



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
Sivakasi**

(Affiliated to Madurai Kamaraj University, Reaccredited with "A" Grade by NAAC,
College with Potential for Excellence by UGC & Mentor Institution under UGC PARAMARSH)

NAAC SSR Cycle IV (2015-2020)

3.4. PUBLICATIONS

**3.4.3. RESEARCH PAPER IN
JOURNALS**

**EVIDENCES FOR PUBLICATION IN
JOURNALS (with DOI Number)**

2015-2016



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Publication in Journals

2015-2016

S.No	Name of the author/s	Department of the teacher	Title of paper	Name of journal	Is it listed inUGC CARE/Scopus /Web of Science/other, mention	DOI
1.	Dr.R.Kalaivani	History	A Study on Corporal Punishment in Schools at Sivakasi	International Journal of Research - Granthaalaya h	J- Gate	Nil
2.	Dr.R.Kalaivani	History	Devadasi System in India and Its Legal Initiatives – An Analysis	Journal Of Humanities And Social Science	Index Copernicus	10.979
3.	Dr.T.Palaneeswari	Commerce	Awareness and Satisfaction of Customers of Commercial banks towards Banking Products and Services	Research Journal of Social science and Management	Index Copernicus	Nil
4.	Dr.M.Jayalakshmi And Mrs.K.Sounthara priya	Commerce	An analysis of level of satisfaction towards export of Printing products	International journal of research in commerce, economics and management	SJIFactor	Nil
5.	Dr.J.JeevaPriya	Commerce	Performance Evaluation of MSME under industrial estates programme	International Journal of Research in Social Science	UGC Approved Journal	https://www.indianjournals.com/ijor.aspx?target=ijor:ijrss&volume=6&issue=4&article=013
6.	Dr.K.Rajeswari & Dr.K.J.Sunmista	Commerce	Quality of Worklife of Private sector	International Journal of Research in	Scirus	https://scholar.google.com/cita

			bank employees in Sivakasi	Social Science		tions?view_op=list_works&hl=en&user=U-mJzlQAAAJ
7.	Dr.N.Rajathilagam	Commerce	Analysis of accident causes in fireworks industries by factor analysis technique	International Journal of Management and Social Sciences Research	Corpus ID: 114559536	Nil
8.	Mrs.R.Malini Devi	Mathematics	Analytical Expression for the concentration of Substrate and Product in Immobilized Enzymes system in Biofuel/Biosensor	Applied Mathematics	Web of Science	doi: 10.4236/am.2015.67105.
9.	Mrs.SP.Nandhini	Mathematics	R-alpha Open sets in topological spaces	International journal of Mathematical Archive	UGC APPROVED, Index Copernicus	Nil
10.	Mrs.SP.Nandhini	Mathematics	Study on strongly irregular fuzzy graph	International journal of Mathematical Archive	UGC APPROVED, Index Copernicus	Nil
11.	Dr.S.Pethanachi Selvam	Mathematics	Inverse complementary domination graph	International journal of Mathematical trends and technology	UGC CARE List in 2017 and Thomas Reuters	https://doi.org/10.1445/22315373/ijmtt-v25p502
12.	Dr.S.Pethanachi Selvam	Mathematics	Line Corporate domination graph	Mathematical Sciences International Research Journal	UGC approved	Nil
13.	Dr.S.Pethanachi Selvam	Mathematics	Enumeration of non- isomorphic semigraphs in Gamma_4	ARS Combinatoria	Scopus	Nil
14.	Dr.S.Pethanachi Selvam	Mathematics	Some results on Detour Radial graph	International journal of Research in Engineering and Applied Sciences	SCIRUS	Nil

