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Comparative Genomics of Ten Solanaceous Plastomes  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4248371/>

Mr. Harpreet Singh

Advances in Bioinformatics  
[https://mjcl.clarivate.com/search-results?issn=1687-8027&hide\\_exact\\_match=fl=true&utm\\_source=mjl&utm\\_medium=share-by-link&utm\\_campaign=search-results-share-this-journal](https://mjcl.clarivate.com/search-results?issn=1687-8027&hide_exact_match=fl=true&utm_source=mjl&utm_medium=share-by-link&utm_campaign=search-results-share-this-journal)

The screenshot shows the PubMed article page for the paper 'Comparative Genomics of Ten Solanaceous Plastomes'. The page includes the following information:

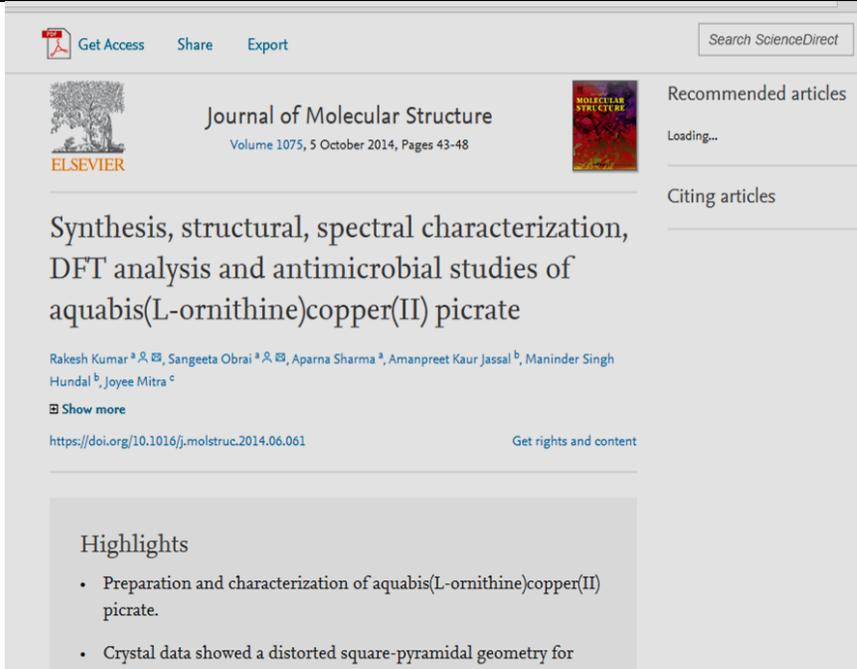
- Journal List:** Adv Bioinformatics > 2014: 2014 > PMC4248371
- PMCID:** PMC4248371
- PMID:** 25477958
- Published online:** 2014 Nov 17. doi: 10.1155/2014/424873
- Authors:** Harpreet Kaur, <sup>1</sup> Bhupinder Pal Singh, <sup>1</sup> Harpreet Singh, <sup>2</sup> and Avinash Kaur Nagpal <sup>1, \*</sup>
- Associated Data:** Supplementary Materials
- Abstract:** Availability of complete plastid genomes of ten solanaceous species, *Atropa belladonna*, *Capsicum annuum*, *Datura stramonium*, *Nicotiana sylvestris*, *Nicotiana tabacum*, *Nicotiana tomentosiformis*, *Nicotiana undulata*, *Solanum bulbocastanum*, *Solanum lycopersicum*, and *Solanum tuberosum* provided us with an opportunity to conduct their *in silico* comparative analysis in depth. The size of complete chloroplast genomes and LSC and SSC regions of three species of *Solanum* is comparatively smaller than that of any other species studied till date (exception: SSC region of *A. belladonna*). AT content of coding regions of *A. belladonna* is less than noncoding regions. A duplicate copy of *trnH* gene in *C. annuum* and two alternative rRNA genes for proline in *D. stramonium* were observed for the first time in this analysis. Further, homology search revealed the presence of *rps19* pseudogene and *infA* genes in *A. belladonna* and

