Organisational Capabilities, Structural equation modeling*

IOT Based Smart Home Automation System

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Abstract - Internet of Things (IoT) is an emerging technology that is making our world smarter. The idea of connected world cannot be imagined without IoT such as buildings, vehicles, and other items embedded with electronics, software, sensors, and network connectivity that enables these things or objects to collect and exchange data. This technology can be employed to make home smarter, safer and automated. Smart Home is commonly referred to a home where the devices are connected to cloud. It can be seen as a system which uses smart phones, PCs to control and monitor the appliances of home. It makes easier the human works such as developing the security of home against Theft, Gas Leak, Power failure, Fire etc. In any of these events met while you are out of your home than the device sends SMS to the emergency number provided to it and also display on your connected gadgets. Now a day, most of conventional home automation systems are designed for special purposes while proposed system is a general purpose smart home automation system, which can easily be implement in existing home. The suggested system has more features than conventional home automation systems such as an ultrasonic sensor is used for water level detection, soil moisture sensor is use for automatic plant irrigation system, Gas sensor using for detecting gas leakage etc. The proposed system presented in this paper is used for monitoring and controlling Smart Home environment.

Keywords - *Internet of things, Gadgets, Electronics and sensors*

Design and Development of Health Monitoring System using IOT

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Ministry of Electronics and Information Technology, Government of India

Abstract - The ability of our era is boundless, with amazing potential to improve the quality of our lives. Internet of Things (IOT) [global network], includes every aspect of our lives, whose foundation lies in the intelligence that embedded processing system provides. Huge volume of data is generated and that data is processed into useful actions. With the evolution of IOT, the network of physical objects-devices, buildings, vehicles and other items embedded with electronics, software, sensors and network connectivity that enable these objects to collect and exchange data. It can "command and correct" things to make our lives much easier and safer. The Internet of Things is the future of technology that can make our lives more efficient. Health is generally related to physical well-being. Mental health has been ignorant. In today's world people have started admitting of mental health being a part of one's overall health too. Brain too has a possibility of getting ill. Symptoms of most mental disorders are manifested as changes in an individual's behavior, analyzing such changes could lead to a better understanding. IOT devices can be used to enable remote health monitoring and emergency notification systems. With respect to psychiatry, people in office/home can be monitored for stress levels and level of depression, anxiety etc. can be observed on a prescribed scale. The observations generated, give the most probable psychiatric state. Thereafter proper medication can be given to the patient. This proposed system will help people to monitor one's mental health that is generally invisible.

Keywords - *Internet of Things, sensors, Health, medication*

Design and Development of Air-Luggage Tracking System Based on IOT

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Abstract - Airport being the most important means of international transport, it is observed that each year more than 31 Million passengers and 34 Million bags are influenced by luggage mishandling which resulted in loss of $3,300 Million to aviation industry. A passenger wastes around 1.7 days of his vacation or business trip waiting for the mishandled bag. In the recent years, RFID has proven to be a help for object tracing purpose and is a very effective, feasible and cost-effective technology for object identification. Internet of Things is presently a newest technology worldwide. It is the interconnection of uniquely identifiable embedded computing devices within the existing internet infrastructure. In this proposed system to design a prototype at two locations having both check-in and check-out processes. A more secured algorithm is used for generating tags that are attached to printed luggage label with the details of passenger and airline stored in it. RFID readers in the check-out areas facilitate step tracking of luggage which prevents luggage loss. The luggage's real time position is tracked and stored in a cloud using IoT and unique ID can be retrieved by the passengers wherever and whenever necessary. The same ID can be used while collecting bag at check-out counters. The system provided ensures less consumption of time, security for luggage and is economical hence provides customer satisfaction.

Keywords - *RFID, air transports, luggage tracking*

IOV Based Smart Vehicle Management Systems

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Abstract - Internet of Vehicles (IoV) technology refers to dynamic mobile communication systems that communicate between vehicles and public networks using V2V (vehicle-to-vehicle), V2R (vehicle-to-road), V2H (vehicle-to-human) and V2S (vehicle-to-sensor) interactions. It enables information sharing and the gathering of information on vehicles, roads and their surrounds. Moreover, it features the processing, computing, sharing and secure release of information onto information platforms. Based on this data, the system can effectively guide and supervise vehicles, and provide abundant multimedia and mobile Internet application services. Internet of Things (IOT) is a world-wide network connecting all the smart objects together. It is the way in which all things are enabled to talk with each other. Whenever those smart things being connected over internet are restricted to only vehicles, then it is called as Internet of Vehicles(IOV). With continuously increasing urban population and rapidly expanding cities, vehicle ownership has been increasing at an exponential rate. Hence Smart vehicle management system has become a great need in our day to day life. The new era of the Internet of Things is driving the evolution of conventional Vehicle Networks into the Internet of Vehicles (IoV). Being in generation of Internet connectivity, there is a need to stay in safe and hassle-free environment. According to recent predictions, 25 billion "things" will be connected to the Internet by 2020, of which vehicles will constitute a significant portion. Throughout the last century, the automobile industry has been consistently at the forefront of traditional manufacturing industries, Modern vehicles are equipped with a mass of electronic components, which has led to the expansion of the autotronics market. Further research and development are going on the Advanced Driver Assistance System (ADAS), the Internet of Vehicles (IOV), renewable energy cars and self-driving cars will bring the automobile industry into the next era of technology. The use of sensors and microcontrollers (MCUs) will make vehicles safer, more comfortable and more user-friendly.

