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2018 BU-MTMI
INTERNATIONAL CONFERENCE
On
INNOVATIVE RESEARCH IN SCIENCE, MANAGEMENT AND TECHNOLOGY
(ICIRSMT - 2018)

04 - 05 August, 2018

Ogranized By

Department of Computer Science and Application

Bilaspur University, Bilaspur (C.G.) India

In Association with

Modern Technology and Management Institute (MTMI), Inc., USA

In Collaboration with

University of Maryaland Eastern Shore, Maryaland, USA and Frostburg State University, Frostburg, USA

Sponsored By

Chhattisgarh Council of Science and Technology (CG-COST), Raipur, India

Supported By

Computer Society of India (CSI), Chhattisgarh

SOUVENIR

2018 BU-MTMI

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Chhattisgarh Council of Science and Technology (CG-COST), Raipur, India

|| CERTIFICATE OF CO-OPERATION ||

This certificate is awarded to

Dr. H.S. Hota

of

Bilaspur University, Bilaspur (C.G.)

for his/her significant co-operation as

Programme Chair

Prof. K.N. Agrawal
Vice Chairman
MTMI, USA

Prof. G.D.Sharma
Vice Chancellor
Bilaspur University, Bilaspur, India

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CERTIFICATE

This is to certify that Dr./Mr./Mrs./Ms. _____

from _____ *has participated/presented (Oral/Poster)/ presented-in-absentia, a paper entitled* _____ _____ *in* ***"ICIRSMT-2018"****, organized by Department of Computer Science and Application,* ***Bilaspur University Bilaspur, India in association with MTMI, USA*** *during* ***August 04-05, 2018****.*

Prof. H.S. Hota	***Prof. D.K. Sharma***	***Prof. K.N. Agrawal***	***Prof. G.D. Sharma***
Programme Chair	*Programme Chair*	*Vice Chairman,*	*Vice Chancellor*
Bilaspur University, Bilaspur, India	*University of Maryland Eastern Shore, USA*	*MTMI, USA*	*Bilaspur University, Bilaspur, India*

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|| CERTIFICATE ||

This is to certify that Dr./Mr./Mrs./Ms. _____

from _____ *has*

chaired a technical session/delivered an invited talk on _____

_____ *in ICIRSMT-2018, organised by Department of Computer Science and Application,* ***Bilaspur University Bilaspur, India in Association with MTMI, USA*** *during August 04-05, 2018.*

Prof. H.S. Hota	***Prof. D.K. Sharma***	***Prof. K.N. Agrawal***	***Prof. G.D. Sharma***
Programme Chair	*Programme Chair*	*Vice Chairman,*	*Vice Chancellor*
Bilaspur University, Bilaspur, India	*University of Maryland Eastern Shore, USA*	*MTMI, USA*	*Bilaspur University, Bilaspur, India*

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About University

Bilaspur University (Viswavidyalaya) is State University which has been established by the Gazette notification on 03.02.2012 of Chhattisgarh Act No 07, 2012, University is situated on old high court building, Near Gandhi Chowk Bilaspur city. There are nearly 173 Govt. and private colleges affiliated in the 05 districts of Chhattisgarh State which together constitute the jurisdiction of Bilaspur University. The colleges carry out undergraduate and postgraduate studies in different streams of Science, Arts, Commerce, Law and Education and centers of research. The University plans to develop strategy for enhancing the range of pedagogic approaches and the use of technology. As a part of this approach, the University plans to start classrooms into state of the art ones, enabling teachers to teach using wide variety of media.

Department of Computer Science and Application

Department of Computer Science was established in Bilaspur University, in the year 2013, with the objective of imparting quality education in the field of Computer Science. With rapidly evolving technology and the continuous need for innovation the department has always produced quality professionals, holding important positions in Information Technology industry in Chhattisgarh and India. Department is running UG/PG programs in Computer Science along with Ph.D. program and many other diploma and Masters program are in pipeline. Department has well equipped computer labs with high speed internet facility with Wi-Fi.

Activities of department During academic session 2017-18

1. **Two days national awareness workshop cum capacity building program on e-content development using OER**

   For quality higher education workshop was organized in association with CEMCA, New Delhi on 3-4 February 2018. There were total 36 number of participants attended this training program cum workshop. The Workshop was planned in order to help the participants to understand the need and significance of e-content in the context of higher education in India, to know the dynamics of e-content creation, to produce a sample e-content in the form of Short Learning Object and introducing it as an online course.

2. **Faculty development Program:** Organized two five days online faculty development programs on " ANN and deep learning " from 11/6/18 to 15/6/18 and "Internet of Things (IoT) from 18/6/18 to 22/6/18. There were total 17 and 18 participants were participated respectively in these two FDPs. The department has been identified as remote center under Ministry of electronics and Information and Communication technology (E&ICT) to run various FDP programs from time to time and is a GoI initiative for Employability Enhancement.
3. **Workshop on Android App development-**Two day workshop for the students of department on Internet of Things(IOT) was organized on 30-31 October 2017.
4. **Skill development programs:** Department is running two skill developed programs from Tata institute of Social Sciences (TISS), Mumbai and Spoken Tutorial from IIT Mumbai, many students have enrolled and cleared examination under these skill development programs.

Prof. G.D. SHARMA
Vice-Chancellor
BILASPUR UNIVERSITY
Bilaspur (C.G.) 495001
Former Vice-Chancellor, Nagaland University &
Former Pro-Vice-Chancellor, Assam University (Central)

प्रो. जी. डी. शर्मा
कुलपति
बिलासपुर विश्वविद्यालय,
बिलासपुर (छ.ग.) 495001
भूतपूर्व कुलपति, नागालैण्ड विश्वविद्यालय एवं
सह-कुलपति असम विश्वविद्यालय (केन्द्रीय)

No./ 1895/P.A./2018 Bilaspur, Date 26.07.2018

MESSAGE

I am delighted to know that the Department of Computer Science and Application, Bilaspur University, Bilaspur, Chhattisgarh, India in association with Modern Technology and Management (MTMI), Inc. USA, University of Marryland, Eastern Shore, Maryland, USA and Frostburg State University, Frostburg, USA is organizing International Conference on **"Innovative Research in Science, Management and Technology (ICIRSMT 2018)"** at Ananda Imperial Hotel, Bilaspur, Chhattisgarh, India from August 4-5, 2018.

In the era of globalization and privatization, various issuers in the field of Science, Management and Technology have resulted due to integration of systems functionalities and business operations. It has become the need of the hour to update one's knowledge and adapt to the changing environment in the context of the present expansion. I am sure that during this programme new areas of research shall be explored for its diversified applications. I understand that more than 200 research papers have been received from USA, Saudi Arab, South Africa and India. This is for the first time an opportunity to the scientists, professors and Scholars of the state of Chhattisgarh to have interactions with such a galaxy of scientists from different countries of the World. I congratulate and highly appreciate the Head, Department of Computer Science and Application for taking such a grand initiative for the students and teachers of the state.

I heartily extend my best wishes to the members of the organizing committee who have contributed for the conference and congratulate the program chair for his relentless efforts in making this dream happen. I also congratulate each and every member who have been the part of organization of this International Conference on "Innovative Research in Science, Management and Technology (ICIRSMT 2018)" and convey my best wishes to all the academicians, scientists, delegates and participants across the world for the success of academic discussions and deliberations during this event.

G. D. Sharma
Prof.G.D.Sharma 26.7.18
Vice-Chancellor

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Dr. INDU ANANT
Registrar

BILASPUR UNIVERSITY,
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Ref. No. 25.11/CSSIT /2018 Bilaspur, Date: 27 /07/2018

MESSAGE

It is an immense pleasure that Department of Computer Science & Application, Bilaspur University, Bilaspur, Chhattisgarh, India in association with Modern Technology and Management (MTMI), Inc. USA is organizing a two days International Conference on "Innovative Research in Science, Management and Technology (ICIRSMT-2018)" in collaboration with Maryland University, Eastern Shore, Maryland, USA, Frostburg University, Frostburg, USA, to be held during August 4-5, 2018. I feel that the conference would be of great benefit for the researchers, scientists, and aspiring students of this field.

I express my heartiest good wishes to the organizing committee as well as the participants for the forthcoming learning experience. I wish this conference to be a grand success.

Dr. Indu Anant
Registrar
Bilaspur University

UNIVERSITY of MARYLAND
EASTERN SHORE

DIVISION *of* ACADEMIC AFFAIRS

School*of* Business and Technology
Department of Business, Management and Accounting

KIAH HALL
PRINCEESS ANNE, MARYLAND 21853

CAMPUS: (410) 651-6523
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Message

The Department of Business, Management & Accounting at the University of Maryland Eastern Shore is pleased and proud to be one of the sponsors of the International Conference on Innovative Research in Science, Technology and Management organized by the Department of Computer Science and Application, Bilaspur University, Bilaspur (C.G.) India, and Modern Technology and Management Institute (MTMI), Inc., USA.

One of the challenges for the researchers during this period is to apply their highly specialized research across different fields of human information and take part in interdisciplinary studies. This phenomenon is becoming unavoidable for researchers. The ability of technology, mathematics, management, and innovation to engage quantitative and qualitative research has driven different fields forward through their volume and applications. I trust this conference will bring intellectually stimulating interactions and good thoughts that would be globally valuable.

Please accept our well-wishes for a successful international conference.

Dr Sharma

Dinesh K. Sharma, Ph.D.
Professor, Quantitative Methods & Computer Applications
Editor-In-Chief, Journal of Global Information Technology

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School of Business
Department of Information Systems
and Supply Chain Management

It gives me great pleasure to send you a very sincere message of support and good wishes.

Today's educational institutions are operating in an increasingly global market that demands students who have the ability to work in cross-cultural environments. This conference will provide an international platform for the academicians, practitioners, business leaders, researchers and students around the globe to interact and share their views in the context of the theme of the conference. Such international conferences will help in generating more international research into the theory, practice, and teaching of management. The conference will also help create an educational experience that helps in developing global leaders.

I would like to congratulate Dr. H. S. Hota and his colleagues at the Department of Computer Science and Application, Bilaspur University, Bilaspur (C.G.) India for this excellent initiative and to bring out a Souvenir for this conference. This is further encouraging to see that your University has partnered with Modern Technology and Management Institute, Inc. of Maryland USA and other renowned academic Universities. It will be a great opportunity for the staff and students of Bilaspur University to have quality interaction with some of the leading management experts on the themes of this conference.

I am sure that participation of renowned academicians, distinguished practitioners, eminent business leaders and illustrious researchers, scientists and all the more brilliant students from all part of the world would and sumptuousness and bring opulence concerning the theme of the conference.

I wish your esteemed institute and its eminent leadership all the best in your endeavor. I am sure the outcome of the conference shall be remembered for many years to come.

Best Regards,

Kamal Nayan Agarwal, Ph.D.
Vice-Chairman of Modern Technology and Management Institute, Inc. (MTMI)

UNIVERSITY of MARYLAND
EASTERN SHORE

SCHOOL*of* BUSINESS AND TECHNOLOGY

Office of the Dean

July 13, 2018

The Department of Business, Management & Accounting at the University of Maryland Eastern Shore is pleased and proud to be one of the sponsors of the International Conference on Innovative Research in Science, Technology and Management organized by the Department of Computer Science and Application, Bilaspur University, Bilaspur (C.G.) India, and Modern Technology and Management Institute (MTMI), Inc., USA.

I applaud the strong connection between Bilaspur University and UMES as we all work to use research in science, technology and management as a common tool for the promotion of international cooperation and growth. I wish you all success in your current and future research endeavors. I truly wish I could join you in person, and hope to be able to attend one of the future conferences that I am sure will be held. One of the most exciting aspects of an academic life is the opportunity for direct experience of different cultures, and I look forward to our continued collaborations.

With my sincere best wishes,

Kate Brown, Ph.D.
Interim Dean
School of Business and Technology
University of Maryland Eastern Shore
Princess Anne, MD 21853

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STATE UNIVERSITY

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Dr. Michael Monahan
Chair, Department of Management
Frostburg State University
Frostburg, MD USA

MESSAGE

The College of Business at Frostburg State University is pleased and proud to be one the sponsors of the 2018 BU-MTMI International Conference on Innovative Research In Science, Management And Technology at the Aananda Imperial Hotel in Bilasur, C.G. India during August 4-5, 2018.

The conference is co-sponsored by multiple academic institutions of higher education and other professional organizations, which is a true reflection of its quality and authenticity. The topics of discussion at this conference are of global significance and timely. I encourage all in the fields of Science, Management, and Technology to participate in this outstanding learning opportunity and take away practical lessons which could not be furnished in classrooms. In addition, you will have an opportunity to meeting and form academic relationships with colleagues from around the globe.

I wish the organizers of this important conference a world of success!

UNIVERSITY of MARYLAND
EASTERN SHORE

DIVISION *of* ACADEMIC AFFAIRS

School *of* Business and Technology

Department of Business, Management and Accounting

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Message

The Department of Business, Management & Accounting at the University of Maryland Eastern Shore is pleased and proud to be one of the sponsors of the International Conference on Innovative Research in Science, Technology and Management organized by the Department of Computer Science and Application, Bilaspur University, Bilaspur (C.G.) India, and Modern Technology and Management Institute (MTMI), Inc., USA.

This conference is an excellent platform for all participants to showcase their latest research work, network and learn from each other. Please accept my well-wishes for a successful and productive conference.

Kind regards,

Vichet Sum, Ph.D.
Chair & Associate Professor

School of Business
MM&E Department
Norfolk State University
700 Park Ave., Brown Hall
Norfolk, Virginia 23504-8060

Sally Sledge, Ph.D.
Telephone 757.823.2953
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August 4, 2018

Greetings!!

I am sending my best wishes to the participants of the International Conference on Innovative Research in Science, Management and Technology. I understand the conference is being organized by the Department of Computer Science and Application, Bilaspur University, and being held at the Aananda Imperial Hotel in Bilaspur, C,G, India August 4-5, 2018.

I wish I could be with you in person but I have prior commitments that I must keep. Instead, I will be speaking to you via teleconference.

I want to thank my esteemed colleagues Dr. Kamal Agarwal, Professor of Information Systems and Supply Chain Management at the Howard University School of Business in Washington, D.C., USA and Dr. Dinesh Sharma, Professor of Quantitative Methods and Computer Applications in the Department of Business, Management and Accounting, at the University of Maryland Eastern Shore, located in Princess Anne, Maryland, USA, for inviting me to speak to you. I have been working with them for a number of years with the Modern Technology Management Conference held here in the United States. We have always had excellent presentations and discussions at this annual meeting, and I am sure your conference will result in great new insights and research agendas that will significantly advance the fields of science, management and technology.

I believe academic conferences are so useful to bring together scholars and practitioners from different fields to collaborate in a space that allows for a fresh mindset away from the office where new ideas and out of the box thinking can take place. I wish you a very productive conference and know that the benefits from this gathering will not stop when you leave, but instead they will cause creative deductions and inductions will germinate over time as the deep thinking leads to theories, models and writings.

Have a dynamic conference experience and please do not hesitate to contact me after my presentation if you have questions, ideas or suggestions.