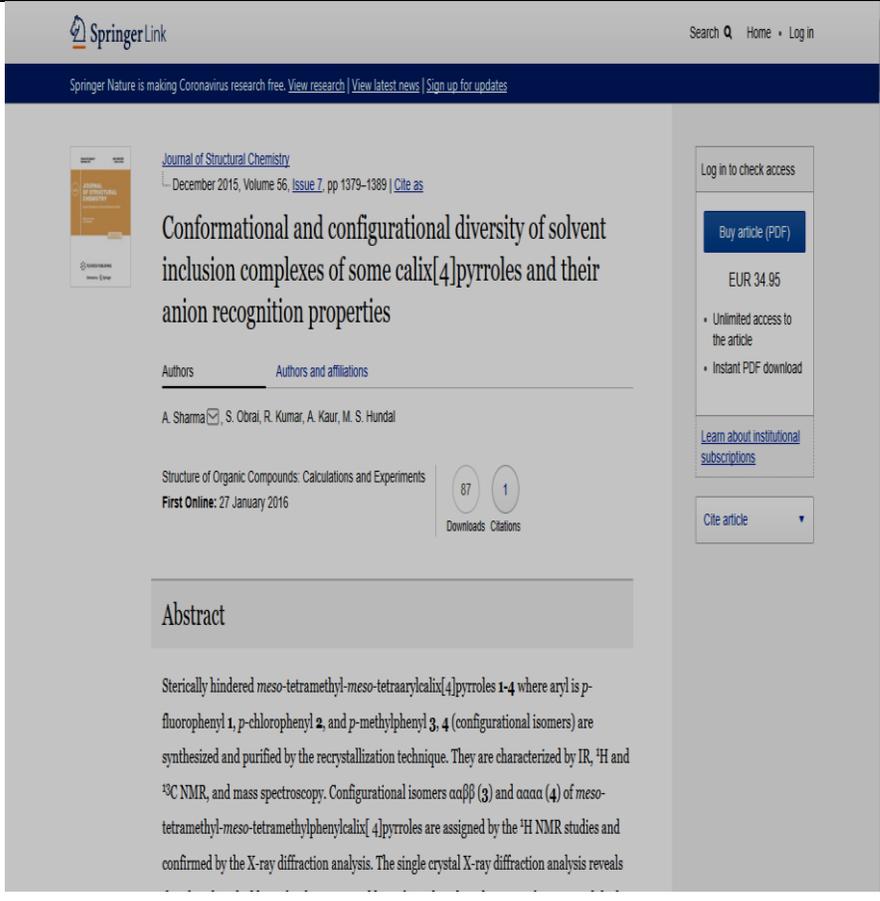
2	<p>Role of Brassinosteroids in Osmolytes Accumulation under Salinity Stress in <i>Zea mays</i> Plants</p> <p><a href="https://pdfs.semanticscholar.org/17d1/5f4dfe6d8791d634633df6860a1328a7cb1f.pdf">https://pdfs.semanticscholar.org/17d1/5f4dfe6d8791d634633df6860a1328a7cb1f.pdf</a></p>	Dr. Nitika Arora	International Journal of Science and Research	<p style="text-align: center;">International Journal of Science and Research (IJSR) ISSN (Online): 2319-7064 Impact Factor (2012): 3.358</p> <p style="text-align: center;"><b>Role of Brassinosteroids in Osmolytes Accumulation under Salinity Stress in <i>Zea mays</i> Plants</b></p> <p style="text-align: center;">Amandeep Rattan<sup>1</sup>, Nitika Kapoor<sup>2</sup>, Renu Bhardwaj<sup>1</sup></p> <p style="text-align: center;"><sup>1,2</sup>Department of Botanical and Environmental Sciences, Guru Nanak Dev University, Amritsar, Punjab, India</p> <p style="text-align: center;"><sup>2</sup>PG Department of Botany, Hans Raj Mahila Maha Vidyalaya, Jalandhar, Punjab, India</p> <p><b>Abstract:</b> <i>The accumulation of osmoprotectants is a typical response to salt stress which enables the plants to grow under stress conditions. These are the nontoxic osmoprotectants that are collectively known as compatible solutes. Brassinosteroids (BRs) are the steroidal plant hormones which influence number of physiological and morphological processes in plants and play diverse role in plant growth and development. The present work was conducted to study the effect of 28-homobrassinolide (HBL) and 24-epibrassinolide (EBL) on osmolytes (proline, glycine betaine, mannitol and total sugars) content of 30 and 60 days old plants of Zea mays subjected to salt stress (0, 40, 60, 80, 100 mM). The seeds of Zea mays var. DKC 9106 were pre-soaked in different concentrations of HBL (10<sup>-10</sup>, 10<sup>-8</sup>, 10<sup>-6</sup> M) and EBL (10<sup>-10</sup>, 10<sup>-8</sup>, 10<sup>-6</sup> M) for 12 hours. Finding of present study revealed that application of HBL and EBL both enhanced the osmolytes accumulation in salt stressed plants of Zea mays which was found to be provide tolerance against salinity stress.</i></p> <p><b>Keywords:</b> Brassinosteroids, Osmolytes, Salt stress, Maize</p> <p><b>1. Introduction</b></p> <p>Plants as a sessile organism, often exposed to various abiotic and biotic stresses like salinity, drought, flooding, high or low temperature, UV-radiations, herbicides, metal toxicity and pathogen, which adversely affected the crop production and yield [1, 2]. Among these salinity stress is a major constraint to agricultural yield and production. Salinity at higher levels affects the plants growth by causing hyperosmotic and hyperionic stress. Hyperosmotic stress reduced the water absorption capacity of root systems and increased the loss of water from the leaves which results in</p> <p>BRs are the first natural steroidal plant hormones having growth promoting activity [13]. It has ability to conquer the various environmental stresses such as thermal, drought, heavy metals, infection, pesticides and viruses including salt stress by activating the different mechanism [14, 15, 16, 17, 18, 19, 20, 21]. BRs regulate various physiological processes such as cell differentiation, cell elongation, pollen tube development, differentiation of vascular bundles and enhancement of enzymatic and photosynthetic activities [22].</p> <p>The present study was undertaken to study the effect of HBL</p>
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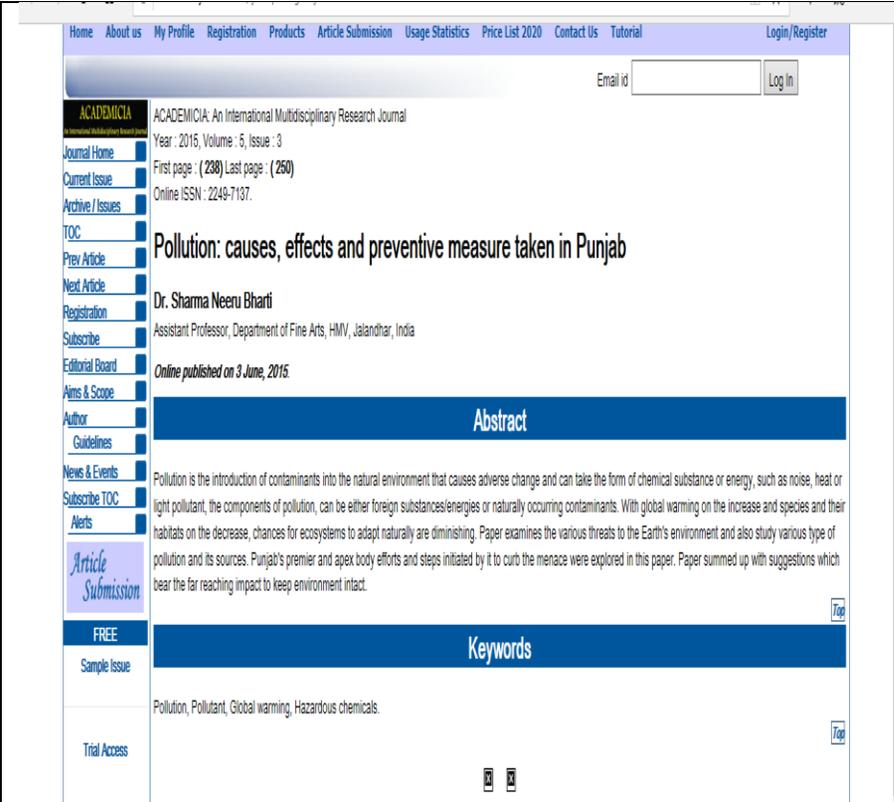
3	<p>Application of Brassionsteroids Reverses the Inhibitory Effect of Salt Stress on Growth and Photosynthetic Activity of <i>Zea mays</i> Plants</p> <p><a href="https://www.researchtrend.net/ijtas/ijtas_2013/4%20AMandEEP%20RATTAN.pdf">https://www.researchtrend.net/ijtas/ijtas_2013/4%20AMandEEP%20RATTAN.pdf</a></p>	Dr. Nitika Arora	International Journal of Theoretical & Applied Sciences	<div data-bbox="1268 201 1325 253" style="text-align: center;"> </div> <p style="text-align: center;">International Journal of Theoretical &amp; Applied Sciences 6(2): 13-22(2014)</p> <p style="text-align: right;">ISSN No. (Print): 0975-1718 ISSN No. (Online): 2249-3247</p> <p style="text-align: center;"><b>Application of Brassionsteroids Reverses the Inhibitory Effect of Salt Stress on Growth and Photosynthetic Activity of <i>Zea mays</i> Plants</b></p> <p style="text-align: center;"><i>Amandeep Rattan*, Dhriti Kapoor*, Nitika Kapoor** and Renu Bhardwaj*</i></p> <p style="text-align: center;"><i>*Department of Botanical and Environmental Sciences, Guru Nanak Dev University, Amritsar, (PB), India</i> <i>**PG Department of Botany, Hans Raj Mahila Maha Vidyalaya, Jalandhar, (PB), India</i></p> <p style="text-align: center;"><i>(Corresponding author: Renu Bhardwaj)</i> <i>(Received 26 June, 2014, Accepted 24 July, 2014)</i></p> <p><b>ABSTRACT:</b> The present study was conducted to investigate the effect of 28-homobrassinolide (HBL) on growth and photosynthetic activity of <i>Zea mays</i> plants (30 and 60 dayold) subjected to different NaCl concentration (0, 40, 60, 80,100 mM). The parameters examined were growth (root length, shoot length, number of leaves), photosynthetic pigments (chlorophyll a, chlorophyll b, total chlorophyll, carotenoid, anthocyanin and xanthophyll content) and gaseous exchange parameters (photosynthetic rate (A), stomatal conductance (gs), intercellular CO<sub>2</sub> concentration (Ci), transpiration rate (E) and water use efficiency (A/E). The result of present study revealed that growth and photosynthetic activity was reduced under salinity stress whereas the treatment of HBL reversed the inhibitory effects of salt stress by improving the growth and photosynthetic activity.</p> <p><b>Keywords:</b> 28-homobrassinolide, salt stress, maize, photosynthesis.</p> <p><b>1 INTRODUCTION</b></p> <p>Maize is the important cereal crop which fulfills the need of food and oil for human intake. It is also used as feed for livestock [1], throughout the world but the production and yield of this crop has been adversely affected due to salt stress as it is a major constraint to this crop. Salt stress causes worldwide huge loss in agricultural yield and production. Out of world's 5.2 billion ha of dryland, 3.6 billion ha land already suffers from the salt stress which is its foremost issue of concern [2]. The most prominent symptom of salinity stress is the plant growth reduction. Salt stress affects the plant growth and development by interfering with the normal physiological processes especially the photosynthesis</p> <p>conductance, CO<sub>2</sub> availability and photosynthetic enzyme activity [6-8]. Brassinosteroids (BRs) are the plant-specific polyhydroxylated steroidal hormones which regulate a broad range of physiological processes and various aspects of plant growth and development, such as vascular system differentiation, cell division and elongation, and sex determination [9]. Among various diverse roles, BRs play important role in regulation of photosynthesis in plants. BRs application improved the photosynthetic rate under different abiotic stresses has been reported in various crops i.e. mustard [10], mung bean [11], wheat [12], eggplant [13] and cucumber [14]. Therefore the aim of present study was to investigate the effect of BRs on growth and</p>
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4	<p>24-Epibrassinolide Mediated Changes in Photosynthetic Pigments and Antioxidative Defence System of Radish Seedlings under Cadmium and Mercury Stress</p> <p><a href="https://cyberleninka.ru/article/n/24-epibrassinolide-mediated-changes-in-photosynthetic-pigments-and-antioxidative-defence-system-of-radish-seedlings-under-cadmium-and/viewer">https://cyberleninka.ru/article/n/24-epibrassinolide-mediated-changes-in-photosynthetic-pigments-and-antioxidative-defence-system-of-radish-seedlings-under-cadmium-and/viewer</a></p>	Dr. Nitika Arora	Journal of Stress Physiology & Biochemistry	<p><i>Journal of Stress Physiology &amp; Biochemistry</i>, Vol. 10 No. 3 2014, pp. 110-121 ISSN 1997-0838 Original Text Copyright © 2014 by Kapoor, Rattan, Gautam, Kapoor and Bhardwaj</p> <p><b>ORIGINAL ARTICLE</b></p> <p><b>24-Epibrassinolide Mediated Changes in Photosynthetic pigments and Antioxidative Defence System of Radish Seedlings under Cadmium and Mercury Stress</b></p> <p>Dhriti Kapoor, Amandeep Rattan, Vandana Gautam, Nitika Kapoor and Renu Bhardwaj*</p> <p><i>Department of Botanical &amp; Environmental Sciences, Guru Nanak Dev University, Amritsar 143005 (Punjab), India</i></p> <p>*E-Mail: <a href="mailto:renubhardwaj82@gmail.com">renubhardwaj82@gmail.com</a></p> <p>Received March 26, 2013</p> <p>The present work was conducted to study the effects of 24-EBL on photosynthetic pigments (total chlorophyll, chl a, chl b, carotenoid, anthocyanin and flavonoid content) and activities of antioxidative enzymes (guaiacol peroxidase, catalase, superoxide dismutase, ascorbate peroxidase, glutathione reductase, dehydroascorbate reductase, mono-dehydroascorbate reductase, polyphenol oxidase, glutathione peroxidase and glutathione-S- transferase and protein content) in 7-day old seedlings of <i>Raphanus sativus</i> exposed to cadmium and mercury toxicity. Findings of present study were revealed that brassinolide was proved beneficial for amelioration of Cd and Hg stress by altering various metabolic processes of plant.</p>
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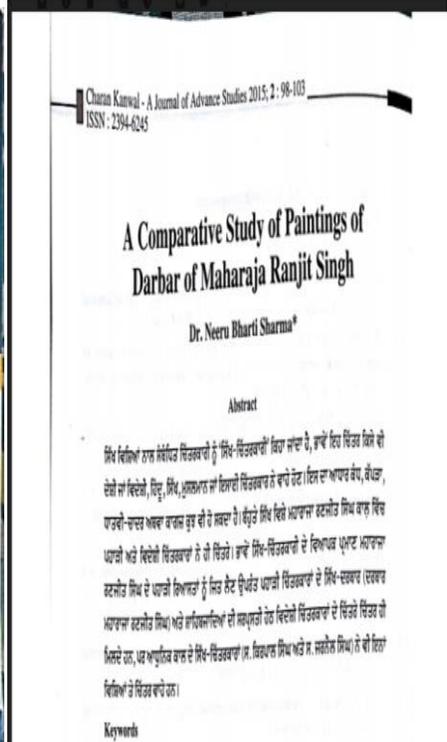
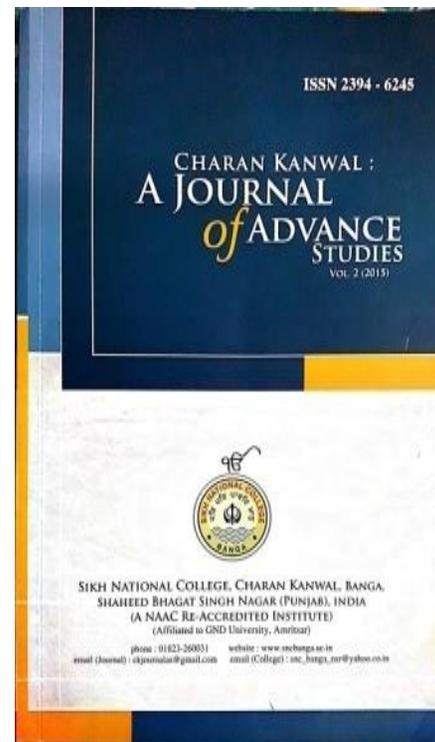