Keywords - *IOV, Vehicle, Android app, IOT*

Design and Analysis of Priority Encoder with Low Power MTCMOS Technique

Sakshi Saini[1], Balwinder Singh[1], Hitesh Pahuja[1], Varun Chhabra[1]*
Centre for Development of Advanced Computing (C-DAC), Mohali,
Ministry of Electronics and Information Technology, Government of India

Abstract - In recent trends power optimization is becoming one of the most important factor in integrated circuits today. Low power MTCMOS technique has appeared as an encouraging technique to decrease power dissipation, leakage currents and leakage power. High performance priority encoder was designed using MTCMOS technique and compared with conventional CMOS technique. Comparative analysis showed that how these techniques were used to optimize the average power and shows significant improvement in terms of speed. After the comparative analysis, it has been concluded that as compared to the conventional design, MTCMOS technique reduced power by 37% at 90nm and 21% at 45nm. Leakage current is reduced to 54% at 90nm and 96% at 45nm. Moreover, energy consumption was also reduced to 32% at 90nm and 20% at 45nm. This paper addresses remarkable uses of low power techniques in high speed digital circuits, mobile phones and high operating frequencies.

Keywords - *Priority encoder, CMOS, MTCMOS, Power dissipation, power delay product, EDA tool.*

IOT Enabled and Smart Controlled E- Surveillance System

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Centre for Development of Advanced Computing (C-DAC), Mohali,
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Abstract - Surveillance is the monitoring of the location, behavior or activities for the purpose of directing, managing and detecting intrusion by means of electronic equipment. It may be use for security propose. The main aim of purpose system is to increase public security. The system will be use the advance technology internet of thing (IOT), which work on real time instruction and the users can easily operate all kind of equipment remotely. IOT is an advanced automation and analytics system which exploits networking, sensing, big data, and artificial intelligence technology to deliver complete systems for a product or service. IOT systems have applications across industries through their unique flexibility and ability to be suitable in any environment. E-surveillance is stand for electronic surveillance system. Systematic ongoing collection and analysis of data and the timely dissemination of information to those who need to know so that the action can be taken as e-surveillance. . In most instances, however, surveillance has a more specific usage, referring to some focused and purposive attention to objects, data, and persons. If both system has embedded than it's introduce as IOT E-surveillance. IOTES system consist of three units mainly a smart phone, a number of CCTV camera unit and a control unit. Adriano or microcontroller along with the PCB containing motor driven IC and voltage regulator circuitry. Also in the development of an android app for mobile, this capable of control real-time operation for surveillance monitoring Adriano or microcontroller has proved its importance for application in the various fields. The main work of this project is operating e surveillance system by smart phone through android app.

Keywords - *IOT, Surveillance, CCTV, Android app*

Shortest Path Calculation for Mobile Robot using ACO

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Abstract - Mobile Robot path planning (RPP) is an important research field of robotics. It refers to the use of some optimization criterion by the mobile robot to search for an optimal, safe and obstacle free path from the initial state to the target state in a work environment with obstacles. In this work, mobile robots path planning has been done by using an ant colony optimization algorithm providing minimum time complexity and good stability with the objectives of finding a collision free & shortest path between start and the end point.

Keywords - *Ant Colony optimization (ACO), artificial ant colony system (AACS), Mobile robot, Shortest path*.

Wind Speed Prediction Using Wavelet Transform and Artificial Neural Network

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Abstract - In last two decades, machine learning models have drawn attention and have established themselves as serious contenders to classical statistical models in the forecasting community. Accurate wind speed forecasting, i.e., an estimate of the expected production of one or more wind turbines in the near future can relieve the pressure of peaking power system by improving the ability to include wind power in the grid. In this paper, prediction of wind speed has been made by using a hybrid model using a back propagation trained ANN and wavelet transform. The wind speed data has been collected from the official site of national renewable Energy Laboratory (NREL) & the performance of the model is evaluated on the basis of statistical indicators such as RMSE (Root mean square error) and MAE (mean absolute error).

Keywords - *Wind speed prediction, Wavelet transform, Artificial neural network (ANN), Numerical weather prediction (NWP).*

Implementation and Analysis of Channel Response in Wireless OFDM System

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***Abstract* —** Orthogonal Frequency Division Multiplexing (OFDM) based systems are strong candidates for an air interface of future higher generation mobile wireless systems, which provide high data rates and high mobility. In this work, channel response is analyzed in presence AWGN and mean square error (MSE) of different estimators is calculated. Different estimators used in this work are LS Estimator and MMSE estimator. Performance wise MMSE estimator is better than LS estimator has but MMSE estimator has more complexity than LS estimators. Hence this works present modifications to both MMSE and LS estimators that use the assumption of a finite length impulse response. The performance is presented in terms of mean-square error (MSE)

Keywords- *OFDM, LS Estimator, MMSE estimator, Channel estimation, MSE.*

Active Contour Technique of Image Segmentation

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Abstract - Image segmentation is most crucial part in medical image analysis. Basically, Image segmentation can be defined as the division of an image space into meaningful structures for its further analysis. Segmentation algorithms utilized in medical image analysis should be able to avoid both over-segmentation and under-segmentation. The active contour is one of the most extensively used methods in the recent decade for the segmentation of ultrasound images. The active contour is a two-dimensional curve in the image space whose deformation is based on energy minimization. Implementation of this method shows that, it is more robust to initialization, and more accurate than conventional model.

Keywords – *Image Segmentation, Medical Image Analysis, Active Contour*

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