Very respectfully,

Sally Sledge, Ph.D.
Professor of Management

Norfolk State University, Norfolk, VA

UNIVERSITY OF MARYLAND
University College

Daniel Mintz
Program Chair, Information Systems Management
Collegiate Associate Professor
Chair, Academic Advisory Board (AAB)
University of Maryland University College
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MESSAGE

I am honored to be an invited speaker at the 2018 BU-MUMI International Conference on Innovative Research In Science, Management and Technology.

The conference will bring together experts in multiple fields from many locations around the world. Attending will provide an opportunity to learn from the various presentations and equally important to share and discuss ideas with fellow experts and practitioners both at the sessions and afterwards in informal interactions otherwise difficult if not impossible to be part of.

I know that everyone who is able to attend will gain a great deal from the experience.

Kind regards,

Daniel Mintz

MESSAGE FROM PROGRAM CHAIR

Bilaspur University takes great pleasure and pride in organising international conference on Innovative Research in Science, Management and Technology (ICIRSMT – 2018). The conference is being organised in association with Modern Technology and Management Institution (MTMI), Inc. USA, University of Maryland, Eastern shore, Maryland, USA and Frostburg State University, Frostburg, USA.

Bilaspur University is a state university which has been established on 03.02.2012 by the gazette notification of Chhattisgarh and came in existence in June 2012. An international conference is a humble endeavour of University to provide opportunity for budding scientists and academicians of the state of Chhattisgarh to interact with distinguished scientists so that they can know latest developments and innovations in field of science, management and technology. The ideas, discussions and deliberations shall enable the participants to take up new challenges and initiatives in their chosen area of research. We feel delighted to host distinguished personalities as keynote speakers and other speakers from USA.

We are presenting this souvenir to the academics and research community. We thank all the contributors for their well-researched papers, and we are very much hopeful that this souvenir will be of use to those who are involved in research activities and also to those who are engaged in teaching implying latest technology.

My special thanks to our Hon'ble Vice Chancellor Prof. G.D. Sharma and Registrar, Dr. Indu Anant for their continuous support and guidance towards organizing this event.

I am indebted with cooperation and endless effort of Prof. D.K. Sharma, University of Maryland, Eastern Shore, USA who guided and supported us continuously during each stage of this conference. I am also thankful to Prof. K.N. Agarwal, Howard University, Washington DC and Vice Chairman, MTMI, USA for giving this opportunity to host such a big international event. We would like to thank our editorial board members, committee members, various chairs, Computer Society of India (CSI), Chhattisagrh and our sponsors for the valuable advice, guidance and support rendered during each and every stage.

On behalf of organizers and Bilaspur University, I extend a warm and cordial welcome to all our guests, experts and young delegates and hope that the conference will leave positive memories for you to cherish. We seek your support and good wishes for this two days conference to be a grand success.

(Prof. H.S. Hota)

INDEX

REMOVAL OF CHLOROPHENOL FROM AQUEOUS SOLUTIONS USING A BIODEGRADABLE NANO COMPOSITE

Sunil K. Singh
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Jaya Bajpai
Bose Memorial Research Laboratory, Department of Chemistry, Government Autonomous Science College, Jabalpur (M.P.), India

A. K. Bajpai
Bose Memorial Research Laboratory, Department of Chemistry, Government Autonomous Science College, Jabalpur (M.P.), India

The anthropogenic activities today are largely responsible along with natural disasters for the pollution of surface water as well as underground water bodies. Petrochemical industries along with Chemical industries (such as Dyes, Plastic, Agricultural chemicals and Pharmaceuticals) have been established as the major sources for generating organic pollutants. The waste water from such industries contains organic pollutants. As organic pollutants are responsible for many disorders in flora and fauna members, they are of priority concern. Chlorophenol represents an important class of organic pollutants and is a major nuisance responsible for the pungent odour in potable water. Spatiation of toxic compounds from water and wastewater is indeed one of the most important environmental tasks of the present time. Catalytic oxidation ,biodegradation , solvent extraction and adsorption are few methods which have been used to address such problems. Adsorption method outplays others as it is economical, versatile and widely used method because of its affinity for variety of pollutants and is therefore used for decontamination applications in analytical techniques. Variety of adsorbents such as activated carbon , zeolites , clay, biomass. Chitin, a natural polysaccharide, is a constituent of an exoskeleton of many classes of phylum Arthropoda such as crustacea and insecta. They are also found in fungi and yeasts . They constitute the second most abundant natural biopolymer in our environment. Chitosan (which is β-1,4-linked polysaccharide) is conveniently obtained from Chitin by its partial deacetylation. When the degree of deacetylation and portion of nitrogen is more than 60% and 7% respectively, chitin is called chitosan. Chitosan's abundance (Chitin), non-toxicity, bio-compatibility, and bio-decomposability, in addition to its strength and porous structure, renders it an ideal environmental remediation material. Furthermore, its chemical functional groups,-OH and -NH_2 make it an ideal adsorbent in the treatment of wastewater. Present work describes synthesis of chitosan based nanocomposites and their characterization by various techniques. Speciation studies by adsorption onto prepared nanocomposites, assessment of quantitative effect of various experimental factors such as composition, concentration, pH, adsorbent dose and temperature on adsorption of chlorophenol.

Key Words: Water Technology, Nano Composite, Biodegradable Polymer, Chlorophenol.

EFFECT OF EUROPIUM DOPING ON BARIUM ZIRCONIUM TITANATE CERAMIC: A STRUCTURAL, MICTROSTRUCTURAL AND ELECTRICAL STUDY

G. Nag Bhargavi
Govt. Pt. Shyamacharan Shukla College, Dharsiwa, Raipur (C.G.), India (bhargavi.nag24@gmail.com)

In the present manuscript the effect of Eu^{3+} doping on Barium Zirconium Titanate ($BaZr_{0.05}Ti_{0.95}O_3$) ceramics have been studied in the light of structural, microstructral and electrical properties. For this pure and Eu^{3+} doped polycrystalline $BaZr_{0.05}Ti_{0.95}O_3$ ceramics were prepared by the conventional high temperature solid state reaction method. Phase confirmation and structural analysis of the samples was done by X-ray diffraction (XRD) which confirmed the tetragonal structure at room temperature. In case of microstructural investigations in terms of scanning electron mjcroscopy (SEM) of the sintered samples it was observed there is a significant decrease in grain size with increasing Eu concentration from 6μm to almost 1μm. The temperature dependent dielectric studies showed structural phase transitions in the samples with respect to temperature. Three significant structural phase transitions were observed in pure sample while the doped samples showed a single phase transition. As an effect of doping the Curie temperature as well as maximum dielectric constant was found to decrease with the increasing Eu concentration. The dielectric loss as a function of temperature was also studied. Conduction mechanism in the samples was studied with the help of AC conductivity data as a function of temperature.

Keywords: Solid state reaction method, XRD, SEM, Dielectric studies.

--00--

OPTIMIZATION OF SUPPLY CHAIN MODEL BY USING FUZZY PARADIGM

S. S. Mishra
Department of Mathematics and Statistics, Dr. Ram Manohar Lohia Avadh University, Faizabad-224001(U.P.), India (sant_x2003@yahoo.co.in)

The paper mainly attempts on optimization of supply chain by using fuzzy paradigm. The total optimum cost of the model has been computed as an important performance measureand sensitivity analysis has been also presented to demonstrate the use of the model. Through the discussion of correlation between the total optimum cost and other parameters involved in the model, further insight into the model and its future application is gained.

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AN IMPROVED MEDIAN BASED ESTIMATOR OF THE FINITE POPULATION MEAN IN SAMPLE SURVEYS

Dharmendra Kumar Yadav
Department of Statistics, Ramanujan College, University of Delhi, New Delhi, India (dkumar.yadava@gmail.com)

Interestingly, use of additional information on study variables rather than the auxiliary information (which increases the survey cost) may improve the efficiency of the estimation procedures of the population parameter. One of the examples of such additional information is the use of the median of the study variable. In many situations, the median of the study variable is known as this parameter does not require the complete information on the population units of the study variable unlike the other parameters, such as population mean, population variance, etc. In this study, we propose a generalized ratio type estimator for the population mean using the population median of the study variable. The asymptotic expressions of bias and mean squared error (MSE) of proposed estimator are obtained and the optimum value of characterizing scalar is achieved for which MSE of proposed estimator is minimum. A theoretical efficiency comparison of the proposed estimator with other existing estimators of the population mean are discussed in the literature. A numerical example is presented to justify the theoretical findings, and observed that the proposed estimator performs better than other competing estimators in the literature.

Keywords: Median, Ratio estimator, Bias, MSE, Efficiency.

--00--

COMPARATIVE APPROACH TO CRISP AND FUZZY INVENTORY MODELS WITH RAMP TYPE DEMAND QUADRATIC DETERIORATION AND OCCURRENCE OF SHORTAGES

S. Rawat
Dr. Ram Manohar Lohia Avadh University, Faizabad-224001(U.P.), India
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S.S. Mishra
Dr. Ram Manohar Lohia Avadh University, Faizabad-224001(U.P.), India

In this paper, we are trying to discuss the comparative approach to crisp and fuzzy inventory models with ramp type demand quadratic deterioration and occurrence of shortages. The holding cost is time-varying and is a linear function of time. Here, the deteriorating items such as food grains, fashion apparels and electronic equipments have their fixed life and decreases with respect to time during the end of the season. For the present problem, a system of non-linear equations has been developed and solved by MATHEMATICA method and the method suggested by Prof. Zadeh. The optimum cost of a fuzzified inventory

control system as an important performance measure has been obtained and a sensitivity analysis has also been carried out to demonstrate the use of the model under consideration.

Keywords: Fuzzified Cost Optimization, Inventory, Defuzzification, Signed Distance Method, Exponential Decline Demand and its Computing.

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ELECTRICITY PRODUCTION FROM SEWAGE BASED PSEUDOMONAS AERUGINOSA MICROBIAL FUEL CELL

Harit Jha
Department of Biotechnology, Guru Ghasidas University, Bilaspur (C.G.), India (harit74@yahoo.co.in)

Aakanksha Sharma
Department of Biotechnology, Guru Ghasidas University, Bilaspur (C.G.), India

Microbial Fuel Cell (MFC) or Biological Fuel Cell is a bio-electrochemical system that utilizes microorganisms as catalyst to break organic substances present in waste to release electrons. These electrons are transferred from anode to the cathode to generate current. In a sewage-based MFC, the sewage micro flora utilizes the organic matter of sewage to produce current.

In the present study different carbon substrates were used as oxidizable substrate and source of electron and energy in combination with the sewage waste to assess the efficiency of isolate bacteria in the term of electricity production. Study was performed using a double chamber Microbial Fuel Cell containing graphite electrode anode and cathode.

It was demonstrated that the production of electricity can be achieved by the Pseudomonas aeruginosa isolated from sewage. External supplementation of carbon sources improved the electricity output. Further addition of a mixture of substrates i.e starch (1%) & sucrose (0.5%) augmented potential generation as compared to single substrate. Subsequently silver, copper and nickel nanoparticles coated electrodes were used and highest voltage generation was achieved with copper nanoparticle coated electrodes and potassium ferricyanide as electron acceptor. Thus, advancement in power densities, reductions in materials costs, and a global need to produce power without net carbon dioxide emissions may make MFCs practical for electricity production.

Keywords: Microbial fuel cells, Electricity generation, Waste water treatment, Biofuel cells.

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A PRODUCTION INVENTORY MODEL FOR PERISHABLE ITEMS WITH TIME DEPENDENT DEMAND RATE AND FUZZY TYPE DETERIORATION

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In the present paper, an attempt has been made to develop a production inventory model for perishable items with time dependent demand and fuzzy type deterioration. Shortages are allowed and partially backlogged. The backlogging rate of unsatisfied demand is assumed a function of waiting time. The problem of perishability or deterioration is a major problem in the field of inventory control and management. The purpose of our study is to optimizing the total profit during a given period of time. A numerical example is given to demonstrate the developed model.

Keywords: Inventory, Deterioration, Partial-backlogging and Time Dependent Demand Rate and Production Rate.

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STUDY ON HABITAT PREFERENCE OF MYNA AROUND BILASPUR CITY

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Man and birds have a profound relation in the scheme of nature. Birds have occupied almost all habitats on this earth. Many birds are found abundantly around human settlements; hence they show natural coexistence with human beings. These birds are seen foraging around houses, fields, gardens in search of food like grains, insects, fruits and even leftover food. Some birds select nesting site near human settlement. Birds like crow hold special position in Hindu rituals. Birds commonly seen around human settlement are Blue Rock Pigeon (Collumbalivia), House Sparrow (Passer domesticus), Common Crow (Corvussplendens), Red- vented Bulbul (Pycnonotuscafer), Asian Koyal (Eudynamysscolopacea), Magpai Robin (Capsychussaularis), Blue jay (Coracias benghalensis), House Martin (Apus affinis), Rose Ringed Parakeet

(Psittaculakrameri)and Mynas. Myna is most commonly seen bird near human settlement. It is an omnivorous bird.

The Present investigation was carried out during 2014 - 2016 to note different species of mynas near the human settlement in and around Bilaspur city and their distribution in different habitats. Six habitat types were selected for present study 1) garbage dumping grounds, 2) Housing colonies, 3) Area around ponds, 4) Gardens, 5) Cultivated lands, 6) Wooded land.

Five Species of mynas were seen during study period namely Pied Myna Sturnus contra, Bank Myna Acridotheresginginianus, Common Myna Acridotherestristis, Brahminy Myna Sturnus pagodarum, Rosy starling Sturnus roseus. Out of these species, Sturnus contra was the most abundant among all followed by Acridotherestristis. It was observed that Sturnus contra and Acridotheresginginianus were found in large numbers around garbage dumping grounds, followed by Acridotherestristis. Sturnus roseus did not found throughout the year, it was spotted in mid -September to mid- February, showing local migration.

Generally two mynas namely Sturnus contra and Acridotheresginginianus frequented around garbage dumps within the city, after the implementation of Swachh Bharat Abhiyan in 2016 low occurrence of these birds was observed in the city,

In general rapid urban sprawl in both horizontal and vertical directions has decreased the chirping and tweeting of birds within the city.

Keywords: Myna, Acridotheres sp., Sturnus sp., Garbage dumping.

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A REVIEW ON CITRIC ACID PRODUCTION FROM MICROBES

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Citric acid is important organic acid produced by solid state fermentation and significantly used in many applications such as in food, pharmaceutical, cosmetics and other industry (acidulation, flavour enhancement and preservation). Citric acid is mostly produced by microbial fermentation using of Aspergillus niger. Most important part is sugar, its play important role in the production of citric acid. Many microorganisms (bacteria and fungus) are produced citric acid but recent research has shown that mostly citric acid produced by

Aspergillus niger. Two methods can be used for citric acid production: biological method and chemical method. However, biological methods for citric acid production are most promising because many biological methods have been published and accepted widely. In recent year conspicuous interest has been shown in SSF (solid state fermentation) using agro industrial residual as a substrate such as fruits peels, vegetables waste, coffee husk, wheat and rice straw etc.

Keywords: Citric Acid, Microorganisms, Fermentation, Substrate.