6	<p>Synthesis, Structural, Spectral Characterization, DFT Analysis and Antimicrobial Studies of Aquabis (L-ornithine)Copper (II )Picrate</p> <p><a href="https://www.researchgate.net/publication/263930683_Synthesis_structural_spectral_characterization_DFT_analysis_and_antimicrobial_studies_of_aquabisL-ornithinecopperII_picrate">https://www.researchgate.net/publication/263930683_Synthesis_structural_spectral_characterization_DFT_analysis_and_antimicrobial_studies_of_aquabisL-ornithinecopperII_picrate</a></p>	Dr. Aparna Sharma	<p>Journal of Molecular Structure</p> <p><a href="https://mjl.clarivate.com/search-results?issn=0022-2860&amp;hide_exact_match_fl=true&amp;utm_source=mjl&amp;utm_medium=share-by-link&amp;utm_campaign=search-results-share-this-journal">https://mjl.clarivate.com/search-results?issn=0022-2860&amp;hide_exact_match_fl=true&amp;utm_source=mjl&amp;utm_medium=share-by-link&amp;utm_campaign=search-results-share-this-journal</a></p>	 <p>The screenshot shows the article page on ScienceDirect. At the top, there are options for 'Get Access', 'Share', and 'Export'. The journal title 'Journal of Molecular Structure' is displayed, along with the volume and issue information: 'Volume 1075, 5 October 2014, Pages 43-48'. The article title is 'Synthesis, structural, spectral characterization, DFT analysis and antimicrobial studies of aquabis(L-ornithine)copper(II) picrate'. The authors listed are Rakesh Kumar, Sangeeta Obral, Aparna Sharma, Amanpreet Kaur Jassal, Maninder Singh Hundal, and Joyee Mitra. A 'Show more' button is visible. Below the article title, there is a 'Highlights' section with two bullet points: 'Preparation and characterization of aquabis(L-ornithine)copper(II) picrate.' and 'Crystal data showed a distorted square-pyramidal geometry for studied complex.' On the right side, there are sections for 'Recommended articles' (Loading...) and 'Citing articles'.</p>
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7	<p>Conformational and Configurational Diversity of Solvent Inclusion Complexes of some Calix[4]Pyrroles and their Anion Recognition Properties</p> <p><a href="https://www.researchgate.net/publication/291952380_Conformational_and_configurational_diversity_of_solvent_inclusion_complexes_of_some_calix4pyrroles_and_their_anion_recognition_properties">https://www.researchgate.net/publication/291952380_Conformational_and_configurational_diversity_of_solvent_inclusion_complexes_of_some_calix4pyrroles_and_their_anion_recognition_properties</a></p>	Dr. Aparna Sharma	<p>Journal of Structural Chemistry</p> <p><a href="https://mjl.clarivate.com/search-results?issn=0022-4766&amp;hide_exact_match_fl=true&amp;utm_source=mjl&amp;utm_medium=share-by-link&amp;utm_campaign=search-results-share-this-journal">https://mjl.clarivate.com/search-results?issn=0022-4766&amp;hide_exact_match_fl=true&amp;utm_source=mjl&amp;utm_medium=share-by-link&amp;utm_campaign=search-results-share-this-journal</a></p>	 <p>The screenshot shows the SpringerLink article page. At the top, it says 'Springer Nature is making Coronavirus research free. View research   View latest news   Sign up for updates'. The article title is 'Conformational and configurational diversity of solvent inclusion complexes of some calix[4]pyrroles and their anion recognition properties'. The authors listed are A. Sharma, S. Obral, R. Kumar, A. Kaur, and M. S. Hundal. The article is from the 'Journal of Structural Chemistry', December 2015, Volume 56, Issue 7, pp 1379-1389. It has 87 downloads and 1 citation. The abstract begins with 'Sterically hindered meso-tetramethyl-meso-tetraarylcalix[4]pyrroles 1-4 where aryl is p-fluorophenyl 1, p-chlorophenyl 2, and p-methylphenyl 3, 4 (configurational isomers) are synthesized and purified by the recrystallization technique. They are characterized by IR, <sup>1</sup>H and <sup>13</sup>C NMR, and mass spectroscopy. Configurational isomers αββ (3) and ααα (4) of meso-tetramethyl-meso-tetramethylphenylcalix[4]pyrroles are assigned by the <sup>1</sup>H NMR studies and confirmed by the X-ray diffraction analysis. The single crystal X-ray diffraction analysis reveals</p>
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8	<p>Pollution : Causes, Effects and Preventive Measures taken in Punjab</p> <p><a href="http://www.indianjournals.com/ijor.aspx?target=ijor:aca&amp;volume=5&amp;issue=3&amp;article=028">http://www.indianjournals.com/ijor.aspx?target=ijor:aca&amp;volume=5&amp;issue=3&amp;article=028</a></p>	Dr. Neeru Bharti Sharma	ACADEMICA- An International Multi-Disciplinary Research Journal	 <p>The screenshot shows the journal's website interface. At the top, there is a navigation menu with links like Home, About us, My Profile, Registration, Products, Article Submission, Usage Statistics, Price List 2020, Contact Us, Tutorial, and Login/Register. Below the menu is a search bar for email ID and a login button. The main content area displays the journal title 'ACADEMICA: An International Multidisciplinary Research Journal', the current year and volume (2015, Volume 5, Issue 3), and the article title 'Pollution: causes, effects and preventive measure taken in Punjab' by Dr. Sharma Neeru Bharti. The abstract section provides a detailed summary of the article, discussing the introduction of contaminants into the natural environment and the impact of global warming. The keywords section lists 'Pollution, Pollutant, Global warming, Hazardous chemicals'. The page also features a sidebar with various navigation options such as Journal Home, Current Issue, Archive/Issues, TOC, Prev Article, Next Article, Registration, Subscribe, Editorial Board, Aims &amp; Scope, Author, Guidelines, News &amp; Events, Subscribe TOC Alerts, Article Submission, FREE, Sample Issue, and Trial Access.</p>
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9	A Comparative Study of Paintings of Darbar of Maharaja Ranjit Singh	Dr. Neeru Bharti Sharma	Charan Kanwal : A Journal of Advance Studies
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10	<p>Impacts of Ethical Hacking</p> <p><a href="http://nebula.wsimg.com/e1076cfb3c73c538f705a5106975cc65?AccessKeyId=DFB1BA3CED7E7997D5B1&amp;disposition=0&amp;alloworigin=1">http://nebula.wsimg.com/e1076cfb3c73c538f705a5106975cc65?AccessKeyId=DFB1BA3CED7E7997D5B1&amp;disposition=0&amp;alloworigin=1</a></p>	Mrs. Ramandeep Kaur	International Journal of Research in Electronic and Computer Engineering	<p style="text-align: center;">IJRECE VOL. 2 ISSUE 4 OCT-DEC 2014 <span style="float: right;">ISSN: 2393-9028 (PRINT)   ISSN: 2348-2281 (ONLINE)</span></p> <h3 style="text-align: center;">Impacts of Ethical Hacking</h3> <p style="text-align: center;">Mr. Ravinder Mohan Jindal<sup>1</sup>, Mrs. Leekha Jindal<sup>2</sup>, Ramandeep Kaur<sup>1</sup>  <sup>1</sup>PG Dept. of Computer Science, HMV Jalandhar  <sup>2</sup>PG Dept. of Computer Science, DAV Jalandhar</p> <p><i>Abstract:</i> The status of security on the internet is bad and getting worse. One effect to this state of relationships is term as Ethical Hacking which attempts to increase security defense by identifying and patching known security vulnerabilities on systems owned by other party. As public and private organizations roam more of their serious functions to the Internet, criminals have more chance and reason to gain access to aware in order through the Web application. Thus the need of caring the systems from the irritation of hacking generated by the hackers is to endorse the persons who will punch back the illegal attacks on our computer systems. So, Ethical hacking is an evaluation to test and check an information technology environment for possible feeble links and vulnerabilities. Ethical hacking describes the process of hacking a network in an ethical way, therefore with good intention. This paper describes what ethical hacking is, what it can do, an ethical hacking method as well as some tools which can be used for an ethical hack.</p> <p><i>Keywords-</i> Vulnerabilities, Hacker, Cracker, Port and Intrusion.</p> <p style="text-align: center;">I. INTRODUCTION TO ETHICAL HACKING</p> <p>The vast progress of Internet has brought many good things like electronic commerce, email, easy access to huge stores of position matter etc. As, with most industrial advances, there is also other face: illegal hackers who will secretly steal the organization's information and transmit it to the open internet. These types of hackers are called black hat hackers. So, to overcome from these major issues, another type of hackers came into existence and these</p> <p style="text-align: center;">II. WORKING OF AN ETHICAL HACKER</p> <p>The working of an ethical hacker involves the under mentioned steps:</p> <ol style="list-style-type: none"> <li>A. Obeying the Ethical Hacking Commandments: Every Ethical Hacker must follow few basic principles. If he does not follow, bad things can happen. The results are even very dangerous.</li> <li>B. The word ethical can be defined as working with high professional morals and principles. Whether you're performing ethical hacking tests against your own systems or for someone who has hired you, everything you do as an ethical Hacker must be approved and must support the company's goals. No hidden agendas are allowed. Trustworthiness is the ultimate objective. The misuse of information is absolutely not allowed.</li> <li>C. Treat the information you gather with complete respect. All information you obtain during your testing from Web application log files to clear-text passwords — must be kept private.</li> <li>D. One of the biggest mistakes is when people try to hack their own systems; they come up with crashing their systems. The main reason for this is poor planning. These testers have not read the documentation or misunderstand the usage and power of the security tools and techniques. You can easily create fed-up conditions on your systems when testing. Running too many tests too quickly on a system causes many system lockups.</li> <li>E. Executing the plan: In Ethical hacking, Time and endurance are important. Be careful when you're performing your ethical hacking tests [4].</li> </ol>
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11	<p>Impacts of Ethical Hacking</p> <p><a href="http://nebula.wsimg.com/e1076cfb3c73c538f705a5106975cc65?AccessKeyId=DFB1BA3CED7E7997D5B1&amp;disposition=0&amp;alloworigin=1">http://nebula.wsimg.com/e1076cfb3c73c538f705a5106975cc65?AccessKeyId=DFB1BA3CED7E7997D5B1&amp;disposition=0&amp;alloworigin=1</a></p>	Mr. Ravinder Mohan Jindal	International Journal of Research in Electronic and Computer Engineering	<p>IJRECE Vol. 2 Issue 4 Oct-Dec 2014 ISSN: 2393-9028 (PRINT)   ISSN: 2348-2281 (ONLINE)</p> <p><b>Impacts of Ethical Hacking</b></p> <p>Mr. Ravinder Mohan Jindal<sup>1</sup>, Mrs. Leekha Jindal<sup>2</sup>, Ramandeep Kaur<sup>1</sup>  <sup>1</sup>PG Dept. of Computer Science, HMV Jalandhar  <sup>2</sup>PG Dept. of Computer Science, DAV Jalandhar</p> <p><b>Abstract:</b> The status of security on the internet is bad and getting worse. One effect to this state of relationships is term as Ethical Hacking which attempts to increase security defense by identifying and patching known security vulnerabilities on systems owned by other party. As public and private organizations roam more of their serious functions to the Internet, criminals have more chance and reason to gain access to aware in order through the Web application. Thus the need of caring the systems from the irritation of hacking generated by the hackers is to endorse the persons who will punch back the illegal attacks on our computer systems. So, Ethical hacking is an evaluation to test and check an information technology environment for possible feeble links and vulnerabilities. Ethical hacking describes the process of hacking a network in an ethical way, therefore with good intention. This paper describes what ethical hacking is, what it can do, an ethical hacking method as well as some tools which can be used for an ethical hack.</p> <p><b>Keywords-</b> Vulnerabilities, Hacker, Cracker, Port and Intrusion.</p> <p><b>I. INTRODUCTION TO ETHICAL HACKING</b></p> <p>The vast progress of Internet has brought many good things like electronic commerce, email, easy access to huge stores of position matter etc. As, with most industrial advances, there is also other face: illegal hackers who will secretly steal the organization's information and transmit it to the open internet. These types of hackers are called black hat hackers. So, to overcome from these major issues, another type of hackers came into existence and these</p> <p><b>II. WORKING OF AN ETHICAL HACKER</b></p> <p>The working of an ethical hacker involves the under mentioned steps:</p> <ol style="list-style-type: none"> <li>Obeying the Ethical Hacking Commandments: Every Ethical Hacker must follow few basic principles. If he does not follow, bad things can happen. The results are even very dangerous.</li> <li>The word ethical can be defined as working with high professional morals and principles. Whether you're performing ethical hacking tests against your own systems or for someone who has hired you, everything you do as an ethical Hacker must be approved and must support the company's goals. No hidden agendas are allowed. Trustworthiness is the ultimate objective. The misuse of information is absolutely not allowed.</li> <li>Treat the information you gather with complete respect. All information you obtain during your testing from Web application log files to clear-text passwords — must be kept private.</li> <li>One of the biggest mistakes is when people try to hack their own systems; they come up with crashing their systems. The main reason for this is poor planning. These testers have not read the documentation or misunderstand the usage and power of the security tools and techniques. You can easily create fed-up conditions on your systems when testing. Running too many tests too quickly on a system causes many system lockups.</li> <li>Executing the plan: In Ethical hacking, Time and endurance are important. Be careful when you're performing your ethical hacking tests [4].</li> </ol>
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12	<p>Quantification and Comparison of Interdependencies among Factors affecting the Software Development Effort</p> <p><a href="http://ijoes.vidyapublications.com/paper/Vol13/45-Vol13.pdf">http://ijoes.vidyapublications.com/paper/Vol13/45-Vol13.pdf</a></p>	Mrs. Sangeeta Bhandari	International Journal of Engineering Sciences
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Sangeeta Bhandari 242

## Quantification and Comparison of interdependencies among factors affecting the software development effort

**Sangeeta Bhandari**  
Asstt. Prof. HMV, Jalandhar  
sangeetakapoorbhandari@gmail.com

*Abstract- Software effort estimation is the most vital task in software development. Various models have been proposed for this purpose. This estimate is vital to win a contract, to allocate appropriate resources, to schedule the process and above all, to finish the project within approximated budget and time. Various factors have been proposed in constructive cost model of cost estimation commonly known as COCOMO. These factors affect each other apart from affecting the software effort. The quantification and comparison of interdependencies of these factors is the main task performed in this paper. Fuzzy inference system has been implemented in MATLAB to find the weights, which represents the strength of interconnections among various pairs of factors.*

**Keywords :** software effort estimation, fuzzy inference system, COCOMO.

### 1. Introduction

The software industry is always in search of a model for software development effort estimation. This estimate is vital to win a contract, to allocate appropriate resources, to schedule the process and above all, to finish the project within approximated budget and time. In the area of software engineering and project management, estimating the software development time and cost is the biggest challenge. As

amount of cost to perform correctly.