15.	Mrs.R.Malini Devi	Mathematics	The Mathematical Theory of Diffusion and Reaction in Enzymes Immobilized Artificial Membrane.	The Journal of Membrane Biology	Scopus	https://doi.org/10.1007/s00232-015-9829-2
16.	Dr.N.Vijaya, Dr.S.Selvalakshmi	Physics	Investigation of Agar-based solid polymer electrolyte	Indian Journal Of Applied Research	Indian Citation Index, Pubmed	Nil
17.	Dr.F.Kingslin Mary Genova, Dr.N.Vijaya and Dr.S.Sivadevi	Physics	Lithium Ion-conducting Blend Polymer Electrolyte Based on PVA-PAN Doped with Lithium Nitrate	Polymer-Plastics Technology and Engineering	Scopus, PubMed, Web of Science	https://doi.org/10.1080/03602559.2015.1050523
18.	Dr.M.Premalatha, Dr.N.Vijaya, Dr.S.Selvalakshmi	Physics	Study of Proton Conducting Blend Polymer Electrolyte Based on PVA-PVP	PARIPEX - Indian Journal Of Research	UGC approved	Nil
19.	Ms.S.Kavitha, Ms. S.Karthieswari, Dr.K. P.Radha	Physics	Effect of PC on Solid Polymer Electrolyte Based on PVA	Global Journal for Research Analysis	UGC Approved, Indian Citation Index	Nil
20.	Dr.F.Kingslin Mary Genova, Dr.N.Vijaya, Dr.S.Sivadevi	Physics	Study on blend polymer (PVA-PAN) doped with lithium bromide	Polymer Science Series A	UGC-CARE List, Scopus	https://doi.org/10.1134/S0965545X15070032
21.	Dr.K.P.Radha	Physics	AC Impedance And Vibrational Studies Of Biopolymer Electrolyte Cornstarch: NH ₄ SCN	International Education and Research Journal	Index Copernicus, Pubmed, Indian citation index	Nil
22.	Dr.K.P.Radha	Physics	Magnitude Bode Plot Analysis of Solid Polymer Electrolyte PMMA Complexed with Adipic Acid	Der Pharma Chemica	Scopus, DOAJ	Nil
23.	Dr.K.P.Radha	Physics	Admittance Analysis of Proton	PARIPEX - Indian	UGC approved	Nil

			conducting polymer electrolyte PVA:NH 4PF6 :ZrO2	Journal Of Research		
24.	Dr.K.P.Radha	Physics	Effect of Adipic acid on PVA based proton conducting polymer electrolyte	International journal of Applied Research	Scirus, Index Copernicus	Nil
25.	Dr.N.Vijaya	Physics	Preparation and Impedance Analysis of Bio Degradable Polymer Poly Vinyl Alcohol with Amino Acid, Arginine	Polymer-Plastics Technology and Engineering	Scopus, PubMed, Web of Science	https://doi.org/10.1080/03602559.2015.103263
26.	Dr.N.Vijaya, Dr.S.Selvalakshmi, Dr.M.Premalatha	Physics	Characterization of blend polymer PVA-PVP complexed with ammonium thiocyanate	Ionics	UGC-CARE List, Scopus	https://doi.org/10.1007/s11581-016-1672-7
27.	Dr.K.P.Radha	Physics	Dielectric and ionic conductivity analysis of solid polymer electrolyte based on PMMA	International Journal of Advanced Scientific Research	Index Copernicus	Nil
28.	Dr.F.Kingslin Mary Genova	Physics	Characterization of proton conducting blend polymer electrolyte using PVA-PAN doped with NH ₄ SCN	AIP Conference Proceedings	Web of Science, Scopus	https://doi.org/10.1063/1.4947864
29.	Dr.S.Selvalakshmi and Dr.N.Vijaya	Physics	Impedance studies of a green blend polymer electrolyte based on PVA and Aloe-vera	AIP Conference Proceedings	Web of Science, Scopus	https://doi.org/10.1063/1.4948210
30.	Dr.S.Shanthi	Chemistry	Studies on Photodegradation of Bismarck Brown and Rhodamine B Dye from aqueous	International Journal of Research in Pharmacy and Chemistry	Index Copernicus	Nil