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SCREENING OF ACTIVE PHYTOCONSTITUENTS OF NYCTANTHES ARBOR-TRISTIS EXTRACT

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Nyctanthes arbor-tristis extract Belongs to dicot family could be a little sacred decorative tree. This plant has several healthful properties. Totally different components are used historically for treatment of varied diseases like neuralgy, chronic fever, antidiabitic, antioxidant and antibacterial activity etc. For extraction of plant both Hot (Chloroform and Methanol) and cold (Petroleum Ether) extraction methods were performed by using different solvent. The plant based mostly knowledge has become a recognized tool in explore for new sources of drugs. Standard procedures were used to take a look at the presence of assorted phytochemicals. Tannins, saponins, flavonoids and phenol all were found during this plant. The present study finished that this therapeutic valuable plant have possessed different important phytochemicals that helps within the therapeutic properties of the studied plants normally utilized in different disease.

Keywords: Nyctanthes arbor-tristis, Phytochemical, Tannins, Saponins, Flavonoids.

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TOXICOLOGICAL STUDIES OF WITHANIA SOMNIFERA

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Withania somnifera [Family :Solanaceae] is commonly known as ashwgandha in Hindi. Roots have been used as Ayurvedic remedy for Alzheimer disease, mental and Rasyanas to promote health.The present study investigates the safety and efficacy of Withania somnifera on acute and sub acute toxicity in mice and rat. Albino mice (Swiss) weighing 10-20 g were divided into 7 groups. The each group contains equal male and female mice (5 male + 5 female) were given graded doses of Withania somnifera (10, 100, 200, 500, 1000 & 2000 mg / Kg, p.o.). Experiments were conducted as per OECD guidelines-423[Acute Toxicity-Single dose]. Group – I received double distilled water as control. Animals were kept on fasting for 18 hours before experimentation. The animals were kept in observation for 96 hours for any gross behavioural changes. Albino rats (Wistar strain) weighing 100-120g were divided into 4 groups. The each group contains equal male and female (5M + 5F=10), was treated with Withania somnifera at the dose level of 200, 100 and 20 mg/kg daily for 28 days. Group I received double distilled water in same ratio served as control (vehicle). The mortality rate, behavioral changes, if any was recorded during the experimentation. The body weight of animals, measured food and water were recorded weekly upto 28 days. Investigation of all animals in each group for the blood haematology (RBC, Hb, Prothrombine time, W.B.C., TC, DC, MCV, MCH, MCHC) and blood biochemistry (Blood glucose, SGOT, SGPT, Serum creatinine) on 28th day. All animals in each group have been sacrificed on 30th day, the following vital organs viz., liver, kidney, lungs, spleen, ovaries, testes, stomach and intestine were separated, weighed for histopathological investigation of toxicity of the drugs, if any . The result was statistically analyzed by student't' test and one way ANOVA. The animal treated with 2000 ,1000 500, , 200,100 &10 mg / kg, p.o. showed no mortality.Withania somnifera shows no significant effect in the blood haematology (RBC, Hb, Prothrombine time, W.B.C., TC, DC, MCV, MCH, MCHC), blood biochemistry (Blood glucose, SGOT, SGPT, Serum creatinine) body weight, weight of vital organs in comparison to control.The acute toxicity studies indicate that Withania somnifera has safe upto the doses of 2000 mg/kg caused no mortality and normal behavior in mice and rats .The results of sub-acute toxicity shows that Withania somnifera may be used for Pharmacological testing.

Keywords: Acute Toxicity, Sub-Acute Toxicity, Withania somnifera.

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POTENTIALITY OFFOENICULUM VULGAREOIL AS NATURAL ANTIFUNGAL AGAINST CANDIDAL ONYCHOMYCOSIS

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The essential oil of Foeniculum vulgare, in vitro showed strong fungicidal activity. The minimum inhibitory concentrations of the oil were found to be 2.0 l/ml against isolated Candidalstrain..The oil inhibited potency against heavy doses of inoculum at 3.0 l/ml concentration. The oil was found thermostable upto 80^0 C and the antifungal activity did not effectedupto 36 month of storage. The oil have quick killing action .The oil also showed broad antifungal activity as also killed some other dermatophytic and non-dermatophytic fungi at the range of 0.5-3.0 l/ml concentrations. Moreover, the oil did not cause any adverse effects on mammalian skin upto 5% concentration. Thus, the oil could be used as potential source of antifungal agent after undergoing successful multicentre clinical trial.

Keywords: Natural antifungal, Essential oil, Candida sp, Candidal onychomycosis.

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GLYCINEBETAINE CONFERS FLUORIDE STRESS TOLERANCE IN CAJANUS CAJAN L. BY IMPROVING MEMBRANE INTEGRITY, ANTIOXIDANTS AND PROLINE CONTENT

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Glycinebetaine (GB) is an effective compatible solute that invariably accumulates in plants in response to abiotic stresses including salinity, drought, heavy metal, UV radiation, etc. It also acts as a direct quencher of active oxygen species (AOS), stabilizes the quaternary structures of enzymes and proteins, and protects the membrane integrity in plants under adverse conditions. Present study was aimed to elucidate the protective roles of GB against fluoride (F)-toxicity in Cajanuscajan L. Fluoride is a natural, non-biodegradable and hazardous non-metal pollutant that persists ubiquitously in the natural environment including soil, water, air, and also in the plants with varying degrees. Seeds of Cajanuscajan L. were exposed to F (100 ppm of NaF), and its combination with GB (50 μM) for five consecutive days. Exposure of

Cajanuscajan L. to F resulted in remarkable decrease in growth attributes, membrane stability index (MSI) and protein content, while significantly elevated oxidative stress as measured by increase in superoxide radical and hydrogen peroxide contents, lipid peroxidation [malondialdehyde (MDA)] and lipoxygenase (LOX) activity. Meanwhile, accumulated AOS negatively influenced the activities of antioxidant enzymes, including superoxide dismutase (SOD), catalase (CAT) and ascorbate peroxidase (APX). Nevertheless, externally applied GB successfully alleviated, up to an extent, the toxic effects of F, and improved growth traits, MSI, proline and protein contents, and diminished the levels of AOS and MDA, and LOX activity. Further, treatment of GB also resulted in enhanced activities of SOD, CAT and APX under F-stress. The results suggested that GB mediated tolerance in Cajanuscajan L. to F toxicity is mainly associated with the elevated activities of antioxidant enzymes, improved membrane integrity by lessening the oxidation of membrane lipids, and promoting accumulation of proline under F-stress.

Keywords: Antioxidants**,** Cajanuscajan L.**,** Fluoride toxicity**,** Glycinebetaine**,** Oxidative stress.

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EXOGENOUS MELATONIN MITIGATES LEAD AND ACID RAIN-INDUCED STRESS RESPONSES IN TRIGONELLA FOENUM GRAECUM SEEDLINGS BY MODULATING GENE EXPRESSIONS OF ANTIOXIDANTS

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Lead and acid rain are serious global environmental issues causing alterations in plants growth and development, metabolic activity and yield responses. Melatonin (MT), an indoleamine molecule, has been known to mediate several physiological, biochemical and molecular processes in plants under different kinds of environmental threats. However, the role of MT in stress tolerance against combined effect of lead and simulated acid rain (SAR) remains inexpressible. This study investigated the possible role of MT (50 μM) on different physiological responses together with reactive oxygen species (ROS) metabolism in Trigonellafoenum graecum (fenugreek) seedlings under combined application of lead (1200 ppm) and SAR (pH 3.5) stress. Co-application of lead and SAR caused significant decrease in growth, membrane stability and contents of chlorophyll(s) and protein, while increased the leakage of electrolyte, accumulations of ROS [both superoxide ($O_2^{\bullet-}$) and hydrogen peroxide (H_2O_2)] and malondialdehyde (MDA), and lipoxygenase activity. To cope with detrimental

effects of lead and SAR stress, plants had increased enzymatic antioxidants such as catalase (CAT) and superoxide dismutase (SOD) substantially compared to controls. But such an increase in the antioxidants activities was discernible to be insufficient to check destructive impacts of lead and SAR. On the other side, exogenous treatment of MT improved the growth and development of seedlings. Melatonin treatment stabilized the cell membrane integrity, reduced $O_2^{\cdot-}$, H_2O_2 and MDA contents, enhanced protein accumulation and up-regulated the gene expressions of CAT and SOD significantly. Furthermore, the present work provides strong evidence regarding protective roles of MT against oxidative stress resulted from lead and SAR stress in Trigonellafoenum graecum seedlings.

Keywords: Antioxidants, Gene expression, Melatonin, Reactive oxygen species, Simulated acid rain, Trigonellafoenum graecum.

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DESICCATION, REACTIVE OXYGEN SPECIES AND DNA DAMAGE IN MADHUCA LATIFOLIA ROXB. SEEDS

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Viable seeds are prerequisite and foremost determinant for overall normal growth and development of a new plant, hence are essentially required for both agricultural practices and conservation of biodiversity. However, seeds are incapable in maintaining their viability status for indefinite time, even under optimal storage conditions, and tend to lose germinability, gradually or abruptly, depending upon their metabolic activity/ species. When seeds are kept under storage, a number of degenerative changes are taking place in them, simultaneously and/ or one after another, right from the membrane damage to macromolecular amendments, although precise mechanisms underlying loss of vitality are yet to be resolved fully. However, it is so far evident that deterioration of seed under storage is an undesirable process and intimately related with desiccation-induced alterations in biochemical and molecular components of it. Keeping in mind, present study was aimed to investigate the amendments in reactive oxygen species (ROS) and nucleic acids of Madhucalatifolia Roxb. seeds with advancing days after harvest (DAH) and desiccation [loss of water content (WC)]. M. latifolia is an economically important multipurpose tropical tree species producing seeds in abundance, which has comparatively shorter life span (about 35 days only) due to higher metabolic activity and rapid loss of water, hence categorized as desiccation sensitive/ recalcitrant. Germinability of fresh M. latifolia seeds (0.59 g g^{-1} FM WC) lost rapidly and reached to 0% (0.19 g g^{-1} FM WC) within 35 DAH at ambient laboratory conditions (Temperature 25±2°C, Relative humidity 50±2%), revealing close relationship of it ($r = 0.95$, $P < 0.05$) with WC. Further, in view to

untangle possible mechanisms involved in deterioration of M. latifoliaseed, levels of ROS and changes in DNA content, oxidation, fragmentation and polymorphism were monitored. Following the experiments, significant (2.1 - 7.4 fold, $P < 0.05$) upsurge in accruals of superoxide ($O_2^{\cdot-}$), hydrogen peroxide (H_2O_2) and hydroxyl radicals ($\cdot OH$), cytotoxic by-products of cellular metabolism, were observed in desiccated seeds hence are considered as potent factor for decreased longevity in M. latifolia seed. In addition, remarkable ($P < 0.05$) fall in DNA content of embryonic axes (3.8 fold) and cotyledons (6.7 fold) of M. latifolia seed was also observed. On the other hand, in parallel to ROS, enhanced oxidation (12.91-18.77 folds) and fragmentation (2.7-3.1 folds) of DNA with increased (7.6-25.31 folds) activity of DNase, were discernible in embryonic axes and cotyledons of desiccated M. latifolia seed, revealing active participation of ROS in oxidation ($r = 0.99$, $p < 0.05$), and of DNase in fragmentation ($r = 0.98$, $p < 0.05$). Moreover, dendrogram of RAPD data drawn applying UPGMA based on the Jaccard's similarity coefficient showed similarity coefficients of 0.15 and 0.20 only between 0 and 35 DAH embryonic axes and cotyledons respectively. Overall results concluded that rapid loss in viability of M. latifoliaseed was contributed of desiccation promoted over accumulation of ROS ($O_2^{\cdot-}$, H_2O_2, $\cdot OH$), fall in DNA content, increased oxidation, fragmentation and polymorphism in DNA, DNase activity.

Keywords: DNA damage, Reactive oxygen species, Madhucalatifolia, RAPD, Seed viability.

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GROUND WATER QUALITY OF CHITRAKOOT

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Water represents the basic element of supporting life and the natural environment and is a vector for domestic and industrial pollution. Water quality is a major concern of developing countries, where existing conditions of water supply infrastructure is poor and financial resources for construction and maintenance of infrastructure are inadequate. Water has a great role to play in socio-economic development of human population. Much of ill health that affects humanity can be traced to lack of safe and wholesome water supply. Therefore present study was carried out in Chitrakoot. The study was aimed to examine various physico-chemical and biological quality as it is related to public health .The parameter investigated were pH, EC,TDS, DO, BOD, Hardness and total coliform etc. and results were compared with WHO and IS standard. It was observed that few ground water samples were in acceptable limit while few were found unfit for drinking propose and needs proper disinfection or treatment before consumption.

Keywords: Ground water, Pollution, BOD, Temperature, Total coliform.

SUITABILITY OF SANSKRIT FOR COMPUTER PROGRAMMING: A REVIEW

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From the past many years, a lot time, attempt, and cash has been expended on designing an ambiguous illustration of natural languages to make them accessible to computer processing. Those efforts have centred round developing schemata designed to parallel logical relations with relations expressed by means of the syntax and semantics of natural languages, which can be truly cumbersome and ambiguous in their feature as automobiles for the transmission of logical facts. Understandably, there may be a massive perception that natural languages are fallacious for the transmission of many ideas that artificial languages can render with super precision and mathematical rigor. In this paper I have reviewed the attempt to establish the parallelism between the Sanskrit and natural language processing and the theoretical implications of this equivalence will be given.

Keywords: Semantic networks, Sanskrit, AI.

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THE USE OF CHITIN AND ITS DERIVATIVES FOR EFFECTIVE CARBON SEQUESTRATION

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The regulation of anthropogenic carbon dioxide emissions is currently one of the most challenging environmental issues that many industrialized countries are being faced with due to increasing levels of atmospheric carbon dioxide and its influence on the climate change as one of greenhouse gases. Most of the methods for capturing CO_2 are irreversible methods, in which CO_2 is permanently linked to the absorbent, and as a result a new environmental problem is created. Therefore, it is necessary to prepare a reversible CO_2 sorbent, which can be reused after releasing previously captured CO_2 back under mild conditions to other industrial process such as carboxylation reactions, algae growing reactors and more. Chitin and chitosan are biopolymers with vast structural possibilities for chemical modifications to generate good sorbent for carbon capture. However, their hydrophilic nature leads to swelling of the sorbent during the sorption of wet carbon dioxide, which significantly reduce the active surface. Blends with polysulfone were used to help counteract the swelling of the chitosan followed by CO_2

sorption. Some of blends that only contain 10% of chitosan have shown as high sorption capacity, as pure chitosan, due to significantly decreased swelling. Recent study has shown that the molecular weight of chitin has a significant influence on its sorption properties. To further investigate it, acid hydrolysis of chitin is performed to prepare multiple fractions of lower than natural molecular weight oligomers for better solubility and more convenient blending. Carbon dioxide sorption data, as well as hydrolysis process and its UC/Vis and SEC characterization will be discussed.

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APPLICATION OF REMOTE SENSING & GIS IN THE ASSESSMENT OF VEGETATION INDICES POTENTIAL OF FLORAL BIODIVERSITY OF ACHANAKMAR TIGER RESERVE AREA, CHHATTISGARH, INDIA

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Achanakmar Tiger Reserve is part of AchanakmarAmarkantak Biosphere Reserve and declared as Tiger Reserve in 2009.ATR is rich in both floral and faunal biodiversity. It covers an area of 914.017 sq km in which 626.195 sq kms area comes under Core zone (critical tiger habitat) and 287.822 sq kms area under Buffer zone. The entire study area lies between latitude $22^0$17' and 22°33' N and longitude 81°43' and 81°51' E.