- The process is often done hurriedly, without an appreciation for the cost required to perform the estimate.
- Experience is required for developing estimates, especially for large projects.
- Human bias.

Numerous models have been proposed by various researchers over a period of time. This includes various variants of Constructive Cost Estimation Model (COCOMO), Halston Model, Bailey Besli Model, Walston Model etc. COCOMO developed by B.Boehm has been a landmark in software estimation models. It is one of the most widely used and studied model. The software cost is amalgamation of many factors as expressed by effort adjustment factors in COCOMO. In this paper we have studied the interrelationships of the effort multipliers used in COCOMO using fuzzy cognitive maps.

### 2. Software Effort Estimation Models

There are several software cost estimation models which can be classified as algorithmic and non-algorithmic models. These models are discussed in [9,10,15,16,17]. The

concept  $C_j$  could be positive  $W_{ij}$ , which means that an

negative causality i.e. value of  $W_{ij}$  negative, means that an increase in the value of concept  $C_i$  leads to the decrease of the value of concept  $C_j$  and vice versa.

Fig. 2 A Simple Fuzzy Cognitive Map [19]

Beyond the graphical representation of the FCM there is its mathematical model. It consists of an  $1 \times n$  state vector  $A$  which includes the values of the  $n$  concepts and an  $n \times n$  weight matrix  $W$  which gathers the weights  $W_{ij}$  of the interconnections between the  $n$  concepts of the FCM. The matrix  $W$  has  $n$  rows and  $n$  columns where  $n$  equals the total number of distinct concepts of the FCM and the matrix diagonal is zero since it is assumed that no concept causes itself. The value of each one concept is influenced by the

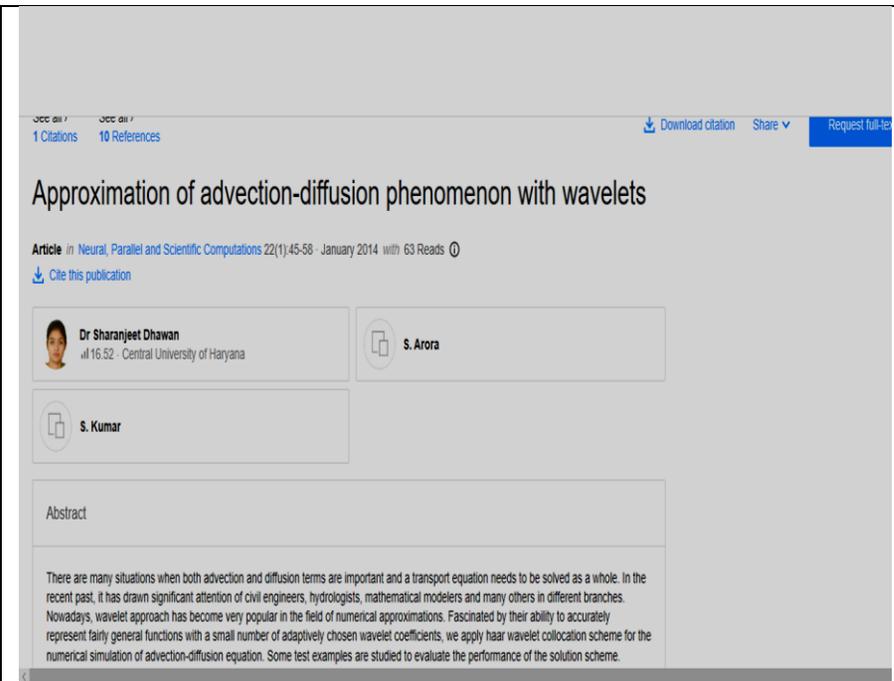
MM = a \* KDSI \* E  
where KDSI is estimated directly or computed from a FP analysis  
E is the product of 15 effort multipliers (Table 3) i.e.  
MM = a \* KDSI \* (EM1\*EM2\*EM3\*.....)  
a and b depend on the mode of the development. There are 152 hours per man month.  
**Advanced Model.** The advanced or detailed COCOMO model incorporates all characteristics of the intermediate version with an assessment of the cost driver's impact on each step (analysis, design, etc.) of the software engineering process. The three ways of estimating with increasing levels of accuracy are simple, intermediate and complex models. These three models are each defined using increasingly detailed mathematical relationship between the developed time, the effort and the maintenance effort. The estimation accuracy is significantly improved when adopting models such as the Intermediate and Complex COCOMO models.

### 4. Fuzzy Cognitive Map

Fuzzy cognitive map was proposed by Kosko [18] to represent the causal relationship between concepts and analyze inference patterns. FCM have been successfully used to model complex systems and develop decision support systems. The FCM is a soft computing modeling methodology that follows a method similar to the human reasoning and human decision-

Research Cell - An International Journal of Engineering Sciences, Issue December 2014, Vol. 3  
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13	<p>HAAR Wavelet Matrices for the Numerical Solutions of Differential Equations</p> <p><a href="http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.679.4051&amp;rep=rep1&amp;type=pdf">http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.679.4051&amp;rep=rep1&amp;type=pdf</a></p>	Dr. Sangeeta Arora	International Journal of Computer Applications	<p style="text-align: right;"><i>International Journal of Computer Applications (0975 – 8887)</i> <i>Volume 97– No.18, July 2014</i></p> <h2 style="text-align: center;">Haar Wavelet Matrices for the Numerical Solutions of Differential Equations</h2> <p style="text-align: center;">       Sangeeta Arora        Research Scholar        Punjab Technical University        Jalandhar     </p> <p style="text-align: center;">       Yadwinder Singh Brar        Department of ECE        Guru Nanak Dev Engineering        College Ludhiana     </p> <p style="text-align: center;">       Sheo Kumar        Department of Mathematics        Dr. B.R. Ambedkar NIT        Jalandhar     </p> <p><b>ABSTRACT</b></p> <p>Haar Wavelets has become important tool for solving number of problems of science and engineering. In this paper a computational scheme is implemented using Haar matrices to find the numerical solution of differential equations with known initial and boundary conditions. We also presented exact solution, numerical solution and absolute error. Numerical experiments presented here are comparable with the available data. The algorithm used in this is very simple and easy to implement.</p> <p><b>Keywords</b></p> <p>Haar wavelets, Haar functions, Operational matrix, Differential equation.</p> <p><b>1. INTRODUCTION</b></p> <p>It has been observed from the literature that many researchers</p> <p style="text-align: right;">A review of the basic properties of the wavelets and the decomposition and the reconstruction of functions in terms of the wavelet bases is given by Strang [6]. Many families of wavelets have been proposed in the literature. If one wants to use wavelets for the solution of differential equations, one therefore has to choose one specific family which is most advantageous for the intended application. Within one family there are also members of different degree. All these wavelet families can be classified as either being an orthogonal or biorthogonal family. Each orthogonal wavelet family is characterized by two functions- the mother scaling function and the mother wavelet. With a solid historical as well as practical background, Among the wavelet families, which are defined by an analytical expression, special attention deserves the Haar wavelets.</p> <p style="text-align: right;">In 1910, Alfred Haar introduced the notion of wavelets. The Haar wavelet transform is one the earliest examples of what is known now as a compact, bi-orthogonal, wavelet</p>
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14	<p>Approximation of Advection-Diffusion Phenomenon with Wavelets</p> <p><a href="https://www.researchgate.net/publication/285087344_Approximation_of_advection_diffusion_phenomenon_with_wavelets">https://www.researchgate.net/publication/285087344_Approximation_of_advection_diffusion_phenomenon_with_wavelets</a></p>	Dr. Sangeeta Arora	International Journal of Neural, Parallel and Scientific Computations	 <p>The screenshot shows the article page on ResearchGate. At the top, it indicates '1 Citations' and '10 References'. The article title is 'Approximation of advection-diffusion phenomenon with wavelets'. It is published in 'Neural, Parallel and Scientific Computations 22(1):45-58 - January 2014' with 63 reads. The authors listed are Dr. Sharanjeet Dhawan (Central University of Haryana), S. Arora, and S. Kumar. The abstract section is visible, starting with 'There are many situations when both advection and diffusion terms are important and a transport equation needs to be solved as a whole. In the recent past, it has drawn significant attention of civil engineers, hydrologists, mathematical modelers and many others in different branches. Nowadays, wavelet approach has become very popular in the field of numerical approximations. Fascinated by their ability to accurately represent fairly general functions with a small number of adaptively chosen wavelet coefficients, we apply haar wavelet collocation scheme for the numerical simulation of advection-diffusion equation. Some test examples are studied to evaluate the performance of the solution scheme.'</p>
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15	<p>HAAR Wavelet Transform for Solution of Image Retrieval</p> <p><a href="https://www.semanticscholar.org/paper/HAAR-WAVELET-TRANSFORM-FOR-SOLUTION-OF-IMAGE-Arora-Brar/28f0b43a26a6abed0f9ce3f43cb0177aedd443f7">https://www.semanticscholar.org/paper/HAAR-WAVELET-TRANSFORM-FOR-SOLUTION-OF-IMAGE-Arora-Brar/28f0b43a26a6abed0f9ce3f43cb0177aedd443f7</a></p>	Dr. Sangeeta Arora	International Journal of Advanced Computer and Mathematical Sciences
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Mathematics - Published 2014 Share This Paper 

## HAAR WAVELET TRANSFORM FOR SOLUTION OF IMAGE RETRIEVAL

Sangeeta Arora, Yadwinder Singh Brar, +1 author, Guru Nanak

An efficient algorithm based Haar Wavelet approach for image retrieval solution, is proposed. This method is applicable for different kinds of image extraction features. Wavelet Transformation is a powerful tool for many problems. It can be used in numerical techniques. Here we proposed a new technique of wavelet transformation through which a feature vector of size ten, characterizing texture feature of image is constructed from only three iterations of Wavelet transform. Mask technique is... CONTINUE

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16	Computational Analysis of Single Domain Cyclophilins from <i>Arabidopsis thaliana</i> for Identification of Potential Disulfide forming Pairs of Cysteins involved in Redox Mediated Activity Control	Mr. Singh Harpreet	Computer Apex
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ISSN No: 2249 6688

**Computational analysis of single domain cyclophilins from *Arabidopsis thaliana* for identification of potential disulfide forming pairs of cysteins involved in redox mediated activity control.**