			solutions of their binary mixture by the synthesized iron oxide nano particles using sunlight and photoreactor			
31.	Dr.N.Umasangari	Chemistry	Synthesis and characterization of nano sized ZnO using conventional and microwave heating methods	International Journal Of Chemtech Research	Scopus,Index Copernicus International, Scimago.	Nil
32.	Dr.S.Shanthi	Chemistry	In silica drug activity prediction of chemical components of Acalypha Indica	International Journal of Engineering and Applied Sciences	UGC CARE	Nil
33.	Dr.P.R.Kavitha Rani	Chemistry	Synthesis Spectral Characterization and Molecular docking studies of lawsone as protein kinase inhibitors	Asian Journal of Chemistry	UGC CARE	Nil
34.	Dr.U.Umadevi	Botany	Treatment of Tetanus in Goats and Sheep	Indian Journal of Applied Research	UGC CARE list - 49333	DOI:10.36106/ijar
35.	Dr.U.Umadevi	Botany	Successful treatment of Acaricide Resistant Ticks in Cattle	The Journal of veterinary science	Index Medicus, Pubmed, NCBI, DJOF	DOI:10.36106
36.	Dr.U.Umadevi	Botany	Successful homeopathic treatment of transmissible tumour in dogs – Case report	International Journal of Science and Research	Cross ref, Mendeley	Nil
37.	Ms.S.Muthulakshmi	Botany	Influence of Brassinosteroids(BRs) on the vincristine content of Catharanthus roseus (L.) G.Don.	European Journal of Experimental Biology	Google scholar	Nil
38.	Dr.U.Umadevi	Botany	Successful treatment of recurrent milk fever in field	Journal of Agriculture and Veterinary	Cross ref, J-Gate	Nil

				Science		
39.	Dr.J.Kasthuri	Botany	Production of PHB by the bacterial isolates of various agroindustrial sites	International Journal of Pharma and Bio Sciences	Elsevier Bibliographic Database(Scopus and EMBASE) SCImago	DOI: 10.1007/978-3-319-20294-5_23.
40.	Dr.J.Kasthuri	Botany	Depolymerase and esterase assay in Alcaligenes faecalis against the copolymerized Acinetobacter junii CN1 PHBV	International Journal of Recent Scientific Research	<u>Index Copernicus Value: 2016-81.25</u> <u>Impact Factor 2017: 7.383</u> <u>'Thomson Reuters' Researcher ID: K-7356-2016</u> <u>NAAS Score: *3.65 (2020)</u>	https://doi.org/10.1016/j.procs.2015.03.178
41.	Dr.B.Deepa	Botany	Bioinspired synthesis of selenium nanoparticles using flowers of Catharanthus roseus(L.) G.Don.and Peltophorum pterocarpum(DC.) Backer ex Heyne – a comparison	International Journal of ChemTech Research	DOAJ, Scimago, Index Copernicus	Nil
42.	Dr.C.Devi Arockia Vanitha	Computer Science	Real Coded Genetic Algorithm for Development of Optimal G-K Clustering Algorithm	Springer LNCS 8947	Scopus	Nil
43.	Dr.C.Devi Arockia Vanitha	Computer Science	Gene Expression Data Classification using Support Vector Machine and Mutual Information-based Gene Selection	Procedia Computer Science, Elsevier	Scopus	Nil
44.	Dr.A.Bamini	Computer Applications	Comparative Analysis of Clustering in Suer Market Dataset	International Journal of Applied Engineering	Scopus	http://dx.doi.org/10.18782/2320-