The IRS P6 images with Awifs sensors acquired on 6th Feb 2010 and 28th Oct 2010 are considered for the study. This study aimed to assess the potential of NDVI (Normalized Difference Vegetation Index), Transformed Normalized Difference Vegetation Index (TNDVI) and SAVI (Soil-Adjusted Vegetation Index) to determine vegetation cover using remote sensing imagery. NDVI, TNDVI & SAVI gave the best estimates of vegetation cover thereby relationship between these two vegetation indices were compared. The minimum and maximum NDVI recorded is -0.11 & 0.36 and -0.15 & 0.40 for February and October respectively. There is no much variation in TNDVI values. The mean SAVI value for February and October was 0.09 and 0.18 respectively.

The ATR bears unique significance of conservation and Remote Sensing & GIS technologies offer the potential to explore the effects of different environmental drivers, land-use changes and disturbances on forest quantity, evaluation of suitable habitat for wildlife, function and dynamics at large spatial scales. The study will play a key role in conservation and management of the protected area through the detailed study of different vegetation indices potential of ATR area.

Keywords: ATR (Achanakmar Tiger Reserve) area, NDVI, TNDVI, SAVI.

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TO MEASURE THE VARIATION IN MAJOR CROP IN DIFFERENT DISTRICTS OF CHHATTISGARH

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Paddy, Jwar, Maize and milletsare an important Kharif crop of the Chhattisgarh. The data pertaining to area ('000 ha), production ('000 mt) and yield (Kg/ha)of important Kharif crop were collected for different districts and state as a whole for the period of 18 years (1997-98 to 2016-17) from the Department of Agriculture, Govt. of Chhattisgarh. Among the Kharif crop considered for the study in period I (1998-2007) and period II (2008-2017). Mann-Whitney U test statistics and Friedman's two way analysis method such as used to test variability of area, production and yield of different districts of Chhattisgarh.

Keywords: Two way variation, Kharif crop, Mann-Whitney U and Friedman test.

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A COMPREHENSIVE REVIEW ON BIOLOGICAL PERSPECTIVES OF MULTIPOTENTIAL TREE ALBIZIA SAMAN AND ITS ROLE IN BIODIVERSITY CONSERVATION

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Albiziasaman (Jacq.) commonly known as Rain tree belongs to the family Leguminosae. The tree has been introduced to many tropical and subtropical areas throughout the world from its native habitats in Central America and Northern South America. It is a fast growing tree with typical growth rate of 0.75–1.5 m/yr (2.5–5 ft/yr). Rain trees can obtain a height of 30-45 m and diameter at breast height (DBH) of 150-250 cm. It has a distinctive, umbrella shaped crown in open environment. The tree has fissured barks that tend to retain water, serves as hosts for epiphytic orchids, ferns and figs. Rain tree exhibits several bioactive compounds which produce various medicinal properties. Trees also produce multiple products such as edible pods, leaf litter for mulching and composting as well as supplementary livestock feed, nectar for honey bees, wood for crafts, furniture and construction that can be used in rural economies. Rain tree has biotic potential that helps in conservation of ecosystem through improving soil and microclimate properties. This tree is an excellent choice for silvipastures not only because its broad canopy provides shelter from the sun, but also because its nitrogen-fixing ability improves the quantity and nutritive quality of forage grasses near and under the trees. A. saman has more ecological and biological potential yet there has been only limited specific research in last two decades. There is need to give research attention to this

multipurpose tree. In this paper, the contribution of rain tree to the conservation of biodiversity and their ecological services has been documented.

Keywords: Albiziasaman, Biodiversity, Bioactive compounds, Silvipasture.

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PRODUCTION OF EGGYOLK ANTIBODIES IN CHICKEN

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Diseases are recognized as one of the major constraints to global aquaculture production and are responsible for the severe impact on both the economics and socio-economic development in many countries of the world. One of the greatest challenges and opportunities for expansion of sustainable aquaculture has been proven to be in managing the health of aquatic organisms. Although, aquaculture has developed significantly management of diseases needs more emphasis. Specific antibodies for designing and use of different immunodiagnostics are necessary. In the current scenario we have to use alternative therapeutics include use of phages, pre biotic, pro biotic , cytokines, avian egg yolk antibodies, chicken egg yolk antibodies, and various other immune modulator / immune therapeutics approaches, out of these valuable therapies the application of oral passive immunization using chicken egg yolk antibodies (immunoglobulin Y, IgY). Specific antibodies produced in chicken offers several important advantages over producing antibodies in other mammals. A single egg contains as much antibody as an average 25 ml bleed from a rabbit. This simple non- invasive approach presents an appealing alternative to conventional polyclonal antibodies production methods. Purification of chicken egg yolk immunoglobulin Y, does not require animal bleeding. In addition , the eggs from immunized chickens provides a continual, daily source of polyclonal antibody, and this convenient approach offer regulations. These IgY antibodies could be used for either developing immunodiagnostics kits or in passive immunotherapy against diseases. This will reduce the use of chemicals or antibodies in the aquatic environment and also help in controlling viral infection. This will developing effective pharmaceutical and treatments options for various infectious diseases of fish/ aquaculture animals as well as for safeguarding health of humans and their companion animals.

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DIVERSITY OF ALGAL FLORA OF BILASPUR (C.G.)

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Bilaspur is a district of Chhattisgarh and is situated between 21°37'-23 °7'North latitude and 81°12'- 81°40' East longitude. It occupies the northern part of the Chhattisgarh basin. The North, West and Eastern parts of the district are enclosed by hilly range while the Southern border is generally open. The investigation was carried out to survey, collect and identify the algal flora of Bilaspur (C.G.). Ninety Six species belonging to Forty seven genera of algae was reported. This analysis is based on our observations and the materials collected from the different sites. Random sampling technique has been applied for algal collection samples. Sometimes planktonic mesh net was used for deep water bodies. The algal samples were preserved in 4% formaline. Slides were prepared for microscopic studies and were observed by using light microscope and making their camera lucida drawings. The genera belonged to five different classes of algae viz. Cyanophyceae, Chlorophyceae, Bacilliariophyceae, Euglenophyceae and Rhodophyceae. Class Chlorophyceae was found to be dominant among all the classes while Rhodophyceae was most rare. Of these 12 genera belonged to Cyanophyceae exhibiting 33 species, 27 genera belonged to Chlorophyceae exhibiting 46 species, 6 genera to Bacilliariophyceae having 12 species, one genus belonged to Rhodophyceae represented by 1 species only.

Keywords: Algal flora, Bilaspur, Diversity, Planktonic mesh net, Formaline, Camera lucida, Light microscope.

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INSECT'S BIODIVERSITY, A MINI REVIEW

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Phylum Arthropoda is the largest phylum of invertebrates in Animal Kindom. In present scenario the evolutionary wheels are emerging the more diverse species cause for changes in climate (temperature, pollution, emissions of industries wastage in environment). Bio-diversity also gives raising of a new species like as a disease vector insects, species Anophelesaitkeri (James, 1903) order **Stethomyia**, for transmitting malaria (Murshid R et al, 2018) impact. Insects Bio-diversity provides fundamental information to upcoming generation for their usages purpose. Insects are use full for pollination in plants (**Hymenoptera**, **Order**) and also have their use in various field like, Medicine, Pharmaceuticals and also for Agricultural purpose. Some insects and insects product are also edible. Insect also used as a Bio-marker to

determine several disease treatment for social-economic purpose and also provide the fundamental information to future work.

Keywords: Bio-diversity, Vector, Hymenoptera, Bio-marker.

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INSIGHTS OF TOXICITY INDUCED BY ZINC OXIDE (ZNO) NANOPARTICLE USING SYSTEMS NETWORK APPROACH

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Zinc oxide nanoparticles (ZnO-NPs) are widely used in various industries like consumer products, paint, and pharmaceutical preparations. ZnO-NPs induce reactive oxygen species (ROS) formation in a human cell, leading to the generation of cytotoxicity, genotoxicity, and carcinogenicity. In the present study, we analyzed the ZnO-NP interaction with proteins through various computational system network approaches for the screening of potential target, which may play an effective strategy for the understanding of toxicity mechanism of ZnO-NP within the biological system. We have constructed the ZnO-NP and proteins interaction network map by using computational approaches and experimental databases. After topological, network and directional mapping analysis was performed to identify a set of candidate that may play important roles in toxicity mechanism of ZnO-NP within the system. IL6 is the most potential target that we was found in our system analysis and which may be act as a hub node for the interaction network and also be a promising target for further experimental validation. After screening of potential protein from the system network, molecular docking methodologies were performed using Auto Dock 4.2.6. software. We have observed binding affinity of ZnO-NP with IL6 protein is -5.71 Kcal/Mol and also screen the interaction pattern of amino acid residues which play important role in binding affinity again the ZnO-NP.

Keywords: Zinc oxide nanoparticles (ZnO-NPs), Molecular docking, AutoDock, Nanoparticle-Protein Interaction.

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COMPARATIVE STUDY OF RADIATION PATTERN OF SQUARE SPIRAL ANTENNA

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Frequency- independent antennas are used in applications that require grater bandwidths. B i- conical spiral antennas and log-periodic antennas are often classified as independent of frequency, since the spiral antennas can be built as planers structures in accordance with the principle. Aluminium Nitride has been used as antenna substrate of thickness 2mm relative permittivity 8.2 and tangent loss (tanδ) 0.002. Measured loss in 1.9dB at 8GHz Width of the strip spiral have been taken d_1 = 1 mm d_2 = 2 mm and the spiral spacing 4mm. A strip is mounted at the center point. Various parameters are studied for the spiral antenna. The effect of feed gap, which is a critical parameters for the performance of antenna, is studied for different frequencies.

Keywords: Spiral antenna, Side lobe and Frontlobe.

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BIOVOLARIZATION OF AGROINDUSTRIAL WASTES FOR INVERTASE PRODUCTION

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Nowadays, invertase finds its application in confectionery industries and food industries. The prime feature of the enzyme is production of fructose with higher sweetening capacity, making this enzyme vulnerable for biotechnological usage, such as the production of non-crystallizable sugars and soft centered chocolates. Other than that, it has been used in the production of non-crystalling creams, jams, artificial honey and in confectionery industry.

Being an agricultural Chhattisgarh nurtures agro-based industries like rice mills, sugar industries etc. The agro-based waste materials can be efficiently utilized for production of enzymes having great industrial demand. The transformation of the nutritional components of the wastes can be diversified towards enzyme production utilizing the potential microbial diversity residing in soils of the state.

SSF (Solid state fermentation) has been used in the present study based on biovolarization of vegetable and fruit peels for Invertase production and application of mixture designing for potential product formation.

Keywords: Solid state fermentation, Invertase, Biovolarization and Food industry.

PERFORMANCE OF FOLIAR APPLIED SEA-WEED EXTRACT (AEROS) ON GROWTH AND YIELD OF TRANSPLANTED RICE

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The present experiment was laid out in randomized block design with 5 replication and four treatments at University Research cum Instruction Farm, IGKV, Raipur during kharif 2015 and 2016. In this experiment applied, two foliar spray of sea weed extract with recommended dose of fertilizer (RDF) i.e. 100:60:40 kg N : P_2O_5 : K_2O ha^{-1}. The treatment consisted of T_1 (300 ml of AeROS + RDF), T_2 (450 ml of AeROS + RDF) T_3 (625 ml of AeROS + RDF) and T_4 (RDF).

On the basis of two years results, the growth, yield parameters and yield of transplanted rice were significantly higher under twice foliar application of AeROS @ 625 ml ha^{-1}, first at 25-30 days after transplanting and second at 55-60 days after transplanting but, it was comparable with its lower dose of 450 ml ha^{-1} over control.

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GROUND WATER QUALITY OF LUCKNOW CITY

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Water is essential for life on surface of earth. Primarily the ground water was safe to drink but after the time was passed it became polluted due to huge discharge of untreated industrial effluent and other human activities. Polluted water is mostly responsible for diseases like jaundice, hepatitis, typhoid dysentery and diarrhoeaetc. Surface water and Ground water both are the source of drinking water in the Lucknow city, the capital of Uttar Pradesh. The aim of this study is to know the current situation of ground water quality of Lucknow city. In this study 5 location at Lucknow city have been selected for collecting ground water samples and comprehensive physico-chemical analysis was conducted.Physico-chemical Parameters

like temperature, turbidity, conductivity, TDS, chloride, fluoride, total hardness, alkalinity, nitrate and phosphate were measured according to the standard method. The results were compared with IS drinking water standard 10500 and observed that most of parameters in all sampling station were found within acceptable limit while few parameter like TDS, total hardness, alkalinity and sulphate were found higher than standard limit at some of the location.

Keywords: Ground water, Physico-chemical, Pollution, Lucknow.

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NEW MODIFIED RATIO TYPE ESTIMATOR OF POPULATION MEAN USING KNOWN MEDIAN OF STUDY VARIABLE

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In present paper a new modified ratio type estimator of population mean of study variable has been proposed. The proposed estimator makes use of known value of population median of study variable under simple random sampling for improves estimation of population mean. The expressions for the bias and mean squared error of the proposed estimator have been derived up to approximation of degree one. The optimum values of the characterizing constants have also been obtained. The minimum value of the mean squared error of the proposed estimator has been obtained for these optimum values of characterizing scalars. An efficiency comparison of the proposed estimator has been made with the other existing estimators of population mean under simple random sampling scheme. Theoretical findings have been verified through the numerical study. It has been shown through numerical study that the proposed estimator has least mean squared error among other existing estimators of population mean.

2010 AMS Classification: 62D05

Keywords: Study variable, auxiliary variable, Exponential ratio estimators, Bias, Mean squared error, Efficiency.

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APPLICATION OF CONFIRMATORY FACTOR ANALYSIS IN THE DETERMINATION OF RISKS IN BANKS

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Traditionally confirmatory factor analysis is used for perceptual and psychological studies to check the reliability of the research instrument as well as to validate the proposed model of the researcher. In this paper the researcher is interested in the mathematical notions behind confirmatory factor analysis. The application of CFA emerges from the total average scores of factors involved in the model. These scores are rational numbers bounded by the values the extreme values 'a' and 'b' of the Liker's scales. For example in five point scale a=1 and b=5.

In the determination of Risks in banks, the researcher used 16 financial ratios are exploited to prove the existence of market risk, credit risk, interest rate risk, Operational risk and credit risk . The numerical values of these 16 financial rations play a key role in predicting the existence of risk. It is proved credit deposit ratio, interest ratios and their numerical values predict the existence of interest rate risks in banks. Therefore the researcher intended to propose certain financial areas would predict the risks. Hence this model has to be validated or confirmed.

In the first step the ratios concerning the risk are determined for the span of 10 years from banks financial statements and the numerical values are normalized by taking logarithmic values, now they have the analogy of factor scores obtained in scaling approach. It designates the data for the application of confirmatory factor analysis to confirm the ratios through the fit indices of CFA. Again the nature of numerical values is carefully examined for ranking purpose. This attempt would enable us todetermine and compare the validity of ratio approach in different banks.

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SOLID WASTE MANAGEMENT AND PLANNING: GIS MODEL ANALYSIS OF BILASPUR CITY

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There is a tremendous amount of loss in terms of environmental degradation, health hazards and economic descend due to direct disposal of waste. It is better to segregate the waste at the initial stages where it is generated, rather than going for a later option which is inconvenient and expensive. There has to be appropriate planning for proper waste management by means of analysis of the waste situation of the Bilaspur area.