(Research Paper Presented in International Conference ITC 2014)

Mr. Harpreet Singh<sup>1</sup>, Ms. Srushti Kashyap<sup>2</sup>, Mrs. Prabjyot Kaur<sup>3</sup>, Dr. Monika Bhardwaj<sup>4</sup>  
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<sup>4</sup>Assistant Professor in Zoology, B.B.K.D.A.V College, Amritsar, Punjab

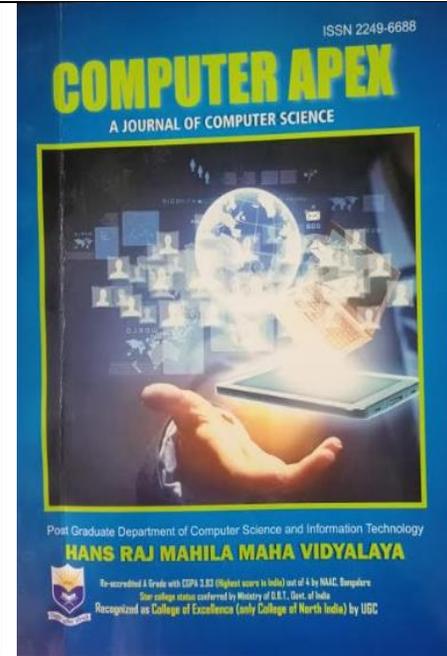
**ABSTRACT**

Cyclophilins can be classified into single domain and multidomain members. All are having PPIase activity. Twenty nine cyclophilins are present in *Arabidopsis thaliana* including thirty one protein products indicating specific function. These cyclophilins play important role in cellular responses to stress caused by changes in the redox environment or by overpopulation of cellular activity. Recently, some cyclophilins have been found to work in a redox mediated manner known as redox 2-Cys mechanism involving the formation of disulfide bridge between functionally essential cysteine residues. Among these cyclophilins the available are Cyp1, SmCyp1 and CcCyp. From which Cyp1 and CcCyp cysteines contains divergent loop. Upon evaluation the tertiary interactions diverge, leading to formation of a disulfide bond between Cys 40 and Cys 158 leading to further conformational change and thereby making the active site unavailable for the substrate. SmCyp1 also involves a 2-Cys mechanism, formation of disulfide bond on oxidation between two cysteine residues (Cys-122, Cys-126) located in the vicinity of the active site, closing the active site and causing loss of activity. This bond however is disrupted in reducing conditions leaving the enzyme active. The present study was undertaken to show the state of conservation of cysteine amino acids and to predict the redox controlled activity of single domain cyclophilins in *Arabidopsis thaliana*. Highest number of cysteines was found in AcCyp26 followed by AcCyp22 while AcCyp18 does not contain any cysteine amino acid. AcCyp18-1, AcCyp18-2, AcCyp26, AcCyp21, AcCyp21-1, AcCyp21-4, AcCyp26-2, AcCyp20-2 and AcCyp20-1 were lacking the divergent loops and are therefore unlikely to function via a divergent loop mechanism. In eight cyclophilins both divergent loop and the Cysteine residues corresponding to position 40 and 158 in CcCyp were present suggesting these cyclophilins to be function via divergent loop controlled redox mechanism. Also, seven of these eight cyclophilins (except for AcCyp18-1) the active site residues were well conserved indicating that these cyclophilins may be active cyclophilins. None of the single domain cyclophilins from investigated in the present study was having the conserved cysteine pair corresponding to the Cys-122-Cys-126 in SmCyp representing the CXXX loop found in many other redox active proteins.

**INTRODUCTION**

Immunophilins, targeted by immunosuppressive drugs, are endogenous cytosolic peptidyl-prolyl isomerase that interconvert between cis & trans positions. Immunophilins comprises of two major families cyclophilins and FKBP, both having peptidyl-prolyl isomerase (PPIase) and are involved in protein folding but share little sequence homology. Immunophilins have identified in all organisms examined including bacteria, fungi, animals, and plants. But the physiological function is poorly understood in any organism. A total of 53 genes have been found to encode putative immunophilins, among which 23 are putative FKBP and 29 are putative CYP. Both FKBP and Cyclophilins can be classified into single domain and multidomain members. The single domain members contain a basic catalytic domain and some of them have signal sequences for targeting to a specific organelle. The multiple domain members contain not only the catalytic domain but they also defined modules that are involved in protein-protein interaction or other functions. Cyclophilins are the first subfamily of immunophilins discovered in *Rovine*

17	Transport Protocols in Wireless Sensor Networks	Layer in Sensor	Mr. Singh Gurmeet Computer Apex
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ISSN No. 2249-6688

### Transport Layer Protocols in Wireless Sensor Networks

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Mr. Gullagong  
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**Abstract**  
Wireless Sensor Networks are made up of small devices that have the capability for sensing, processing and communicating information over the wireless channels. Transport Protocols is required for this to provide end to end connections. The various transport protocols provide congestion control, reliability, and packet loss recovery and energy efficiency. The standard transport protocols like TCP and UDP cannot be used for wireless sensor networks. TCP protocol provides reliability and congestion control but it has expensive transmission mechanism in case of packet loss which is unsuitable for Wireless Sensor Networks. UDP protocol cannot be used in WSN because it does not provide reliability and other required features. A number of different transport protocols are available for Wireless Sensor Networking and that all uses different parameters and mechanisms. Among these transport protocols for WSN, these can be classified into:  
1. The protocols which provide reliability only.  
2. The protocols which provide congestion control only.  
3. The protocols which provide both the reliability and congestion control.  
Among transport layer protocols being used in WSN

**Protocols providing both reliability and congestion control**

ART	Asymmetric and reliability transport
CRRT	Congestion Aware and rate controlled reliable transport
CTCP	Collaborative transport and Control protocol
DSP	Delay sensitive protocol
SRT	Event to sink reliable transport
PRT	Price oriented reliable transport
CR	Rate Controlled Reliable Transport
TR	Real time and Reliable protocol
CTP	Sensor Transmission Control Protocol
CCRT	Tunable reliability with congestion control for information transport

**Protocols providing reliability only**

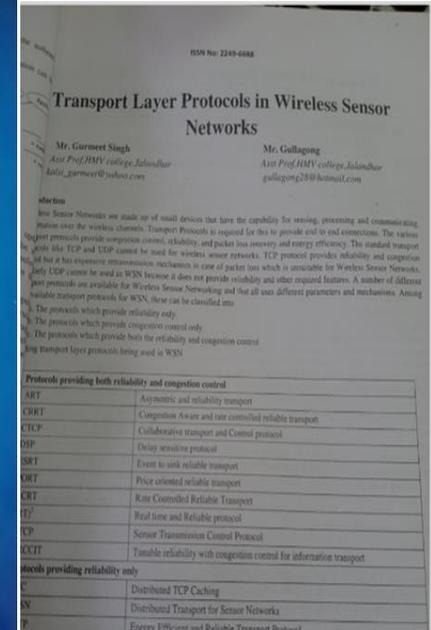
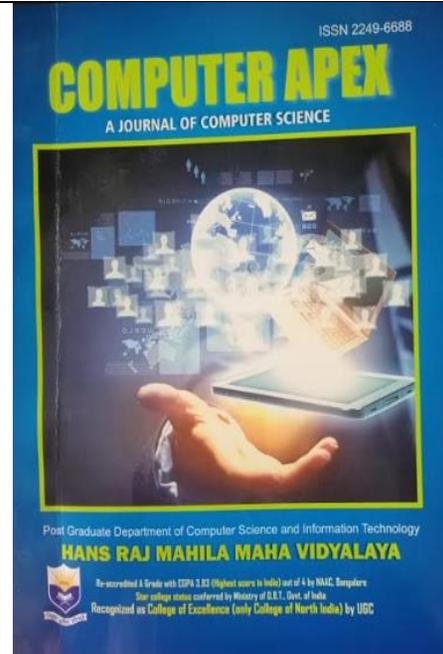
C	Distributed TCP Caching
SN	Distributed Transport for Sensor Networks
P	Energy Efficient and Reliable Transport Protocol

18 Transport Layer Protocols in Wireless Sensor Networks

Layer in Sensor

Mr. Gullagong

Computer Apex



**Abstract**

Wireless Sensor Networks are made up of small devices that have the capability for sensing, processing and communicating information over the wireless channels. Transport Protocols is required for this to provide end to end connections. The various transport protocols provide congestion control, reliability and packet loss recovery and energy efficiency. The standard transport protocols like TCP and UDP cannot be used for wireless sensor networks. TCP protocol provides reliability and congestion control but it has expensive retransmission mechanism in case of packet loss which is unsuitable for Wireless Sensor Networks. UDP protocol cannot be used in WSN because it does not provide reliability and other required features. A number of different transport protocols are available for Wireless Sensor Networking and that all uses different parameters and mechanisms. Among these transport protocols for WSN, these can be classified into:

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Among transport layer protocols being used in WSN

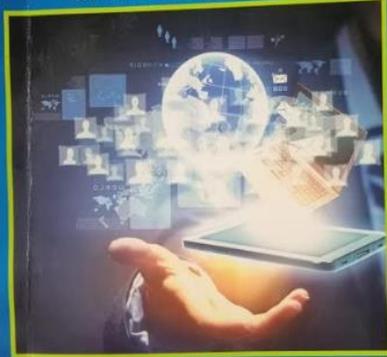
**Protocols providing both reliability and congestion control**

ART	Asymmetric and reliable transport
CRR	Congestion Aware and rate controlled reliable transport
CTCP	Collaborative transport and Control protocol
DSP	Delay sensitive protocol
SRT	Event to sink reliable transport
ORT	Price oriented reliable transport
CR	Rate Controlled Reliable Transport
TR	Real time and Reliable protocol
CP	Sensor Transmission Control Protocol
ECCT	Tunable reliability with congestion control for information transport

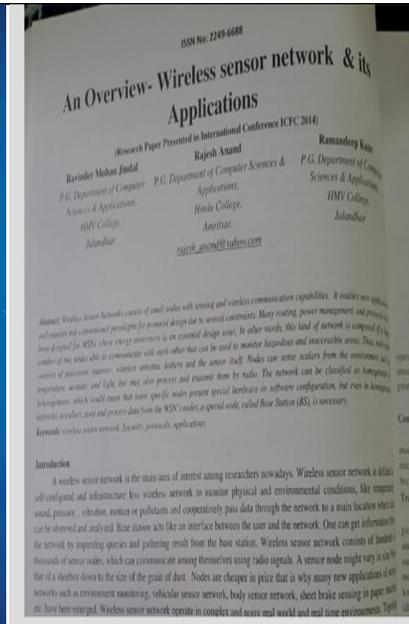
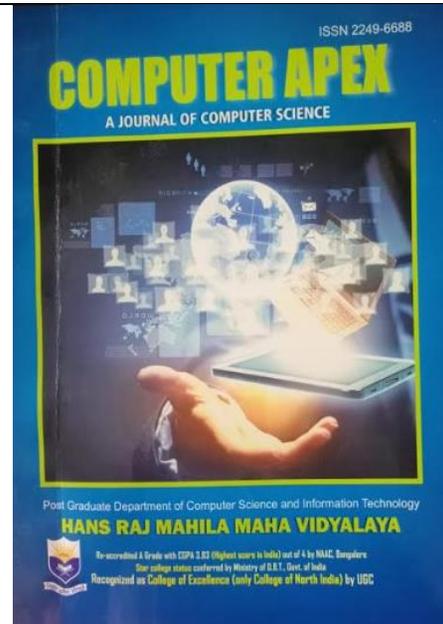
**Protocols providing reliability only**