				and Research		7051.2172
45.	Dr.S.Subha Ranjani	Microbiology	Potential influence of probiotic bacteria on the growth gut microflora of <i>Carassius auratus</i>	International Journal of Fisheries and Aquatic Studies	Scirus	Nil
46.	Dr.S.Subha Ranjani	Microbiology	Supplementation of <i>B. cereus</i> as probiotic in fish feed on <i>T. trichopterus</i> (Blue Gourami) and calculating its growth and survival	International journal of current microbiology and applied sciences (NON-UGC)	Scirus	Nil
47.	Mrs.P.Rajeswari	Microbiology	Isolation, Identification and screening of cholesterol degrading probiotics	International journal of Pure and Applied Bioscience (NON-UGC)	ISI	Nil
48.	Mrs.P.Rajeswari	Microbiology	A study on cholesterol degradation by <i>Lactobacillus</i>	Indian journal of Applied Research (NON-UGC)	Pubmed, J-Gate	Nil
49.	Mrs.P.Rajeswari	Microbiology	Invitro study on Hypocholesterolemic effect of spirulina	Indian journal of Applied Research (NON-UGC)	Pubmed, J-Gate	Nil
50.	Dr.S.Radha	Microbiology	Evaluation of probiotic potential of novel candidate <i>Enterobacter avium</i> strain from chick faecalborne <i>Alcaligenes faecalis</i>	Global Journal for Research Analysis (NON-UGC)	ICI, Scirus. J-Gate,	Nil



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.R.Kalaivani
Title of the Paper : A Study on Corporal Punishment in Schools at Sivakasi



Search results - sivaakasi-ijr | Chrome 73.0.3698.101 | A Study on Corporal Punishment | International Journal of Research -GRANTHAALAYAH

granthaalayahpublications.org/journals/index.php/granthaalayah/article/view/10316/10316_48

International Journal of Research -GRANTHAALAYAH

A Knowledge Repository

ISSN(P): 2350-0530/ISSN(P): 2394-3629

[Home](#) | [Contact](#) | [Articles](#) | [Login](#) | [Register](#)

Search

Home / Articles / Vol. 7 No. 2 (2019) Volume Issue 2 - February 2019 / Article

A STUDY ON CORPORAL PUNISHMENT IN SCHOOLS AT SIVAKASI

R.Kalaiyari
Assistant Professor of History, The Sardar Patel Institute of Management College for Women, Sivakasi (Villupattur District), Tamil Nadu, India.

DOI: <https://doi.org/10.29121/ijr.granthaalayah.v7i2.2019.2399>

Keywords: Corporal Punishment, Child, Violence, Behaviour

Abstract

Corporal punishment has been classified as an act of violence and abuse on children. Strictly defined corporal punishment is the infliction of pain intended to change a person's behaviour or to punish them. Though it mainly refers to physical pain other through hitting or forcing the child to sit stand in

PDF

Check for updates

Granthaalayah Publications

Like Page 73 Likes

Granthaalayah Publications and Printers

Like if you agree

Search results - sivaakasi-ijr | Chrome 73.0.3698.101 | A Study on Corporal Punishment | International Journal of Research -GRANTHAALAYAH

granthaalayahpublications.org/journals/index.php/granthaalayah

International Journal of Research -GRANTHAALAYAH

A Knowledge Repository

ISSN(P): 2350-0530/ISSN(P): 2394-3629

[Home](#) | [Contact](#) | [Articles](#) | [Login](#) | [Register](#)

Search

<p>Journal title International Journal of Research -GRANTHAALAYAH</p> <p>Abbreviation Int. J. Res. Granthaalayah</p> <p>Frequency Monthly</p> <p>DOI prefix 10.29121</p> <p>Online ISSN 2350-0530</p> <p>Print ISSN 2394-3629</p> <p>Editor-in-chief Dr. Tina Perwal</p> <p>Publisher Granthaalayah Publications and Printers</p> <p>Language of Publication English Hindi</p> <p>Indexing CrossRef, Google Scholar, Portico, Index Copernicus, Research Gate, Academia, Research Bible, Scisearch, J-Gate...and many more</p>	<p>International journal of research -GRANTHAALAYAH is an open access peer reviewed journal that provides monthly publication of articles in all areas of Engineering, Management, Social, Arts, Commerce, Technology and Science etc. It is an international refereed journal as well as print journal. IJRG have the aim to propagate innovative research and advance in knowledge. IJRG Journal has become a prominent contributor for the research communities and societies. IJRG Journal is making the bridge between research and developments.</p> <p>The key objective of IJRG Journal are:</p>
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Granthaalayah Publications