This paper would deal with, how Geographical Information System can be used as a decision support tool for planning waste management of Bilaspur city. A model is designed for the Bilaspur area in Chhattisgarh State for the purpose of planning waste management. The suggestions for amendments in the system through GIS based model would reduce the waste management workload to some extent and exhibit remedies for some of the SWM problems in the Bilaspur area. The maintenance and the management of data is an important thing which was found missing in the system due to which it was quite difficult to know about the systems functioning. The data should be managed in an integrated way to reduce the complexity of different issues related to the function of the work involved in the waste management system. The commonly observed problems in city area or the key issues were; the garbage is not lifted at regular intervals. The waste bins are most of the time in a pitiful condition lying full of garbage without being cleaned and also bins are either uncovered or not lying upright. There was no segregation of solid waste categories like paper, glass, polythene, food material etc. On the other side the municipal authorities had their reasons for this mismanaged of the waste maintenance. The citizens do not throw the waste inside the bins so it often lies outside and around the bins, making the area around the bin look dirty.

Model should be Logistic Management and Spatial Planning for Solid Waste Management Systems using Geographical Information System. A GIS based transportation model for solid waste disposal of Bilaspur city. Estimation and allocation of solid waste to bin through geographical information systems

Keywords: Waste management planning, Municipal waste, Waste bin allocation, Geographical information system (GIS).

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ENVIRONMENTAL DEGRADATION: A CASE STUDY OF BILASPUR DISTRICT (C.G)

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Main objectives are recall the concept of environmental degradation and factors that cause it; explain how exploitation of natural resources leads to environmental degradation; explain the relationship between population growth and environmental degradation; explain the relationship between urbanization and deterioration in environment; explain the causes and effects of deforestation; draw a relationship between excessive mining and environmental degradation; explain the meaning of fossil fuels and the impact of their use on the environment; discuss how modernization of agriculture has adversely affected the environment; discuss the impact of industrialization on abiotic (air, water and soil) and biotic resources (plants and animals) of the environment; list local, regional and global backlashes caused by environmental degradation; Describe the impact of environmental degradation on life.

Rapid industrialization has also led to pollution from dumping of industrial effluents into rivers and other water bodies. Rapid industrialization has caused much damage to the environment in Bilaspur District. Mining activities have depleted stock of mineral resources particularly fossil fuels. Arpa river are suffering from pollution due to discharge of effluents from industries, human settlements, bathing, washing of clothes and throwing of garbage into the river.

Keywords: Environmental Degradation, Loss Biodiversity, Urbanization and Environment.

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SUSTAINABILITY OF SUPPLY CHAIN MANAGEMENT IN INDIA

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India has always been one of the most attractive markets in the purview of Multinational Companies. Various technologies are being adopted by the multinationals for achieving higher rates of success, in spite of the fact, that there exists a significant difference in the market as well the economic conditions in comparison to the developed countries. Various frameworks have been adopted in terms of Supply Chain Management for advancing their business targets in India.

In the developed countries the norms for supply chains includes, modern highway infrastructure, GPS tracking technologies, highly developed logistics and warehousing facilities. But the underdeveloped countries lack far behind from such advancements and thus there exits supply chain gaps which creates the challenges.

This paper focuses on the existing supply chain management systems in popular retail outlets namely Reliance Fresh and Big Basket. The objective is to assess the sustainability of the strategies adopted and their approach towards success. These brands have their own set of challenges in terms of skilled labors, low infrastructural facilities, shortage of electricity and the cumbersome and slow bureaucracy. The constraints of logistics and warehousing are equally significant.

Yet, the multinationals as well as the domestic brands are doing business in India and also achieving their business targets. The paper is meant to study the strategies of SCM implemented by two renowned outlets, retailing fresh fruits and vegetables and also growing their business goals. The sustainability of such strategies in parallel to major challenges needs application of dynamic forces.

Keywords: Supply Chain Management, Strategy, Sustainability, Reliance Fresh, Big Basket, Retailers.

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THE EFFECT OF INVENTORY COST MANAGEMENT ON PROFITABILITY OF MANUFACTURING SECTOR OF SULTANATE OF OMAN

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In present dynamic business environment, the inventory management plays a significant role over the financial performance of any organization.Many research in this field had been conducted all around the world, but a very few studies in Oman, hence this study is. The study is outcome of a graduation project. This study has examined the effect of inventory management on the profitability of manufacturing companies in Oman.Focus is to determine significance of management of the three types of inventory on firm's performance. The study is based on secondary data for five years (2012-16) extracted from audited published financial reports ofthree companies listed on the Muscat Security Market, Oman. Data have been analyzed using ratio analysis, correlation and regression analysis with SPSS and Excel programs. The study observed that there is a positive relationship between inventory management and profitability. Inventory management have significant influence on firms financial performance.

Keywords: Inventory Management, Profitability, Manufacturing Firms.

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SAVING AND INVESTMENT BEHAVIOR OF HOUSEHOLDS 'A STUDY IN AL BATINAHREGION OF SULTANATE OF OMAN'

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Savings and Investments lead the people to the present financial situation as well as the expectations, emotions, and attitudes. Studies suggest that most of the families consider investing their savings today to gain profit in the future. While, the other consider it as the achievement of creating income, from the assets. Some of the previous research suggests that household's Investment decisions are affected by many variables such as knowledge of investors, their ability, opportunity and motivation to invest etc. However, a few studies highlight lack of awareness among Omani nationals about the importance of saving and investment. So, through this study an attempt has been made to identify the factors influencing household investors' behavior, to evaluate the level of awareness among household investors and to analyze the preference of household investor towards various investment outlets.This study is primarily based on primary data collected from randomly selected sample of 50

households in Al Batinah region of Oman, during February to May 2018.Analysis of data is done using descriptive statistical tools with help of SPSS.The outcome confirms results of previous studies to some extent. The key observation is that investors' decisionis affected by several factors mainly'the level of income', 'level of education', 'financial stability'.

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THE RELATIONSHIP BETWEEN, INFLATION, WORKING CAPITAL MANAGEMENT AND PROFITABILITY

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Business is an open framework which is influenced by many uncontrollable external factors. One of these is inflation. Studies suggest that inflation has direct impact on the working capital management and profitability. An efficient working capital is important to maintain and improve profitability of the company. This research is an attempt to examined the relationship between 'inflation', 'working capital management', and 'profitability' in 'Food', 'Cement' and 'Engineering' sector of Sultanate of Oman. The study has used secondary data from audited reports of two companies from each sector companies, listed in Muscat Securities Market for a period of 5 years (2012-16). The data collected has been analyzed using correlation and ratio analysis with the help of Excel. The study confirms results of previous studies. The study concludes that there is a negative relationship between 'inflation and working capital management', 'inflation and profitability', and 'working capital management and profitability'.

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DIRECT TAX AND INDIAN ECONOMY; AN OVERVIEW

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The power of a nation's economy is a consequence of an efficient tax structure. India's advancing tax structure has a three-tier federal structure consisting of The Union Government, The State Governments, and local bodies. These three bodies have been granted with the disposal and management of various duties and taxes that are prevailing in the country. One of

the major sources of revenue for government remains taxes and its higher ratio with GDP implies the better capability and ability of a government to spend in the public sector and the social welfare schemes. Tax to GDP ratio often called as the barometer to check the health of a country. The present study is an attempt to discuss the hhistorical and current reforms, organizational structure of direct taxation and its trend in Indian. The study further examines the impact of direct tax on Indian economy.

Keywords: Direct Tax, GDP, Indian Economy and Taxation.

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RISE IN FINANCIAL SCAMS IN INDIAN BANKING SECTOR

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The Indian Banking sector has witnessed tremendous growth in the last decade as well as pitfalls as incidents of financial frauds have also been on the rise and it has been plagued by consecutive waves of financial frauds over 35 years. Primarily, Financial scams in Public Sector Banks cost huge losses to the public exchequer. Thus, adversely affecting the Indian banking system. The recent PNB bank fraud alone contributing to an estimated more than 13000 crores loss. The fraud is of such a magnitude that it affects the credibility of RBI in ensuring the trust of people in banking. A spate of financial fraud cases has had the worst effect on country's credit rating and FDI inflows into India. The time has come for banking sector and its associated regulators such as RBI, Central Govt, Stock exchange, banking regulation act and several banking services organizations to pursue a more strategic approach to fund management within. A focused and stringent approaches should be taken by the concerned organizations keeping in mind the transparency at all level in organizations to reduce frauds. This paper presents popular financial frauds committed by millionaire in the recent years in India and ways to prevent scams from happening.

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FINANCIAL LEVERAGE AND PROFITABILITY IN OMANI COMPANIES -A MULTILEVEL ANALYSIS

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Most of the companies around the world use financial leverage to increase earnings per share and increase the return on investment. A lot of research has been conducted in different countries. However, there are very few studies conducted in Oman. Hence this study has been done to evaluate the relationship between the Financial Leverage and profitability in some business sectors in Oman. This study is based on secondary data from audited published financial statement of Gas, Industrial and Telecommunication sector in Oman, from 2012 to 2016. The debt to equity ratio is independent variable and return on investment (ROI), Earnings per share (EPS) and Return on Common Shareholders Equity (ROCE) are the dependent variables. Data so collected has been analyzed using ratio analysis, correlation and descriptive statistical tools. The findings highlight negative relationship between the financial leverage and profitability. Some companies results contradict with general findings and displays positive relationship Financial leverage and profitability.

Keywords: Financial leverage, Profitability, Multilevel analysis.

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IMPACT OF MICRO FINANCE ON EMPOWERMENT OF RURAL AREAS OF TAMILNADU

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Mahatma Gandhi stated that development of a country really lies in the development of rural villages of India. Therefore, it is very important to both state and central government to concentrate more on rural developments rather than urban developments. Most of the rural parts of Tamilnadu depend upon the agriculture for their contribution in the development arenas. The rural population consists of large farmers, medium farmers, small farmers and farming workers. The large and medium farmers are able to get their loan easily by giving their land itself as collateral. But small farmers and farming workers entirely lean upon micro finance for their livelihood and day to day activities. The micro finance are disbursed to the respondents through the sources, private sector banks, public sector banks, cooperative banks,

cooperative societies and private money lenders. In particular these sources are found to affect the livelihood of rural population due to heavy interest rate procedural delays and collection aspects.

In this context, self help groups (SHGs) play a vital role in determining the empowerment of rural population, especially women in those areas. SHGs made the loan procedure very easy, as it is able to survive through group of members. Micro finance obtained through SHGs is true from difficulties as stated above. The present paper explores the areas responsible for rural developments through micro finance.

This study is based on the primary data completely. The researcher framed a questionnaire with three parts namely demographic data's, micro finance data's and development activities. The researcher selected top 5 and bottom 5 districts of Tamilnadu based on their GDP contribution. Convenient sample method is applied to collect 30 samples from each selected districts. Hence the sample sized of the research is 300. The researcher applied Kaiser – meyer-Olkin test, exploratory factor analysis, cron bach alpha method and liner multiple regression analysis to analyze the primary data. The results proved that the micro finance is vital source of money in the rural areas of Tamilnadu. It plays a conspicuous role in the poverty alleviation, social empowerment and economic empowerment of Rural population in Tamilnadu.

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LOGISTIC AND SUPPLY CHAIN FINANCE: CHALLENGES, OPPORTUNITIES AND PROSPECTS

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High cost and easy access to working capital finance with favorable terms is always a concern of organisational performance. Traditional working capital needs and financing has been addressed to a great extant with low cost third party logistics and supply chain financing. However, finding a third-party financer is another challenge to organisation. With technological advancement and acceptance, Online supply chain facilitator has not only drastically reduced organizational working capital requirements, but also have paved ways to comfortable access to favorable low-cost financers. This paper is a theoretical framework to compile challenges, opportunities and process of modern technology based 'logistics and Supply Chain Finance'. This work will be of the help to corporation seeking easy access to low

cost working capital, researchers for their future research, policy makers and other stake holders involved in logistics and supply chain.

Keywords: Working capital Finance, Logistics, Supply chain, Supply chain financing.

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FACTORS INFLUENCING CHANGE MANAGEMENT PRACTISES IN I.T COMPANIES – A STUDY WITH REFERENCE TO TAMILNADU

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The manufacturing companies require collossal changes in the globalised and liberalized Indian economy to sustain the development & growth. Many studies argue that the change management is not a unique phenomenon but it is the composition of the factors organisational development, potential appraisal, performance appraisal, innovative training, executive development & goal setting. In order to prove that these are all the factors pertaining to change management the researcher used the employees of manufacturing companies as a bases. Inorder to obtain the responses in the form of primary data researcher framed a structured questionnaire with personal organisational variables and statement regarding the element of change management, these scales are in likert's five point in nature and varies from strongly agree to strongly disagree the researcher used convenient sampling method to obtain from manufacturing companies distributed over the three districts namely Chennai, Kanchipuram, Thiruvallur district, the researcher selected top five manufacturing companies & obtained responses from all types of executives. Hence the sample size of the researcher is 250. Researcher also used both univariate & multivariate statistical equation model to check the reliability & validity, atlast it is concluded that change management in the manufacturing sectors entirely depends upon the organisational development, potential appraisal, performance appraisal, innovative training, executive development and goal setting.

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CONTRIBUTION OF HUMAN FACTORS FOR THE SUCCESSFUL CRM PRACTICES IN PUBLIC SECTOR BANKS

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The Customer Relationship Management in banks depends upon optimistic relationship between bank staffs and customers. CRM is not a unique phenomenon, but it is a combination of human factors, maintenance factors, technological factors and strategic management practices. Hence the present research encounters primarily with the human factors responsible for successful CRM practices in public sector banks. Several studies argued that the products and services offered by service sector banks are coupled with human factors behind bank staffs and customers. Therefore it is an attempt to segment predominant human factors for the success of CRM practices. This research depends upon primary data obtained from bank staff in different public sector branches in Chennai city. The convenient sampling method is found useful to obtain the responses through a structured questionnaire. The application of factor analysis by principal component method derived 5 predominant factors namely, Smooth behavior of staffs, appropriate responsiveness, empathetic approach, reliable information and sound human relations. The study also emphasized the importance of successful human relationships for the best service of Banks and best customer loyalty.

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ENERGY AUDIT CONSUMPTION AND CONSERVATION OF ENERGY IN AGRICULTURE

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Agriculture is an important sector and the largest source of employment of rural population of the country. Agriculture is both the user and producer of energy. All agricultural operation requires energy in one form or another human labor, animal power, fertilizer, fuel and electricity. Agriculture consumes substantial amount of energy in our country. Keeping in mind the energy crisis scenario of present and future in our country we need to look at the method of energy conservation in agriculture. The agricultural sector of our country is going through rapid mechanization. Hence the need for better efficient implements are increasing for energy saving and cost minimization. Since efficient use of the energy resources is vital in

terms of increasing production, productivity, competitiveness of agriculture as well as sustainability of rural living, energy auditing is one of the most common approaches to examining energy efficiency and environmental impact of the production system. The energy audit provides sufficient data to establish functional forms to investigate the relationship between energy inputs and outputs. Estimating these functional forms is very useful for determining elasticity of inputs on yield and production. A study on energy consumption by farmers in agriculture in various villages of Mungeli was conducted. A questionnaire was prepared and the data analysis was carried out regarding existing energy consumption pattern. It enables researchers to calculate output-input ratio, relevant indicators, and energy use patterns in an agricultural activity.