C	Distributed TCP Caching
SN	Distributed Transport for Sensor Networks
P	Priority Efficient and Reliable Transport Protocol

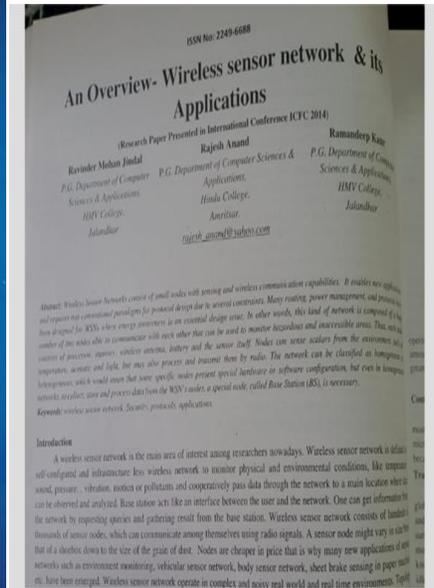
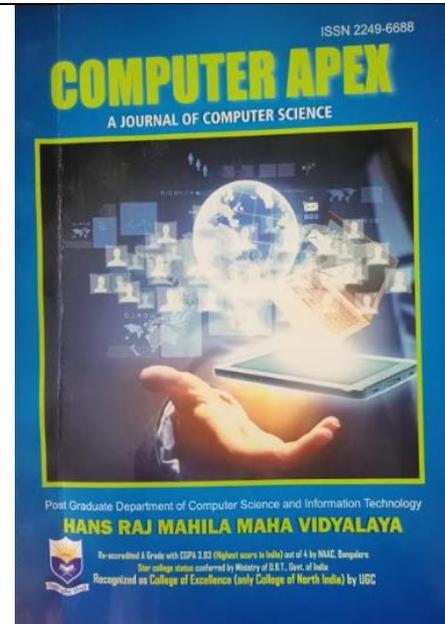


21	Understanding Big Data and its Impact	Mrs. Sangeeta Bhandari	Computer Apex	 <p>ISSN 2249-6688</p> <p><b>COMPUTER APEX</b> A JOURNAL OF COMPUTER SCIENCE</p> <p>Sangeeta Bhandari BHV, Jalandhar sangeetabhandari@gmail.com</p> <p>Pardeep Bhandari Doaba College, Jalandhar bhandari@doabacollege.ac.in</p> <p>Post Graduate Department of Computer Science and Information Technology <b>HANS RAJ MAHILA MAHA VIDYALAYA</b> Re-accredited A Grade with CGPA 3.03 (Highest score in India) out of 4 by NAAC, Bangalore Star college status conferred by Ministry of H.E.T., Govt. of India Recognized as College of Excellence (only College of North India) by UGC</p>	<p>ISSN No: 2249-6688</p> <p><b>Understanding Big Data and its Impact</b></p> <p>Sangeeta Bhandari BHV, Jalandhar sangeetabhandari@gmail.com</p> <p>Pardeep Bhandari Doaba College, Jalandhar bhandari@doabacollege.ac.in</p> <p><b>Abstract:</b></p> <p>Big data is a popular term used to describe the exponential growth and variability of data, both structured and unstructured. The term often refers to the phrase "Big Data" in that everything we do is increasingly leaving a digital trail for data, which we find others use and analyze. Big Data handles refers to our ability to make use of the ever-increasing volume of data. Big data may be as important to business as it is security in the Internet era. The real issue is not the organization's ability to acquire large amounts of data, it's what they do with the data that counts. The biggest issue is that organizations will be able to take data from our servers, harvest relevant data and analyze it in the context that may enable our marketing, sales, customer development and optimized offerings, and increase business decision-making. More data may lead to more accurate analysis. Determining relevant data is key to delivering value from massive amounts of data. The true value of big data lies not just in having it, but in knowing it for fact, fact based decisions that lead to real business value.</p> <p><b>Introduction:</b></p> <p>Big data is a relative term describing a situation where the volume, velocity and variety of data exceed an organization's storage or compute capacity for accurate and timely decision making. Some of this data is held in transactional data stores - the by-product of fast-growing online activity. Machine-to-machine interactions, such as metering, call detail records, environmental sensing and RFID systems, generate their own tidal waves of data. Simple activities like listening to music or reading a book are now generating data. Digital music players and eBooks collect data on our activities. Your smart phone collects data on how you use it and your web browser collects information on what you are searching for. Your credit card company collects data on where you shop and your shop collects data on what you buy. It is hard to imagine any activity that does not generate data. Our conversations are now digitally recorded. It all started with emails but nowadays most of our conversations have a digital trail. Just think of all the conversations we have on social media sites like Facebook or Twitter. Even many of our phone conversations are now digitally recorded. Just think about all the pictures we take on our smart phones or digital cameras. We upload and share 100s of thousands of them on social media sites every second. The increasing numbers of CCTV cameras take video images and we upload hundreds of hours of video images to YouTube and other sites every minute. We are increasingly surrounded by sensors that collect and share data. Take your smart phone, it contains a global positioning sensor to track exactly where you are every second of the day, it includes an accelerometer to track the speed and direction at which you are travelling. We now have sensors in many devices and products. We now have smart TVs that are able to collect and process data on what we watch, what we search for, and even whom we watch.</p>
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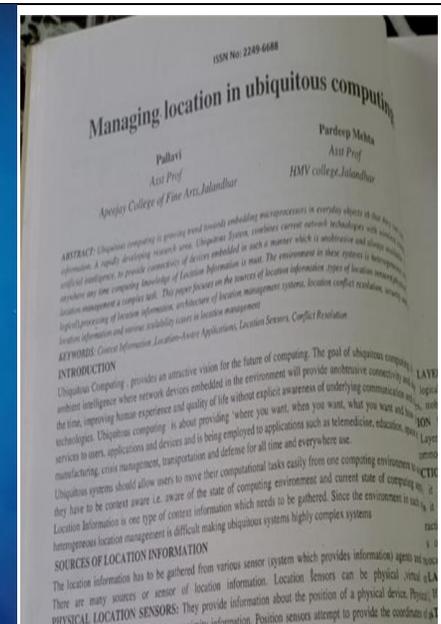
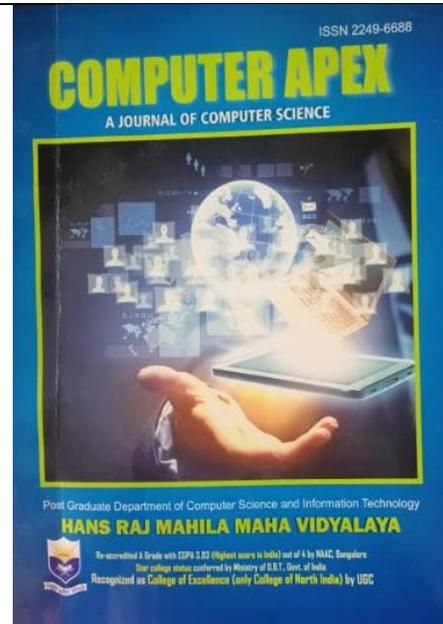
22	An Overview - Wireless Sensor Network & its Applications	Mr. Ravinder Mohan Jindal	Computer Apex
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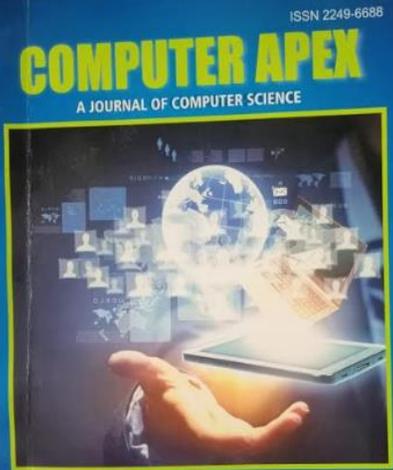
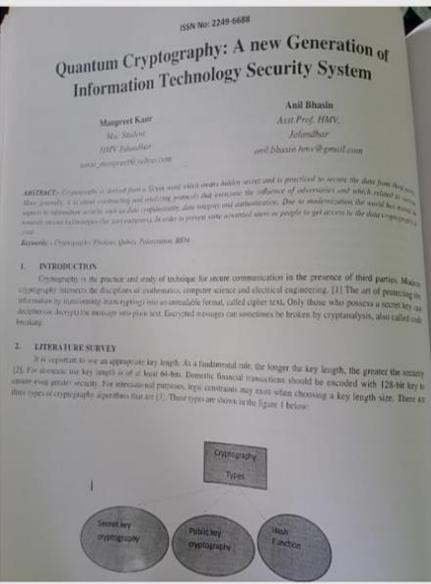
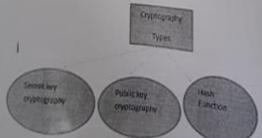


23	An Overview - Wireless Sensor Network & its Applications	Mrs. Ramandeep Kaur	Computer Apex
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24	Managing Location in Ubiquitous Computing	Mr. Pardeep Mehta	Computer Apex
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25	Quantum Cryptography :A New Generation of Information Technology Security System	Mr. Anil Bhasin	Computer Apex	 <p>ISSN 2249-6688</p> <p><b>COMPUTER APEX</b> A JOURNAL OF COMPUTER SCIENCE</p> <p>Post Graduate Department of Computer Science and Information Technology <b>HANS RAJ MAHILA MAHA VIDYALAYA</b></p> <p>In-accordance A Grade with CGPA 3.03 (Highest score in India) out of 4 by MAAC, Bangalore Star college status conferred by Ministry of H.E.T., Govt. of India Recognized as College of Excellence (only College of North India) by USC</p>	 <p>ISSN No: 2249-6688</p> <p><b>Quantum Cryptography: A new Generation of Information Technology Security System</b></p> <p>Anil Bhasin Asst Prof, HMV, Jalandhar anil.bhasin.hmv@gmail.com</p> <p>Manpreet Kaur Ms. Student HMV Jalandhar www.manpreetkaur.com</p> <p><b>ABSTRACT:</b> Cryptography is defined as a science which creates hidden secret and is practiced to receive the data from the sender. More precisely, it is about concealing and revealing messages that preserve the confidence of subscribers and which related to various aspects in information security such as data confidentiality, data integrity and authentication. Due to modernization the world has witnessed several new technologies that are expected to be used to prevent some serious users or people to get access to the data cryptographic system.</p> <p><b>Keywords:</b> Cryptography, Privacy, Protection, BBN</p> <p><b>1. INTRODUCTION</b> Cryptography is the practice and study of technique for secure communication in the presence of third parties. Modern cryptography intersects the disciplines of mathematics, computer science and electrical engineering. [1] The art of protecting the information by transforming plain text into an unreadable format, called cipher text. Only those who possess a secret key can decipher or decrypt the message into plain text. Encrypted messages can sometimes be broken by cryptanalysis, also called code breaking.</p> <p><b>2. LITERATURE SURVEY</b> It is important to use an appropriate key length. As a fundamental rule, the longer the key length, the greater the security. [2] For domestic use, key lengths in of at least 66-bits. Domestic financial transactions should be encoded with 128-bit key in three types of cryptography algorithms that are [3]. These types are shown in the figure 1 below:</p> 
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26	<p>Robust and Dynamic Data Aggregation in Wireless Sensor Networks</p> <p><a href="https://www.krishisanskriti.org/vol_image/02Jul201511071608%20%20%20Nitin%20Arora%20%20%20%20%2020128-130.pdf">https://www.krishisanskriti.org/vol_image/02Jul201511071608%20%20%20Nitin%20Arora%20%20%20%20%2020128-130.pdf</a></p>	Mrs. Urvashi Mishra	Advances in Computer Science and Information Technology
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Advances in Computer Science and Information Technology (ACSIT)  
 Print ISSN: 2393-9907; Online ISSN: 2393-9915; Volume 1, Number 3; November, 2014 pp. 128-130  
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## Robust and Dynamic Data Aggregation in Wireless Sensor Networks