Like Page 73 Likes

Granthaalayah Publications and Printers

Like if you agree



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.R.Kalaivani
Title of the Paper : Devadasi System in India and Its Legal Initiatives – An Analysis

IOSR Journal Of Humanities And Social Science (IOSR-JHSS)
Volume 20, Issue 2, Part II (Feb. 2015), PP-50-53
e-ISSN: 2279-0837, p-ISSN: 2279-0643
www.iosrjournal.org

Devadasi System in India and Its Legal Initiatives – An Analysis

Mrs. R. Kalaivani

Assistant Professor of History, SFR College For Women, Sivakasi

Abstract: The Devadasi system was once prevalent right across India. It was known by different names in different places: such as *Devavarniyal* in Tamil Nadu, *Moleis* in Kerala, *Nari* in Andhra, *Miratu* in Maharashtra, *Bazari* and *Mirachi* in Andhra Pradesh and *Jagatu* and *Bazari* in Karnataka. The word "Devadasi" is derived from two words, "deva" meaning God and "dasi" meaning slave or servant-woman. Every devadasi therefore, is a slave of God. Almost in all the parts of India, there is an ancient tradition of offering young boys and girls to deities; the tradition is prevalent in many rural areas. Particularly southern Maharashtra and northern Karnataka state young boys and girls of tender age are offering to the Goddess. In Karnataka State (South India), these living sacrifices are known as "Devadasi" and they lead a wretched life. The word "Devadasi" might connote "servant of god", but in reality, a girl child who is dedicated to the goddess is no more than a prostitute. For centuries the regressive tradition of Devadasi system has been prevailing in many parts of India. Devadasi system is not only exploitation of men, women and impotent but it is the organizational exploitation of lower caste. Dalits in the religious ritual. Sanskrit gives no prescription of temple economically and socially deprived young girls and women; it is the glorification of humiliation of women.

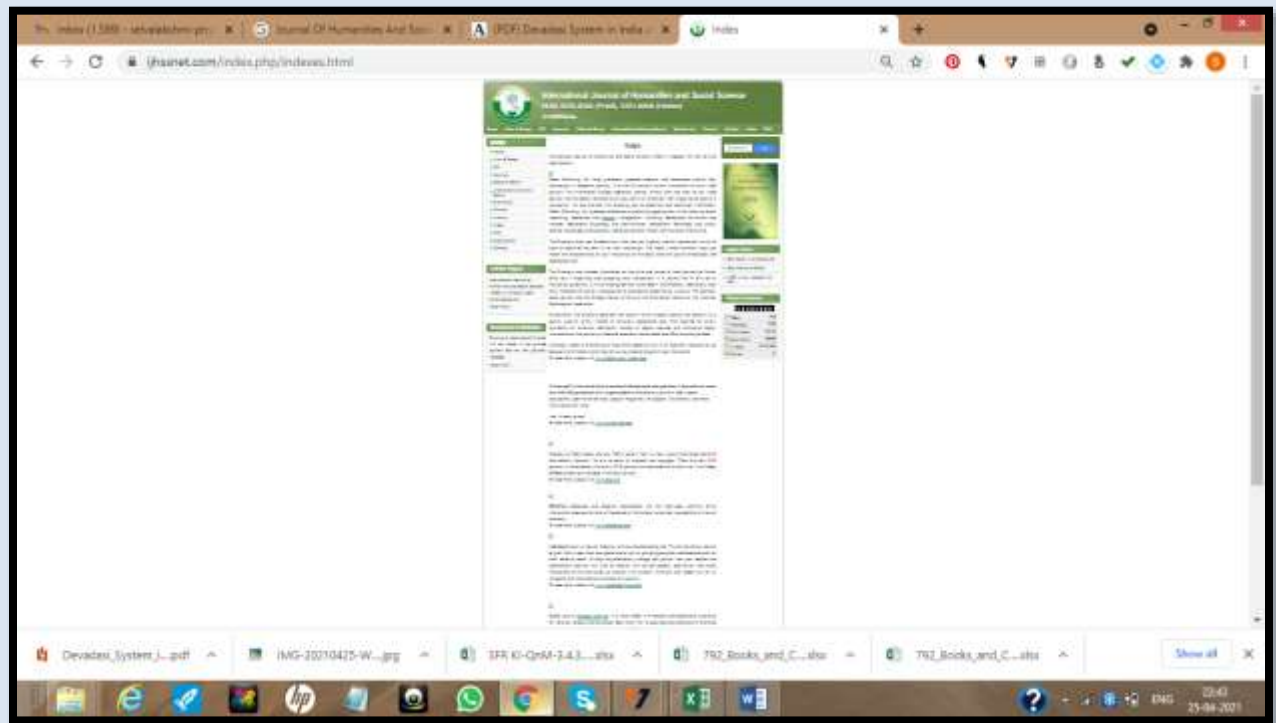
Keywords: Devadasi, Tallawana, Exploitation