Keywords: Energy audit, Agriculture, Consumption pattern.

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BOMBAY STOCK EXCHANGE INDEX PREDICTION USING MACHINE LEARNING TECHNIQUE

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Stock price prediction is very challenging and critical task for every investors before investing currency in market. The Machine learning play very important role to analyse and predict the Bombay Stock Exchange (BSE) data. In this research work, we have used different predictive techniques to develop the robust predictive model which predict the correct foresting with minimum error. We have used different data mining based predictive techniques Artificial Neural Network (ANN) , Classification and Regression Tree (CART) , Random Forest, Random Tree Bayes Net, C4.5 and Support Vector Machine (SVM) for analysis and prediction of BSE SENSEX data and also compared the performance of predictive model. The ANN achieved better prediction with very less Mean Absolute Error (MAE) and Mean Absolute Percentage Error (MAPE).

In future we will develop the new integrated model to obtain betterpredictive model for prediction of BSE and Yahoo finance data.

Keywords: Bombay Stock Exchange (BSE), Machine Learning, Prediction, Artificial Neural Network.

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EMPIRICAL EVIDENCES FOR ADVERTISEMENT EFFECTIVENESS ON DURABLE CONSUMERS IN CHENNAI CITY

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The effect of advertisement can be classified into two important domains namely optimistic and pessimistic effect and persuasion effect .The optimistic effects are learning process involved in the experience of the product as well as transparency about the marketing strategies of marketers in the durable products arena. The persuasion effects of advertisement are mainly emanated from the negative experience of the product purchase after watching advertisement. In this paper, the researcher intended to supply empirical evidences for the determination of both negative and positive effect on consumers' behavioural approach. The study depends upon primary data obtained from the durable consumers in the metropolitan city of Chennai. The researcher adopted convenience sampling method to obtain more than 200 responses to validate the present research. Confirmatory Factor Analysis and Linear Multivariate Analysis together with structural equation model are exploited to successfully supply the empirical evidences. The research concludes that most of the advertisements for the durable products are able to persuade the customers through the updated technology included in the product attributes at cheap price.

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EMPRICAL EVIDENCES OF BRAND PERSONALITY DIMENSIONS OF FMCG CONSUMER INCHENNAI CITY

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The Brand of a product used by any consumers and their individual personality is psychologically connected. Brand awareness, brand recall, brand knowledge, brand association, are all directly or indirectly related to the individual psychological characteristics of the consumer. The psychological combinations of sincerity towards the products used, excitement of watching the new brands, competence in compring the brands, sophistication in

using the brands of products, ruggedness in expressing the negation of the products and their brands are very important for a potential consumer.

In this paper the researcher intended to derive the brand personality dimensions of the FMCG consumers, especially in the metropolitan city of Chennai. The research is based on primary data obtained from 15 zones of Chennai city. Researcher obtained 300 responses from FMCG consumers, each 20 from 15 zones through convenience sampling method. A well structured questionnaire is used to estimate the brand personality dimensions. Applications of confirmatory factor analysis revealed the preciseness of brand personality dimensions. The results proved that there are five brand personalities exists among the FMCG consumers in Chennai city namely trust worthy, innovative, intelligent, luxury and cynical consumers.

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CHANGING ATTITUDE ON INDIAN CONSUMERS TOWARDS ADVERTISEMENT

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In the Liberalized and Globalized Indian Economy the rural and urban consumers in India are able to get required information about the product through effective advertisement. Advertisement brings awareness of the product, product attributes, and marketing techniques adopted by the marketers. Several studies are give that advertisement brings brand recall procedures, brand knowledge and emotions associated to the brands therefore in this study the researcher intended to study how the different types of advertisement changes the attitude of Indian consumers. In the case of optimistic attitude the ordinary consumers are transferred into dynamic consumers whereas in the case of negative attitude the consumers became cynical and became notorious in expressing negative attributes of the products. The present research examining both positive and negative attitude in changes towards advertisement, it depends upon the primary data obtained from 200 consumers of durable products in the metropolitan city Chennai. The study concludes advertisement completely changes the attitude as well as creates emotional feelings among the consumers.

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INDIAN CONSUMER BUYING BEHAVIOUR IN FINANCIAL SERVICES

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India has one of the largest saving rates to GDP. But still Indians prefer safety and liquidity over returns. They would still prefer to invest in so called safe investment products like bank deposits, post-office schemes, gold and land. Only a minuscule of total investments gets into equity markets. That's why it is said that Indians are wise savers but poor investors. This paper explores the relationship between the various financial products and the underlying consumer behavior for choosing the particular investment product. It first describes the various investment products available to the Indian consumers and then plots these products in Consumer Behavior Matrix developed by Antony Beckett. On the basis of the Consumer Behavior Matrix, it tries to conclude why customers are averse for making investments into equity markets and still prefer safe investment options.

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EMPIRICAL EVIDENCES FOR EMPLOYEE RETENTION IN IT COMPANIES- A STUDY WITH REFERENCE TO CHENNAI

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IT industry is completely based on knowledge and skill of the employee to accomplish the found several strategies such as compensation, training and development , rewards and recognition, work life balance, work environment, job satisfaction, welfare, communication, career development, management or organizational support, respect and fairness and organizational effectiveness to retain the employees for the uninterrupted productivity of the organization. Hence, the researcher intended to identify the factors responsible for employee's retention and also to conform and order them.

This paper is completely leans upon employees perception obtained through a structured questionnaire with likert's five point scale convenience sampling method in applied to obtain 270 responses from the employees of top 10 IT companies in Chennai city. Structured equation model is applied to conform the retention factors and to order them.

It is concluded that the following factors are as compensation, training and development, rewards and recognition, work life balance, work environment, job satisfaction, welfare, communication, career development, management or organizational support, respect and fairness and organizational effectiveness are able to retain the IT employees successfully.

TQM PRACTICES IN ARTS AND SCIENCE COLLEGES – A STUDY WITH REFERENCE TO CHENNAI CITY

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India's destiny is decided in the classroom at school level as well as in higher education level. This statement demands quality of higher learning institutions like arts and science colleges, engineering college, medical college and other research institutes. In these institutions the quality of education in the form of teachers quality, student quality, management's interest and infrastructure quality. They are playing a vital role in producing quality output of students. Therefore the present study mainly focus on determining the existing TQM and their components. In order to conduct this research, the researcher uses the questionnaire method obtained from college teachers alone. Researcher obtained 320 responses from different arts and science colleges distributed over various sectors i.e. government, government aided and self financing colleges. Convenience sampling method is used to collect response and exploratory factor analysis is applied to obtain the components of TQM. The study re veiled the management commitment, commitment of departments and activities of teachers with transparency. Periodic performance evaluation and appropriate training are found to create good quality of students output in arts and science colleges.

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IMPACT OF ONLINE SHOPPING ON CONSUMER BEHAVIOURAL CHANGES-A STUDY WITH REFERENCE TO CHENNAI CITY

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There is a lot of connotation difference between offline and online consumer behaviour. In the liberalized and globalized Indian economy consumers have turn towards online shopping for the convenience and avoidance of unnecessary time spent. Several studies argued that online shopping cosumers have different preferences, purchase decision process, expectation and satisfaction. Therfore the present study may be focused on identifying changes in the preference, decision making process and satisfaction level of online consumers. Recently

the researches unraveled that the dimensions of consumer behavior for online shoppers entirely based on safety and security in the transactions. This study is depending upon primary data obtained from the online shopping consumers in Chennai city through the well structured questionnaire. The researcher collected 250 respondents through convenient sampling method and applied linear, multiple regression analysis. The research revealed that there is a significant impact of online shopping on the changes in the consumer behaviour. It is noted that the significant dimensions are service quality, safety, security, convenience, door step delivery are highly predominate among online shopping cosumers.

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SMART EYE TECHNOLOGY

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We are having eyes and we use it to view things. But, what ? If we use it to control electronic gadgets like computers and Mobile phones. It is possible with the use of Sensors in electronic gadgets. This Technology controls the request of the Users and look after their Actions. Artificial Intelligence and Smart Eye Technology make it possible for all users. Technology used by Technical and Non-Technical peoples. It uses User's Eye, Display Function, Front Camera, Sensors, Movement of Eye, Algorithms, Capturization of Pictures, Interaction of Eye with Machines, Zooming Facility of Pictures, Audio-Video Feature.

Keywords: Actions, Artificial Intelligence, Smart, Front Camera, Sensors, Capturization, Zooming, Picture.

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TEACHERS EFFECTIVENESS WITH REFERENCE TO YOU TUBE IN ENHANCING PRACTICAL KNOWLEDGE

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For imparting quality education in science subject, it is necessary to enhance the effectiveness of science teachers in practical knowledge and practical skills, which is a part of professional dimension of teachers effectiveness. The objective of this study is to understand the use of You Tube for conducting the practicals. The important aims of the study is to develop practical ability for effective teaching and demonstration in any topic of science for secondary level students. Observation and oral questionnaire tools used to collect the data of practical knowledge of 40 science teachers in Bilaspur district. The results reveal that the use of You Tube is useful in demonstration of practical and effective in enhancing the practical knowledge and practical skills. It is highly recommended by NCERT and NCT to use application of ICT in teaching learning process in secondary and higher secondary level students. Hence the finding of the study is much more useful for science teacher to use the ICT during teaching.

Keywords: Teachers Effectiveness, You Tube, Practical Knowledge, ICT.

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A NOTE ON SOLUTION OF PARTIAL DIFFERENTIAL EQUATIONS USING POWER SERIES

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The method of power series solution is a traditional but strong method for Ordinary Differential Equations and Partial Differential Equations. However, despite their usefulness the application of this method has been limited to this particular kind of equations. We propose to use the method of Power Series to solve Non Linear Partial Differential Equations. We apply the method in several typical non linear partial differential equations in order to demonstrate the power of the method.

Key words: Ordinary Differential Equations, Non Linear Partial Differential Equations,Power Series

TWO DIMENSIONAL POLYMER PROPERTIES IN BIG DATA ANALYTICS PREDICTED BY ANFIS AND DEEP LEARNING

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Today users are facing the problem to handle enormous size of data in several pattern where Big Data analytics capture data and analyses the pattern where intelligence of supervised or unsupervised Deep learning methods and Prediction of two Dimensional polymer properties are a complex and highly non-linear problem with no any easy method to predict polymer properties directly and accurately and Where two Dimensional Polymer consisting of connected repeat units with end groups along all edges. The term two dimensional polymer has also been used more broadly to include linear polymerizations performed at interfaces, layered non-covalent assemblies, or to irregularly cross-linked polymers confined to surfaces or layered films. The effect of modifying a monomer (polymer repeat unit) on polymerization and the resulting polymer properties is not an easy task to investigate experimentally, given the large number of possible changes. We utilize a database of polymer properties to train the ANFIS, which accurately predict specific polymer properties. In polymer a certain amount of experimental results is required to train a well-designed ANFIS. The ANFIS approach for predicting certain properties of polymer materials are discussed here. These include fatigue life; wear performance, response under combined loading situations, and dynamic mechanical properties. Prediction of effective thermal conductivity (ETC) of different fillers filled in polymer matrixes is proposed. The finding shows that ANFIS demonstrates high prediction accuracy as reflected by the small root mean square error (RMSE) value and high correlation coefficient (r) and coefficient of determination (R^2) values. ANFIS prediction results are found to be compatible to linear regression estimations. The goal of this paper is to promote more consideration of using ANFIS in the field of polymer composite property prediction and design. The predicted results by ANFIS are in good agreements with experimental values. The predicted results also show the supremacy of ANFIS in comparison with other earlier developed models.We need sophisticated algorithms based on machine and deep learning techniques to process data in real-time with high accuracy and efficiency with high speed.

Keywords: ANFIS, Prediction, Polymer properties, Big Data Analytics, Deep Learning, Effective Thermal Conductivity (ETC).

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SMART GARBAGE COLLECTION FOR SMART CITIES BASED ON GIS

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The govt. of India has recently launched a smart city project and for these smart cities to be smarter it is necessary that the waste collection system has to smarter and in addition to that the people need easy accessibility to the garbage disposing points and garbage collection process has to be efficient in terms of time, fuel cost and employment rate. Some of these have seen an opportunity on deploying dedicated municipal access networks to support all types of city management and maintenance services requiring a data connection. This paper practically demonstrates how Internet of Things (IoT) integrated into data access networks, Geographic Information Systems (GIS) and optimization to improve cities management systems. Waste collection solution based on providing intelligence to trash cans, by using an IoT prototype embedded with sensors, which can read, collect, and transmit trash volume data over the Internet.

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SECURITY CHALLENGES, NOVEL DATA PROCESSING AND ANALYSIS TECHNIQUES ON INTRUSION DETECTION AND BIG DATA: A SURVEY

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The current era of internet and computer technologies bring serious threat to the security of individual's and organizational information. Data mining has attracted more attention in recent years probably because of detection and prevention concepts of malicious activities and intrusions. With rapid development of cloud computing and Networking services, massive amount of data generated that traditional data processing software are inadequate to deal with them. Challenges in big data are extracting data, data storage and analysis, searching, querying and updating data, information privacy. Various techniques are there to deal with these issues. Some techniques of key attention in recent time are ensemble techniques, Genetic algorithm, neural networks, Fuzzy logic and big data analytics. This paper presented a literature study of some recent work done in these fields to explore data processing and security challenges, novel data processing and analysis techniques to deal with these

challenges. It also explores various dimensions for research in the field of intrusion detection and big data.

Keywords: Data Mining, Intrusion detection, Big data, Ensemble techniques, Genetic algorithms, Neural network.

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ROLE OF ICT IN ONLINE ADMISSION: A STUDY FROM INSTITUTIONAL PERSPECTIVE

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Information and communication technology (ICT) has significantly affected the process of admission in higher educational institutions. It has provided an edge to ways and means of traditional form of admission process and has given new dimensions to online admission. The article aims to measure the impact of ICT on online admission process in higher educational institutions in the state of Chhattisgarh. The framework of the study aims to find out the inter-effect of various dimensions ICT among the academic institutions in the state of Chhattisgarh. Study also aims to find out the perceptual convergence among demographic variables taken for the study. With the help of 80 respondents of four different educational institutions data were collected. Purposive sampling process was the means of obtaining the data. One way ANOVA, Mean and standard deviations were used for the analysis of data. The outcome suggests that perceptual difference in terms of nature of work; income and experience were not found in various dimensions under study. The mean score of various items suggests favorableness of ICT adoption in the process of admission among academic institutions in the state of Chhattisgarh.