Urvashi Sharma<sup>1</sup>, Sonia Mahindru<sup>2</sup> and Nitin Arora<sup>3</sup>  
<sup>1,2</sup>HMV, Jalandhar  
<sup>3</sup>M.Tech, DAVIET  
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**Abstract:** *Wireless Sensor Network(WSN) consist of several energy prone nodes which runs on the battery power. The whole network is least proficient in terms of Energy, lifetime etc. In this paper, a new MAC Protocol Called DA-MAC is designed to serve the purpose of Robustness and the Dynamic mechanism of the Network. Moreover in this paper there is a term Clear Channel Assessment(CCA) through which MAC must accurately determine if channel is clear or busy so that there must be a possibility to find when and where to do Data Aggregation*

**Keywords:** DA-MAC, CCA, NACK, CSMA

**1. INTRODUCTION**

As an advancement in this technological era, sensor networks consist of very small and cost efficient sensing devices which

gather data. Neither they need a human interference while deploying. These sensor nodes can seek the surroundings by gathering information from their environment in which they deployed, and work collectively to send the data to a main station(BASE STATION), or sink, for analysis and processing. The main aim of data aggregation algorithms is to collect and aggregate data so that the energy consumption should be saved and the whole network lifetime is enhanced. Wireless Sensor Network leads progressively striking method for data collecting in scattered system architectures and active access via wireless connectivity.

**2. DATA AGGREGATION**

Data Aggregation is defined as "The process of collecting or gathering the data which is sensed by the sensor nodes deployed in the environment". Data Aggregation is the method which is used to enhance the lifetime of the wireless sensor network. The reason is that with this technique the reduction

27	<p>Robust and Dynamic Data Aggregation in Wireless Sensor Networks</p> <p><a href="https://www.krishisanskriti.org/vol_image/02Jul201511071608%20%20%20Nitin%20Arora%20%20%20%2020128-130.pdf">https://www.krishisanskriti.org/vol_image/02Jul201511071608%20%20%20Nitin%20Arora%20%20%20%2020128-130.pdf</a></p>	Ms. Mahindru	Sonia in Computer Science and Information Technology
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 Print ISSN: 2393-9907; Online ISSN: 2393-9915; Volume 1, Number 3; November, 2014 pp. 128-130  
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## Robust and Dynamic Data Aggregation in Wireless Sensor Networks

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**Abstract:** *Wireless Sensor Network(WSN) consist of several energy prone nodes which runs on the battery power. The whole network is least proficient in terms of Energy, lifetime etc. In this paper, a new MAC Protocol Called DA-MAC is designed to serve the purpose of Robustness and the Dynamic mechanism of the Network. Moreover in this paper there is a term Clear Channel Assessment(CCA) through which MAC must accurately determine if channel is clear or busy so that there must be a possibility to find when and where to do Data Aggregation*

**Keywords:** DA-MAC, CCA, NACK, CSMA

**1. INTRODUCTION**

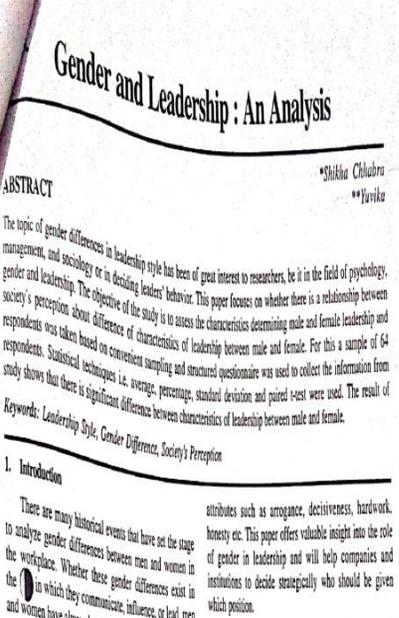
As an advancement in this technological era, sensor networks consist of very small and cost efficient sensing devices which

gather data. Neither they need a human interference while deploying. These sensor nodes can seeking the surroundings by gathering information from their environment in which they deployed, and work collectively to send the data to a main station(BASE STATION) , or sink, for analysis and processing. The main aim of data aggregation algorithms is to collect and aggregate data so that the energy consumption should be saved and the whole network lifetime is enhanced. Wireless Sensor Network leads progressively striking method for data collecting in scattered system architectures and active access via wireless connectivity.

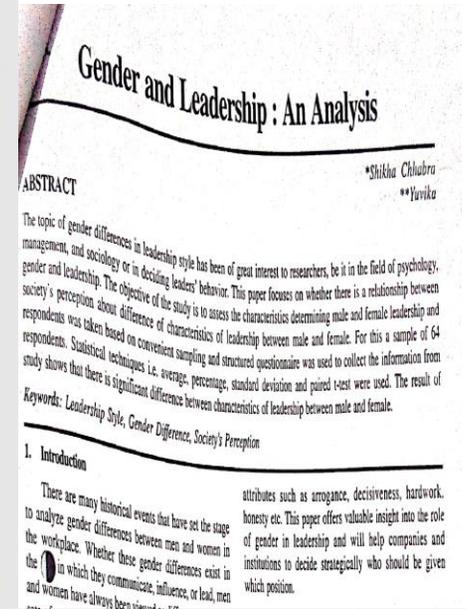
**2. DATA AGGREGATION**

Data Aggregation is defined as "The process of collecting or gathering the data which is sensed by the sensor nodes deployed in the environment". Data Aggregation is the method which is used to enhanced the lifetime of the wireless sensor network. The reason is that with this technique the reduction

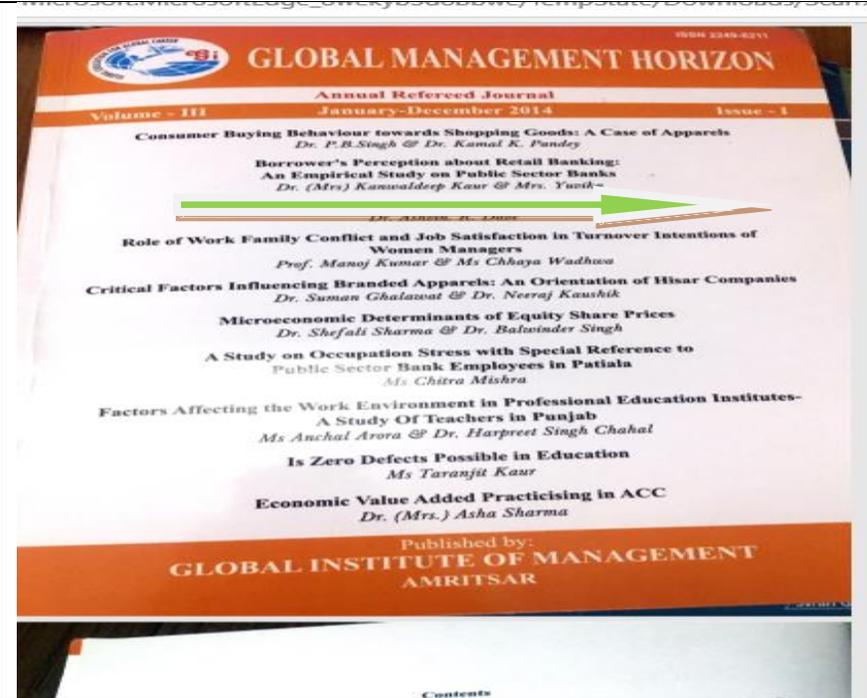
28	<p>Robust and Dynamic Data Aggregation in Wireless Sensor Networks</p> <p><a href="https://www.krishisanskriti.org/vol_image/02Jul201511071608%20%20%20Nitin%20Arora%20%20%20%20%20%20128-130.pdf">https://www.krishisanskriti.org/vol_image/02Jul201511071608%20%20%20Nitin%20Arora%20%20%20%20%20%20128-130.pdf</a></p>	Mr. Nitin Arora	Advances in Computer Science and Information Technology	<p>Advances in Computer Science and Information Technology (ACSIT)  Print ISSN: 2393-9907; Online ISSN: 2393-9915; Volume 1, Number 3; November, 2014 pp. 128-130  © Krishi Sanskriti Publications  http://www.krishisanskriti.org/acsit.html</p> <hr/> <p style="text-align: center;"><b>Robust and Dynamic Data Aggregation in Wireless Sensor Networks</b></p> <p style="text-align: center;">Urvashi Sharma<sup>1</sup>, Sonia Mahindru<sup>2</sup> and Nitin Arora<sup>3</sup></p> <p style="text-align: center;"><sup>1,2</sup>HMV, Jalandhar  <sup>3</sup>M.Tech, DAVIET</p> <p style="text-align: center;">E-mail: <sup>1</sup>urvishra@gmail.com, <sup>2</sup>s_mahindru1978@gmail.com, <sup>3</sup>arora07nitin@gmail.com</p> <hr/> <p><b>Abstract:</b> <i>Wireless Sensor Network(WSN) consist of several energy prone nodes which runs on the battery power. The whole network is least proficient in terms of Energy, lifetime etc. In this paper, a new MAC Protocol Called DA-MAC is designed to serve the purpose of Robustness and the Dynamic mechanism of the Network. Moreover in this paper there is a term Clear Channel Assessment(CCA) through which MAC must accurately determine if channel is clear or busy so that there must be a possibility to find when and where to do Data Aggregation</i></p> <p><b>Keywords:</b> <i>DA-MAC, CCA, NACK, CSMA</i></p> <p><b>1. INTRODUCTION</b></p> <p>As an advancement in this technological era, sensor networks consist of very small and cost efficient sensing devices which</p> <p>gather data. Neither they need a human interference while deploying. These sensor nodes can seek the surroundings by gathering information from their environment in which they deployed, and work collectively to send the data to a main station(BASE STATION), or sink, for analysis and processing. The main aim of data aggregation algorithms is to collect and aggregate data so that the energy consumption should be saved and the whole network lifetime is enhanced. Wireless Sensor Network leads progressively striking method for data collecting in scattered system architectures and active access via wireless connectivity.</p> <p><b>2. DATA AGGREGATION</b></p> <p>Data Aggregation is defined as "The process of collecting or gathering the data which is sensed by the sensor nodes deployed in the environment". Data Aggregation is the method which is used to enhance the lifetime of the wireless sensor network. The reason is that with this technique the reduction</p>
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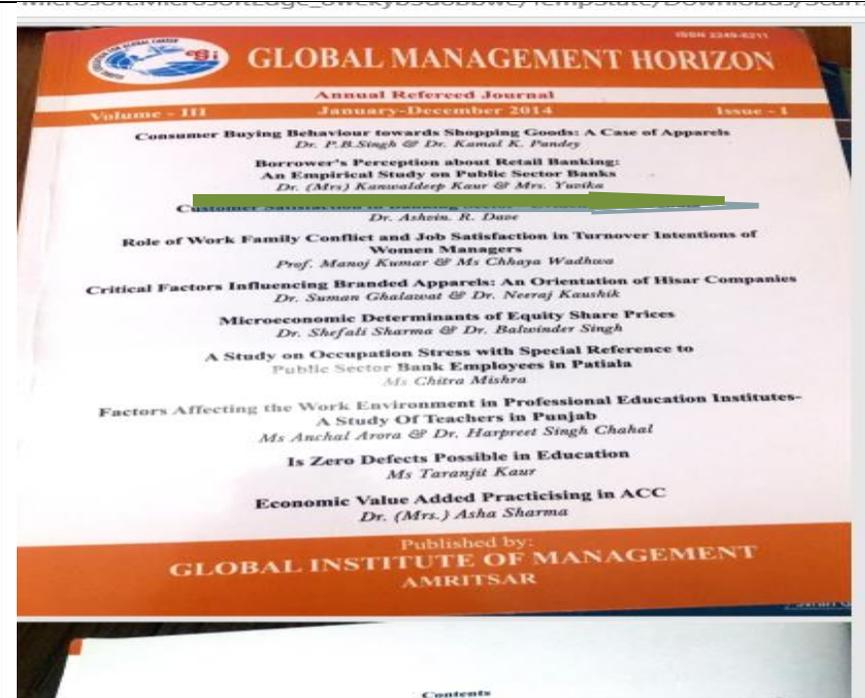


32

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Volume 4, Issue 12, December 2014 ISSN: 2277 128X

## International Journal of Advanced Research in Computer Science and Software Engineering

Research Paper  
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### Impacts of Information about the Broadband Technology: Research Challenges and Opportunities

Lekh Raj<sup>1</sup>, Sata Nand<sup>2</sup>, Manoj Kumar<sup>3</sup>, Ravinder Mohan Jindal<sup>4</sup>, Leekha Jindal<sup>5</sup>

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<sup>5</sup>Assistant Professor, P.G. Department of Computer Sciences DAV College, Jalandhar, India

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*Abstract: The present paper provides the conceptual framework on the Broadband technologies for access networks: digital subscriber line (DSL), hybrid fiber coax (HFC), power line communications (PLC), fiber to the home (FTTH), fiber to the curb (FTTC), fiber to the cabinet (FTTCab), and wireless alternatives such as WiMAX and satellite. The main part of this development and growth has been in the core networks, and the capacity of the access network to delivery broadband services remains as a challenge ("last mile problem"). The access network remains a bottleneck in terms of the bandwidth and service quality it affords the end user. By other side, the access network is much more spread geographically and covers larger areas. Several access technologies can be used in this part of the network, which can be used to resolve the bandwidth bottleneck and the investment problem: xDSL, HFC, FTTx, FWA, WiMAX, PLC, Satellite, etc.*

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**Keywords:** DSL, HFC, PLC, FTTH, FTTC. Geographically, Core Network,

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#### I. INTRODUCTION

The requirements for higher access capacities are primarily driven by the increase use of several broadband technology user terminals in the home. The dial-up modem was the primary means of getting online, enabling Internet connection speeds upwards of 56,000 bits per second, or 56 kilobits per second. The number of Internet users, the sophistication of content, and demand for advanced applications increased exponentially in the mid-1990s, highlighting the need for more high-capacity bandwidth to accommodate the rise in network traffic. This demand, along with cheaper network equipment, drove the development and deployment of broadband in the late 1990s. In 1999, broadband was being heralded as an economic and social catalyst, a technology that was poised to "increase our nation's productivity, create

34	Madhaya Kaleen Bhakti Andolan Ka Udabhav : Naveen Paripekshya	Dr. Jyoti Gogia	Shabad-Sarokar <a href="https://www.hrmmv.org/documents/removedlist/JournalsRemovedfromUGC-ApprovedListofJournals.pdf">https://www.hrmmv.org/documents/removedlist/JournalsRemovedfromUGC-ApprovedListofJournals.pdf</a>
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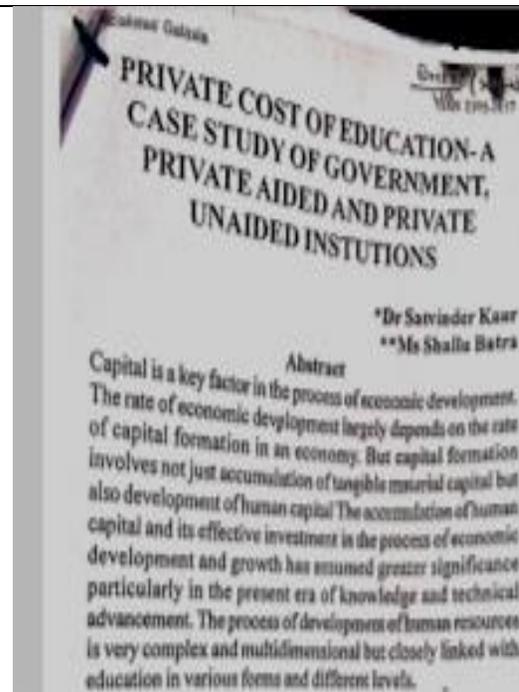
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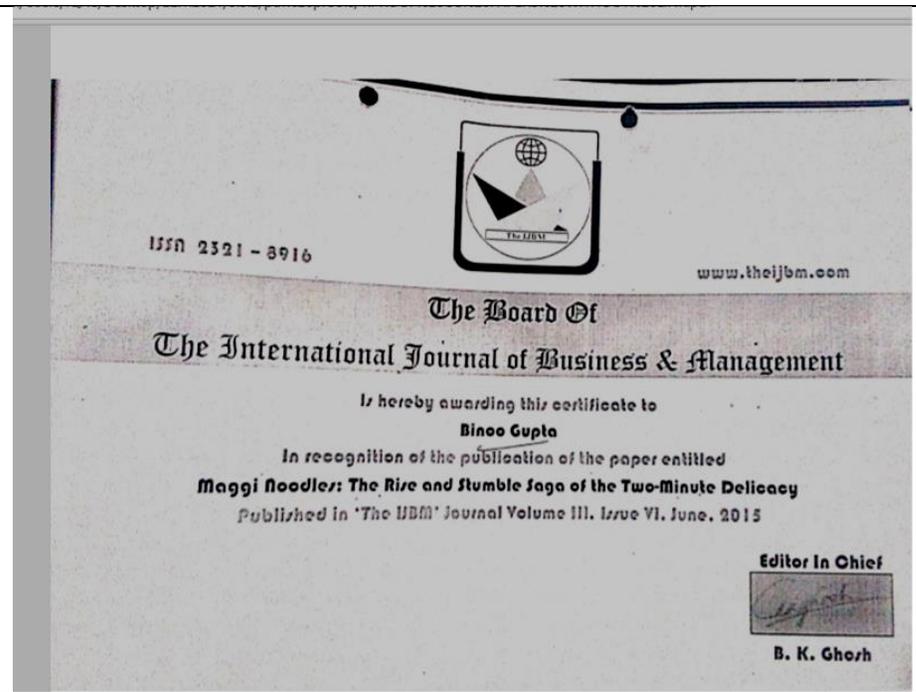
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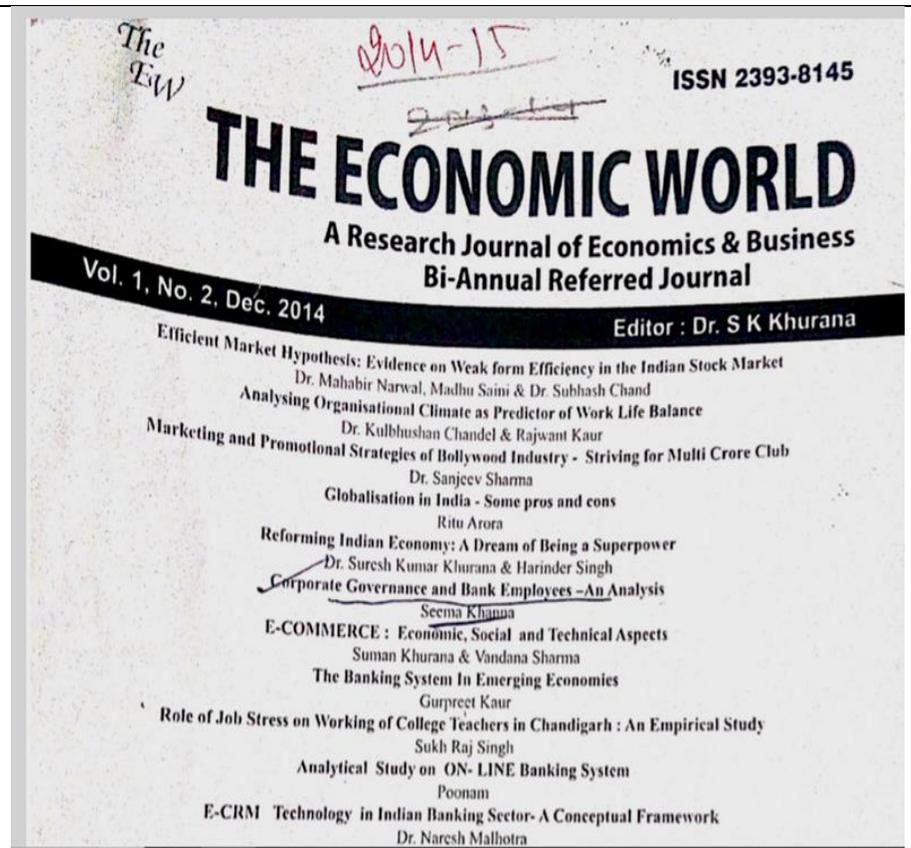
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40	Corporate Disclosure of Indian Financial Sector : A Panacea Towards Corporate Governance and Shareholder Value	Mrs. Seema Khanna	Third Eye-A Journal of Business Review	<p style="text-align: center;"><b>THIRD EYE-A JOURNAL OF BUSINESS REVIEW</b></p> <p>Volume 2 / Number 2/July -2014      ISSN: 2319 -3476</p> <p><b>Dr. Kulbhushan Chandel &amp; Dr. Nitya Sharma :</b> <i>Pricing Strategies of MSMEs for Market Endurance.</i></p> <p><b>Seema Khanna &amp; Esha Sharma :</b> <i>Corporate Disclosure of Indian Financial Sector; A Panacea towards Corporate Governance and Shareholder Value</i></p> <hr/> <p><b>Dr. Raj Kumar Singh &amp; Ms. Rajwant Kaur:</b> <i>HRAI Practices for Maintaining Work Life Balance</i></p> <p><b>Dr. Mahabir Narwal &amp; Sneh Lata :</b> <i>Impact of Trade Unionism on Employees Welfare.</i></p> <p><b>Prof. Ran Singh Dhaliwal &amp; Arun Aggarwal :</b> <i>The Eff. of Work Locus of Control on Perception of Distributive Justice Among Unive. Faculty.</i></p> <p><b>Mr. Balvinder Singli &amp; Dr. O.P. Verma :</b> <i>Industrialisation and Awareness about Labour Laws amongst the Employees in Himachal Pradesh.</i></p> <p><b>Dr. Rajesh Kumar:</b> <i>Mutual Funds: An Emerging Investment Instrument in Capital Market.</i></p> <p><b>Dr. Sanjay Arora &amp; Mamta Arora:</b> <i>Financial Inclusion in India: Opportunities and Threats.</i></p> <p><b>Dr. P. N. Harikumar:</b></p>
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