Keywords: ICT, Online Admission, Satisfaction, Higher Educational Institutions**.**

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THE STUDY ON ENHANCEMENT OF VARIOUS TOOLS AND TECHNIQUE OF WEB CONTENT MINING

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With the enormous amount of data available on the web, the web content mining tools helps to download the essential information that one would require. They collect perfectly fitting information. Mining the web data is one of the most challenging task for data mining & various data management scholars because there are less structured and heterogeneous data available on the WWW. Through this study we can establish some effective tool for extracting structured & semi structured data & mining them useful knowledge. Data Cleaning seems to be difficult for semi structured data & unstructured, so we use different technique & approaches to extract meaningful information. For unstructured data we can use Topic Tracking, summarization, categorization, clustering while for structured data we use web crawler, page content mining, wrapper generator approaches. Various Performance metrics also used to evaluate the performance of web content mining. Web mining is a newly emerging research area concerned with web data. It involves machine learning, data mining, Natural language Processing, multimedia etc. It provides a very efficient way & technique for searching & retrieving of relevant information from the web. But due to the explosive growth of web data we might facing some problems of fast changing of web data, availability of log files, data transformation etc.

In further studies, we will explore the new suggestions regarding the categories of web data. There are different researchers are working for implementing the best tools for data transformation and for improving cluster quality.

Keywords: Data mining, Web Data, Web Content Mining.

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IMPACT OF TECHNOLOGY IN THE SOCIETY FROM MANY DECADES TO 21ST CENTURY: COMPARATIVE STUDY

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In modern age as the time is going to change technology is gradually growing, day by day new technology is introducing by researchers. People can watch information and technology helps to make world powerful, robust and pace. Over the decades, some of our most intractable problems will gradually worsen and become extremely difficult to handle causing severe disruption in life and business, for instance proper healthcare. Other several problems will cross the border and aggravate an already serious situation like quality education. Society was suffering in many obstacles at their worst situation in tropical country like India. After

introducing the technology, there are several ways to reduce the impact of big problem using advance technology is the most powerful of these methods, at most big problems are not solvable within time periods and cost without using technology. We would need technology breakthrough their solution. Some of problems that disrupt life and growth of society like proper healthcare, clean water, electricity, quality education etc.

My motive is that to find out adoption and implementation of technology by the society. How much have novation in their life standard and daily life routine, which has led to make people's life simple.

Keywords: Technology, Society, Obstacle, Adoption, Implementation.

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WIRELESS WATER LEVEL DETECTION IN TANK USING IOT AND CLOUD ENVIRONMENT IN ASIAN COUNTRIES

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Since ages water is the main source for living as it is the most basic element to enhance life on earth. Water wastage due to overflow from the over head tank is the major issue. This water wastage can be avoided by using a water level sensor device which can automatically detect water level by using Circuit. This device is configured in such a manner that it can refill the tank whenever required and intimate user about water level information and will prevent it from overflowing. IOT based Water Level Monitoring system is an innovative system. The device is configured with the application which can be installed on a mobile device and help user to control the device from remote location using internet. To illustrate this system certain things like containers are use to detect water level using ultra sonic sensors for depth comparison, microcontroller, Raspberry Pi, LED screen is used to display the status of the level of liquid in the containers, Wi-Fi modem for sending and manipulating data software application to control device from remote location through server using cloud environment.

Keywords: Monitoring system, IOT, Water level, Cloud Environment, Sensor.

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KEY TECHNOLOGY IN TELECOMMUNICATION FOR 5-G NETWORK

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5G Technology stands for 5th Generation Mobile Technology. 5G technology is to make use of mobile phones within very high bandwidth. The consumer never experienced the utmost valued technology as 5G. The objective of this paper is comprehensive study related to 5G technology of mobile communication. Existing research work in mobile communication is related to 5G technology. In 5G, researches are related to the development of World Wide Wireless Web (WWWW), Dynamic Adhoc Wireless Networks (DAWN), Requirements and Capabilities, Machine type communication, Technology Components and Real Wireless Communication. The most important technologies for 5G technologies are 802.11 Wireless Local Area Networks (WLAN) and 802.16 Wireless Metropolitan Area Networks (WMAN), Ad-hoc Wireless Personal Area Network (WPAN) and Wireless networks for digital communication. Comparing 5G to 4G technology will include several standards under a common umbrella, similar to 3G. The major contribution of this paper is the key provisions of 5G (Fifth Generation) technology of mobile communication, which is seen as consumer oriented. In 5G technology, the mobile consumer has given utmost priority compared to others. The 5G technologies include all types of advanced features which make 5G technology most dominant technology in near future.

Keywords: Mobile Communication, 4G Technology, 5G Technology, World Wide Wireless Web, Bandwidth.

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FACTOR ANALYSIS FOR THE STATISTICAL ASSESSMENT OF CHICKPEA GRAIN YIELD

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The correlation coefficients may complete information on the relationship between different traits and not to provide benefits according to several multivariate statistical analyses to understand the deep structure of data, factor analysis can be used. Factor analysis techniques used for the main purpose consists of data reduction, summarization of data and represent observed variables using a small number of factors. In order to assess this potential performance yield of Chick pea in different environmental condition and review some of the character associated with yield and some selected superior genotypes, 14 genotypes of Chickpea with studies in various locations in Chhattisgarh during 2015-16 crop year. The analysis of variance showed significant differences between the characters evaluated. Also among genotypes in terms of days of maturity, branches/plant, No. of pod / plant, seed weight and there was a significant difference in yield.

Keywords: Chickpea, Factor analysis.

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PROJECT-BASED LEARNING USING BUSINESS TECHNICAL REQUIREMENTS FOR INNOVATION WITH REGARD TO SYSTEMS-THINKING METHODS IN STEM EDUCATION AND RESEARCH

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The innovation of STEM education and the methods of project-based learning have created a systemic perspective to advance research in higher education through business partnership .Project-based learning using systems-thinking methods has been essential in this study to understand deep learning and research approaches for experimental technical design related to business requirements .This study had addressed the business practices with regard to project-based learning and the STEM practices in integrating the framework of systems-thinking methods .The framework allowed for the mapping of learning outcomes to be applied and supported the project-based learning practices for development in STEM education .This approach also addressed the nature of project-based learning in STEM education with a conceptual framework to implement requirements provided from business practices into the classroom setting .The paradigm shift of higher education to focus on business partnerships provides a strategy to investigate how does systems-thinking methods improves project-based learning in STEM education and research .The study introduces approaches that are implemented using a specific conceptual framework and models the business technical requirements for mapping of course learning objectives and outcomes in STEM practices.

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INTEGRATING DISPARATE DATA SOURCES IN BIG DATA

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Big data challenges include storing and analyzing large, rapidly growing, diverse data stores, then deciding precisely how to best handle that data. Big data is any set of data that is so large that the organization that owns it faces challenges related to storing or processing it. In reality, trends like ecommerce, mobility, social media and the Internet of Things (IoT) are generating so much information. The variety associated with big data leads to challenges in data integration. Big data comes from a lot of different places — enterprise applications, social media streams, email systems, employee-created documents, etc. Combining all that data and reconciling it so that it can be used to create reports can be incredibly difficult. Data integration tools should be designed to make the process easier. Disparate data is heterogeneous data with variety in data formats, diverse data dimensionality, and low quality. Missing values, inconsistencies, ambiguous records, noise, and high data redundancy contribute to the 'low quality' of disparate data. It is a challenge to integrate disparate data from various sources. Big data is often disparate, dynamic, untrustworthy, and inter-related. Big Data analytics can be used to analyze correlation between factors and detect patterns or uncover unknown trends in disparate data.

Keywords: Big Data, Big Data Analytics, Disparate Data, Machine Learning, Data Mining.

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HUMAN ACTIVITY RECOGNITION VIA ACCELEROMETER ENABLED SMARTPHONE

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Use of Smartphone in all age group of peoples has been increased since last two decades. Now a day's most of the Smartphone are enabled with various types of sensors like GPS sensors, audio sensors, image sensors, light sensors, temperature sensors, direction sensor, gyroscope and acceleration sensors. Out of these sensors, accelerometer and gyroscope are most widely used sensor for human activity recognition. In this paper we used publicly available MobiActdata for human activity recognition. In data preprocessing step we have applied fast Fourier transformation. Then we have extracted some features from the dataset and after that we have used support vector machine-based classification to classify human activities. This proposed method has given very promising results forhuman activities classification.

Keywords: Human activity recognition, Accelerometer, SVM.

CONVOLUTIONAL NEURAL NETWORK BASED CLASSIFICATION METHOD FOR THE ALZHEIMER'S DISEASE DETECTION

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The dementia is a global issue and that the effects of the future epidemic will be felt predominantly in low and middle-income countries. Alzheimer's disease (AD) is the most common form of dementia affecting seniors age 65 and over. Early detection of AD is important for the management of disease.

In this study, the ADNI (Alzheimer's Disease Neuroimaging Initiative) MRI data was accessed and store in the database and data pre-processing technique was used for removing non-relevant information and for better interpretation. The image segmentation methods were applied on image data to extract the different features of the data. The attributes such as surface, perimeter, mean, standard deviation, height, 28 horizontal distances etc were extracted from the data and finally, convolutional neural network (CNN) based classification method was applied on extracted data to verify feasibility the classifier. The result reveal that the CNN based classification method classify data 90% correctly, it shows better than support vector machine (SVM and) KNN (K- Nearest Neighbour) based classification methods.

Keywords: Alzheimer disease, classification, MRI data, Convolutional neural network (CNN), Image processing.

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PERFORMANCE COMPARISON OF VANET ROUTING PROTOCOLS: A PERSPECTIVE APPROACH

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Vehicular adhoc network (VANET) is an emerging technology, which gain importance since last few years. VANETs have some unique characteristics which makes it different from other adhoc networks. With the growing number of vehicles, risk of accidents, traffic congestion, poor traffic management is increasing day by day. Vehicular adhoc networks are able to cope up with these problems. Vehicular adhoc networks are those network, which allows vehicles to transmit useful and safety information to another vehicle. There are various characteristics of vehicular adhoc networks like highly dynamic topology, frequently disconnected networks, unlimited power backup, unbound network size etc. Due to these unique characteristics of VANET, it is very difficult to design routing protocols for data transfer.

There wide variety of routing protocols in VANET. These routing protocols can be broadly divided into two categories (1) proactive protocol and (2) reactive protocols. In this paper we have compared various reactive and proactive routing protocols based on their performance metrics.

Keywords: VANET, Routing protocols, Reactive protocols, Proactive protocols**.**

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MISSING VALUES TREATMENT IN KNOWLEDGE DISCOVERY PROCESS

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Presence of missing values is one of the major issues in data mining that causes poor quality of knowledge mined. Many of imputation approaches have been proposed so far to treat the missing values. One of the most common methods to replace the missing values is the mean method of imputation. Regression analysis is one of the commonly used methods in statistics to find missing values based on variable's relationships to each other that inherent in the data set. In this paper we proposed an imputation approach to impute the missing data in database, by using the concept of regression analysis. The given numerical illustration and empirical study shows that the proposed approach is very effective for missing data treatment in knowledge discovery process.

Keywords: Knowledge Discovery, Data mining, Big data, Missing values, Information Retrieval.

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DETERMINANTS MEASURING BRAND PERCEPTION; AN EMPIRICAL STUDY

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The objective of the study is to understand the variables in building customers perception and quality preferences towards brand name and to establish the relationship between consumer's preference and the brand. The research design used in this study is descriptive and exploratory in nature. The survey method with a pre- designed structured questionnaire was used to collect data from the sample. The sample size of present study was 230 consumers who buy branded products in Indore. The collected data includes demographic details, consumer opinion and services provided in the retail stores. Statistical software SPSS 17 and MS excel were extensively used for analyzing the data collected. The results of the study shows that the most preferred factor in the brand perception is Brand Prominence which includes Brand loyalty, Availability and name influence a company must focus on these elements to make a brand grow stronger and makes its place in the market an gain more customers.

Keywords: Brand name, Quality preferences, Customer perception.

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PREDICTING MALIGNANCE USING COLLABORATIVE LEARNING WITH PARTICLE SWARM OPTIMIZATION (PSO) TECHNIQUE.

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Malignance is a group of ailments involving abnormal cells, having the potential of occupying the body. Breast malignance is the next prime reason of death among females. This study involves a method for 5-year breast malignance recurrence prediction. Characteristics of 63 breast malignance patients were examined and different features were selected with structural equation modeling software AMOS. Collaborative learning is done by refinement of Particle Swarm Optimization (PSO).PSO algorithm identified the accurate combination of categorial features and measurement- scale weight. The selected features were, lump size, surgery type, lymph bulgecontribution ratioand diagnosis age. This algorithm could be a hopeful tool for the breast malignance recurrence prediction.

Keywords: Breast Malignance, Malignance recurrence, Structural Equation Model (SEM), Particle Swarm Optimization (PSO).

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SURVEY ON DEEP LEARNING METHODS FOR FIRE AND SMOKE DETECTION

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Research on video-based smoke detection has become the topic of interest in computer vision. The recent advances in image processing have led the vision based systems to detect fire during surveillance using convolutional neural networks (CNNs).This paper aims to summarise the state-of-the-art in deep learning for computer vision, and accelerate further study in the area of smoke detection. For this purpose, we present an analytical framework to classify and to evaluate these methods based on some important functional measures. Furthermore, a categorisation of the state-of-the-art approaches in deep learning for fire and smoke detection is presented. The authors summarise the significantly related works in each approach and discuss their performance.

Keywords: Surveillance, Deep learning, CNN, Smoke detection, Classification.

HEALTHCARE DIAGNOSIS SYSTEM USING MACHINE LEARNING TECHNIQUE: A REVIEW

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Now a day many of people are not giving time in health related issues which causes the problem of various diseases and affect the health related problem in human being. In our country, many of people are facing different types of diseases because of lack of environmental sanitation and safe drinking water, under-nutrition, poor living condition and limited access to preventive and curative health services. Some of the reasons like as lack of education, under inequality and explosive growth of population contribute to increasing problem of disease. In this research work studied about various diagnosis system developed by different researchers which is helpful for identifying and diagnosis of various diseases. There are different authors have developed different healthcare diagnosis system using different machine learning techniques and compared the performance with exiting statistical techniques. Machine learning techniques are very helpful for analysis and diagnosis of health condition and capable for classification or prediction of several symptoms of disease.

Keywords: Healthcare, Classification, Machine Learning Technique.

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BIG DATA CONCEPT, CHALLENGES AND APPLICATION

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Now a day's Big Data is innovative and challenging issues in the field of research. Big Data uses some approaches like collection of data, analyzing the data, filtering and storing the data. Big Data is a collection of huge amount of data where nature of data are different format like structured, semi structured and unstructured. The size or quantities of the data are growing in millions or billions day by day because millions or billions of people uses different sources to generate the data. There are various sources of Big Data like tweets on twitter, comments and posts on Facebook, posting images or video in Instagram, Sensex and shopping mall etc. Basically three complexities in Big Data like velocity, volume and variety where

velocity means generate the data with very high speed, volume means storing high dimensional of data and variety means format of data is different.

In this research work we have explored the overview of Big Data and also focused on the dimension reduction technique on Big Data. Big Data technique is basically used for time reduction and cost reduction at the time of analyzing and visualizing the huge amount of data. Today the various organizations using the Big Data concept for decision making or analyzing customer behaviors and demands and it is very big problem to always analyze the type of data entered by the user. The main problem with the organization is that, they don't know the benefits of the Big Data and don't know the proper implementation of the Big Data. We have also focused one of the important Hadoop data analysis tool for analysis of high dimensional data like terabyte or petabyte. The main challenges with the Big Data is security, managing data, privacy, and to preserve from misuse of data. It is also required to use encryption technique for protecting the Big Data. Big Data analysis uses in the field of Healthcare, Finance, Telecom Industry, social networking sites for Data Visualization, Integration, and Fraud Detection. Big Data is also used some technology like cloud computing, mobile networking, internetworking to manage and analyzing data.

Keywords: Big Data, Hadoop, Dimensional Reduction.

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CHALLENGES AND NEED OF BIG DATA ANALYTICS

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Now days it is very essential to analyze conditions as well as probabilities in each and every field. We are getting information from various sites and systems about our requirements and through this information we can reach to achieve our goals. Big data analytics plays an important role for this, where we can implement different tools and techniques to analyze data collected from various sources. In the field of medical science observations and data of any patient is highly sensitive and necessary to provide better treatment and solutions. Area of defense requires data about any particular place to operate their drones efficiently. Stock exchange is a place where financial risk can take place. Various fields are available from where we can collect and analyze data to provide better solutions.

Keywords: Big Data, Analytics, Healthcare, Predictive analytics.

PERFORMANCE EVALUTION OF AODV PROTOCOL IN SECURITY ISSUES OF MANET MINING

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Mobile Ad-hoc network (MANET) is an infrastructure less network with mobile nodes. The nodes dynamically form a temporary network for the transmission of data from source to destination. MANET Mining discovers the hidden relationship among the nodes, even though they are independent of each other. Key management is one of the challenging security problems in MANET. There are many routing protocols in MANET mining. AODV (Ad-hoc On-Demand Distance Vector) is a reactive routing protocol and establishes a route to a destination only on demand. In this paper we have discussed the performance of AODV as secure protocol in MANET mining. In first section of paper introduction of AODV, MANET mining and securities issues. In second section working of AODV, next methodology then result and analysis and finally conclusion.

Keywords: MANET, Mining, AODV.

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RANDOM CHAINED HEXI CODE (RCHC) SIGNATURE SCHEME FOR CODE-BASED CRYPTOGRAPHY

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A digital signature is used for the authenticity of digital messages or information. It is a Mathematical scheme and provides added assurances of the evidence to provenance, identity, and status of an electronic document. This paper presents a digital signature scheme known as Random Chained Hexi Code (RCHC) signature scheme. This scheme is variant of BCHS2 signature scheme, which is based on BCH signature scheme presented by Hamdi et al. in 2006. Our scheme presents a fast, secure and short signature scheme with a small public key size as compared with the signature schemes based on BCHS2 and McEliece cryptosystem. Also, the proposed scheme is analyzed against known attacks on the Random Chained Hexi Code (RCHC) signature scheme for different hexi polynomial codes.

Keywords: McEliece cryptosystem, Hexi codes, Hexi polynomial Codes, Hexi McEliece public key cryptosystem, RHCE scheme, Digital signature, BCHS2 signature scheme, BCH codes.

AN EFFICIENT, SECURE AND AUTHENTICATED GROUP KEY TRANSFER PROTOCOL USING CIRCULANT MATRICES

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To improve the robustness of the key management systems, many efficient group key transfer(GKT) protocols based on secret sharing scheme(SSS) has been studied extensively. But in many conventional GKT protocols, to generate and recover the secret group key, key generation center(KGC) and each group member needs to compute a t-degree interpolating polynomial. Recently in 2016, Hsu et al. gave a new and efficient GKT protocol. In their scheme information related to group key was hidden using Vandermonde matrix and to distribute the group key efficiently they employed linear secret sharing scheme on Vandermonde matrix. Inspire from Hsu et al. in this paper we present an efficient, secure and authenticated GKT protocol based on SSS using circulant matrices. Because of using circulant matrices from the point of communication and computational complexity, our protocol becomes more efficient and robust. Also our proposed protocol can resist all the potential security attacks.

Keywords : Circulant matrices, Computation efficient, Group key transfer protocol, Secret sharing.

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HOW TO TACKLE THE PROBLEM OF POVERTY IN THE CURRENT SCENARIO: A STUDY

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Poverty is one of the main issues, attracting the attention of sociologists and economists. It indicates a condition in which a person fails to maintain a living standard adequate for a comfortable lifestyle.

Though India boasts of a high economic growth, it is shameful that there is still large scale poverty in India. According to a new Oxford University study, 55 percent of India's population of 1.1 billion, or 645 million people, are living in poverty. Using a newly-developed index, the study found that about one-third of the world's poor live in India. Nearly 75% of the poor people are in rural areas, most of them are daily wagers, landless labourers and self employed house holders. This Paper investigated the various causes of poverty in India and various steps taken by the Government of India to reduce Poverty.

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STUDY ON THE IMPACT OF ICT ON E-GOVERNANCE AND ITS SERVICE DELIVERY FOR RURAL DEVELOPMENT IN SATNA DISTRICT OF MADHYA PRADESH

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Information and communication Technology (ICT) has been changed the face of traditional government. By the use of ICT can change our government into electronic governance (E-governance) and Government of India had launched the massive Digital India program and also provides the various services and facilities to various departments and all customers also. ICT has been used in different departments of government like in agriculture department to make financial system strong, in healthcare department for easily curing the peoples, in education department for knowledge, in rural development for citizen responsiveness, in women & child development for women empowerment. There are lots of problems faced by the government on implementing the policies on rural area. ICT treat as an activator for activating various administrative transformations. We observe various ICT based problems for limited participation of rural people in e-governance schemes in Satna district. We use Questionnaires as the main tools for primary data collection from the various sectors of Government schemes. In this paper discussed the impact of ICT on E-governance for rural development on implementing the policies and also define the services provides by our government to all the peoples.ICT revolutionized our country to the digital era and the economy also move towards the cashless economy.

Keywords: ICT, E-governance, Services of ICT, Challenges for E-government.

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MULTIPLE ACCESS METHODS IN MOBILE COMMUNICATION : A REVIEW

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In mobile communication there are various generations in which we are using different multiple access techniques. In first generation we used frequency division multiple access (fdma). In second and third generation of mobile communications time division multiple access (tdma) and code division multiple access (cdma) used as multple access technique. In 4g , ofdma has been used as as multple access technique. In this paper we have discussed different multiple access methods used in different generations.

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A SURVEY OF FREQUENT SUBGRAPH MINING ALGORITHMS AND METHODOLOGIES

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Graphs are the pictorial representation of the dataset available in the real world. Graph mining is the problem of finding frequent subgraphs from a single large graph or from a database of many graphs. A subgraph is said to be frequent in an input graph, if it has a support larger than or equal to a user-defined threshold. Support can be defined as the number of subgraphs in the database. Frequent subgraph mining (FSM) is very important for analyzing the graph data. FSM is a very difficult task because of the two reasons. The first one is generation of candidate subgraphs which is an NP-Complete problem and the second one is the computation of support for each candidate subgraph. This paper mainly focuses on the survey of algorithms, techniques and applications of the frequent subgraphs.

Keywords: Algorithm, Frequent sub graph, Graph mining, Support.

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DEMOGRAPHIC VARIABLES AS PREDICTOR OF ORGANIZATIONAL LEARNING: A STUDY IN MANUFACTURING SECTOR

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In today's world of speed and technology, organizations need not only latest technology and infra-structure to compete, human resource too become equally important for them to meet the targets. Efficiency of human resource besides other factors also depend on its capacity to learn and transfer that knowledge on job leading to organizational learning (OL).Review of literature reveals that in context of human resource, studies have been conducted on role of motivation, personality traits self-efficacy etc. but there is scarcity of research on demographic variables influencing OL. The present paper aims at identifying demographic predictors for organizational learning phases, i.e. innovation, implementation and stabilization. Demographic variables studied were education; hierarchy; total work experience and experience in present organization; travelling in India (for - education, employment and official trips) and abroad (for motives like- education, employment and official trips).500 employees from large scale heavy industry of Chhattisgarh state were selected. Random sampling method was used. Correlation revealed a significant positive relationship between all three phases of organizational learning and education, travelling in India for education and abroad for employment. Hierarchy was significantly negatively correlated with all the three phases. Besides this, innovation was significantly positively correlated with travelling for education and official trips in India. Implementation shared a significant positive relationship with travelling for education in India. Stabilization shared a significant positive relationship both with total work experience and experience in present organization; travelling in India for employment and official trips and abroad for education. Hierarchical multiple regression was used to find predictors of OL. Results revealed that travelling for education in India was a significant predictor for innovation phase and travelling for employment in India was a significant predictor for stabilization phase. Significant common predictors for all three phases were education, hierarchy, and travelling for employment to foreign land. This study indicates that management at all levels should overcome status quo and focus on innovation and following phases. Employees should enrich themselves with travelling which is a new dimension studied in relation to organizational learning. This study was confined to heavy manufacturing sector only so results have limited generalization.

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MINING ON REAL TIME BIG DATA

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In real time data there are various areas such as business, Business intelligence, analytics and data warehouse technologies are used to support strategic and optimum decision-making. These technologies provide users the ability to access large volumes of business data and thus visualizing results. Systems are limited by the underlying data management infrastructure, which is nearly always based on periodic batch updates, causing the system to lag real-time by hours and often a full day and usually require pull-based querying, so new results are provided and submitted only when a client requests them. However, as the need for real time data started increasing, this inability to work on real time data starting becoming a major cause of concern for companies. This was when the need for a framework arose that could handle real time processing of data.

In the data stream model data arrive at high speed and algorithms that process the must do under very strict constraints of space and time consequently data stream pose several challenges for data mining algorithms design.

Big Data is a new term used to identify the datasets that due to their large size and complexity, we cannot manage them with our current methodologies or data mining software tools. Big Data mining is the capability of extracting useful information from these large datasets or streams of data, that due to its volume, variability, and velocity, it was not possible before to do it. The Big Data challenge is becoming one of the most exciting opportunities for the net years. We present in this issue, a broad overview of the topic, its status, controversy, and forecast to the future. We introduce four articles, written by inertial scientists in the covering the most interesting and state-of-the-art topics on Big Data mining.

Keywords: Big Data, Challenges, Data Mining, Real Time, Data Stream.

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PREPARATION OF HERBAL SOAP BY USING GUAVA LEAVES EXTRACT AND STUDY THEIR PROPERTIES & APPLICATIONS

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Soaps are the sodium salts or potassium salts of stearic acids or any other fatty acids. They are prepared by the saponification process, which is, reacting the oil which contains triglycerides with Caustic soda (NaOH) to give the soap. However different oils have different composition of fatty Acids which are responsible for different properties of soaps made out of them. In the present work we have prepared total five numbers of Herbal Soaps by using Guava leaves extract and 5 different types of oils (Coconut, Teel, Olive, Mustard and Sunflower). In this process we have used turmeric, indigo, milk powder, henna and coffee powder as a colouring agent and Lemon grass leaves extract as a flavouring agent. After preparation of soaps we have also study different properties of all prepared soap samples such as foaming capacity, yield percentage, lathering power, cleansing power, hardness and moisture content of samples. Addition to above properties we were also analyzed saponification number, iodine number, acid value and antibacterial properties of prepared soaps. After analysis of all the properties of prepared soap samples we find that the soap prepared with Coconut oil is best among them and soap with Sunflower oil is poor quality. It has been also concluded that due to anti bacterial properties of guava leaf extract prepared soaps can be used for washing wounds.

Keywords: Herbal soap, Guava leaves, Antibacterial properties.

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PREVENTING INSIDER THREATS IN ORGANISATION THROUGH "GOVI" ADDRESSING FRAMEWORK

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Security is omnipresent. With the rise of digitalization, we have to protect our organization's data which contain confidential information. Threats can be from inside the organization or outside the organization. Insider can pose a real danger to company networks.

So basically insider threat is caused by someone who is working in the organisation and has access to some critical information which can be further exploited.

This research includes a methodology, which helps the Organization to be secured against Insider Threats and Cybersecurity Risks within any organization. It will protect your confidential data from being compromised by your own employees and gain maximum insights and also monitor and improve productivity of your employees by keeping a track on work activities during the work hours.

It discovers if an employee is working in the right direction or just doing some non-required task on the system and wasting the resources of organization. It will check for violation, initial steps of known crimes like cyber terrorism, malware spreading etc. The user access applications could be monitored with the proper timestamp in the database and an analysing mechanism should be used to tell the possibility of threat to the organisation to some extent.

Keywords: Insider threats, Information Security, Business Critical Infrastructure Security, Cyber Risks Detection, Cyber Risks Analysis, Cyber Terrorism.

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ANALYSIS OF VARIOUS METHODS AND TECHNIQUES FOR TRAFFIC MANAGEMENT

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The problem of traffic congestion on roads is one of the 10 biggest problems faced by civilizations today. Traffic congestion is a problem faced not only by developed countries but it extends its root to developing countries too and the effects of it are worth considering as traffic congestion in metro cities leads to another major ever increasing problem i.e. pollution. Traffic congestion causes air and noise pollution, long delays leaving people frustrated and agitated. The ever increasing number of vehicles on road and the limited technology has led to increase in this problem. The most basic techniques implemented in the most countries still are automatic traffic lights and traffic police officers managing traffic on road but these have been rendered inefficient with the increase in traffic, which led the governments to find alternative solution to the problem. Different countries are coming up with various solutions to manage traffic more efficiently and effectively such as wireless techniques, using sensors, traffic lights implementing Artificial intelligence, Car-to-Car communications, Image processing, live video monitoring etc. This paper presents a deep analysis of various methods and techniques used in traffic management systems. will be discussing in details on the various techniques that have been developed to manage traffic or are still in the phase of development. Today an efficient traffic management system is the need of the hour to support the ever growing vehicles on our roads.

Keywords: Traffic Congestion, Automatic Traffic Signals, Wireless network using sensors, Artificial intelligence based traffic lights, Image processing, Live video monitoring.

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AN APPROACH TO ANALYZE THE SPREAD OF FAKE NEWS ON SOCIAL MEDIA

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In this study we will investigate how fake news or fake post is shared on a social media platform, can be automatically identified. Using different attributes of the sender we can digitally sign all the content provided by the user like device Mac Address in case of smart devices we can use the device's Unique Identification Number. To verify the contents is coming from the particular user we will use the Public key of the user to identify it, Public keys of all the users will be distributed when the users register on his device. So, we can identify the particular data is coming out of the particular user and that's how we can help the law enforcement agencies to find and analyze the fake news and thus will help prevent the spreading of fake news that creates the socio-legal unrest.

Keywords: Fake News, Message Trail, Digital Signature, MAC Address, Public Key, Private Key.

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TRADITIONAL VERSUS ICT BASED TEACHING AND LEARNING IN HIGHER EDUCATION INSTITUTIONS : AN ANALYSIS

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The traditional way of Teaching-Learning has its own benefits and are still very powerful and popular technique, on the other hand entire Teaching-Learning process of higher education is being shifted from traditional to Information and Communication Technology (ICT) based Teaching-Learning. Recently many initiatives have been taken by Government of India (GoI) like Study Webs of Active Learning for Young Aspiring Minds (SWAYAM), NPTEL etc., to promote ICT based Teaching-Learning specially in higher education institutions and has its own benefits popularly known as “any where any time” and also provides interactive way of Teaching-Learning and becoming popular among the students and faculty members inspite of having lack of ICT infrastructure and good internet connectivity specially in rural and remote areas of the country.

Keywords: Information and Communication Technology (ICT), Study Webs of Active- Learning for Young Aspiring Minds (SWAYAM), Teaching-Learning.

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