I. Introduction

In South India, a devadasi (Sanskrit: servant of deva (god) or deti (goddess)) is a girl "dedicated" to worship and service of a deity or a temple for the rest of her life. The dedication takes place in a Purnakama ceremony which is similar in some ways to marriage. Originally, in addition to taking care of the temple and performing rituals, these women learned and practiced Bharatanatyam, Odissi and other classical Indian artistic traditions and enjoyed a high social status as dance and music were essential part of temple worship. Devadasi are Hindu and women were dedicated to temple & god's service. They developed the system of music and dance employed during temple festivals. Nattarasans were the male accompanists of the devadasi during her performance. They conducted the music orchestra while the devadasi performed her service.

The Myth

The myth behind dedication of girls to the goddess goes like this: Ravana, consort of sage Saramadaga, was a pure woman. She was so pure, that she could carry water in a freshly-washed pot. She would collect one pot everyday on the bank of the river where she used to fetch water. On one of these trips, she happened to see a God-dervel couple bathing in the river. She was struck by the handsome looks of the male partner as she saw his reflection in the river water. But, because of this 'alleged violation' of her marital vows, the pot broke and





**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.T.Palaneeswari
Title of the Paper : Level of Awareness and Satisfaction of Customers of Commercial banks towards Banking Products and Services



Search by Title or ISSN:

Editorial Board
The Editorial Staff who assist in one of the review will receive the Editor's Certificate.

Register journal - (Free Service)
In a word, and produce editions of scientific journals.

Manage journal - (Free Service)
The website allows you to have information about the journal, editors, and authors, etc.

Editorial Board
Full list of journals from database of iJournals.com. It contains currently over 20000 journals from all over

Research Journal of Social Science & Management (RJSSM)

SJIF 2021:

Under evaluation	Review evaluation SJIF
Area 1: 100000000	2020: 142.00000
Subarea 1: 100000000	2020: 7.000
Subarea 2: 100000000	2020: 6.000

The journal is indexed by:

[SJIF](#)

Basic information

Website	Research Journal of Social Science & Management (RJSSM)
ISSN	2753-7973 (E)
URL	http://www.scientificjournals.com or www.sjif.com



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.M.Jayalakshmi And Mrs.K.Sounthara priya
**Title of the Paper : An analysis of level of satisfaction towards export of
Printing products**

The screenshot shows a web browser displaying the IJRCM website. The page features a blue and green header with the IJRCM logo. On the left, a green box displays 'Total Visit's 001863799'. The main content area is titled 'IJRCM Journal's' and lists the following details:

- Title:** AN ANALYSIS OF LEVEL OF SATISFACTION TOWARDS EXPORT OF PRINTING PRODUCTS
- Authors:** K. SOUNTHARA PRIYA & DR. (MRS.) M. JAYALAKSHMI
- Journal Title:** International Journal of Research in Commerce, Economics and Management
- Date:** 2015-11-01
- File:** [Click to Download PDF](#)

On the right side of the page, there is an orange button labeled 'Online Submission'. At the bottom of the page, there is a copyright notice: 'Copyright © 2015 IJRCM. All Rights Reserved.' The browser's address bar shows the URL 'http://www.ijrcm.in'. The Windows taskbar at the bottom indicates the time as 12:28 PM on 24/09/2015.



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.J.JeevaPriya
Title of the Paper : Performance Evaluation of MSME under industrial estates programme

The screenshot shows a web browser displaying the article page for "Performance Evaluation of Msme Under Industrial Estates Programme" on the IndianJournals.com website. The page includes a navigation menu, a sidebar with various links, and the main content area with the article title, author information, abstract, and keywords. The abstract discusses the development of small scale units in India and the role of industrial estates. The keywords include MSME, Industrial Estate, and SIDCO.

INTERNATIONAL JOURNALS OF ... Performance Evaluation of Msme ...
IndianJournals.com
Home About us My Profile Registration Products Article Submissions Usage Statistics Price List 2021 Contact Us Tutorial
Login / Register
Email id Log In
International Journal of Research in Social Sciences
Year : 2016, Volume : 6, Issue : 4
First page : (162) Last page : (174)
Online ISSN : 2249-2486
Performance Evaluation of Msme Under Industrial Estates Programme
Priya Mrs. J. Jeeva*, M. Com., M. Phil., PGDCA., PGDPM
*The Standard Fireworks Rajaratnam College for women, Sivakasi
Online published on 28 July, 2016.
Abstract
In India, there has been a phenomenal development of small scale units, contributing significantly to the overall development of the country. Industrial Estates are regions where infrastructure facilities are provided for and thus a conducive environment is created to attract small and medium scale industries. In Virudhunagar District, the industrial units in all three Industrial Estates are growing rapidly towards the future development. The industrial units' contribution to increase of industrial productivity, growth of exports and in generation of more employment definitely help to increase the GDP of our country. To increase the contribution of industrial units in industrial estate, the industrial estate authorities should take step to increase the awareness regarding the industrial estates and the facilities available, concession given in power, procuring raw material and other special attractive scheme have to be reached among the industrial group. Certainly this will help to attain the words of Dr. Manmohan Singh, "the key to our success in employment lies in the success of manufacturing in the small scale sector".
Keywords
MSME-Micro, Small and medium Enterprises, IE-Industrial Estate, IEP-Industrial Estate Programme SIDCO-Small Industries Development Corporation, TANSIDCO-Tamil Nadu Small Industries Development Corporation.
Buy Now PDF
Activate Windows
Go to Settings to activate Windows.
Type here to search
4:03 PM
16/03/2021

Start 3_ZIJMR_VOL7_15 15. Dr.J.Jeeva Priy Indian Journa Indian Journals -

https://www.indianjournals.com/UGCApprovedPublications.aspx

IndianJournals.com
A Product of Dive Enterprises Pvt. Ltd.

UGC-Care/Scopus/WOS Listed Journals

ALL A B C E I J L M O P R W

Results: 45 Show per page 20 Page 1 of 3 Search Journal/ISSN:

Publications List

journal	OnlineISSN	Frequency	Subject	Publisher	Status
Agricultural Research Journal	2395-146X	Quarterly	Agriculture	Punjab Agricultural University	UGC Group I
Agricultural Science Digest - A Research Journal	0976-0547	Quarterly	Agriculture, Biology	Agricultural Research Communication Centre	WOS
Anil Aggrawal's Internet Journal of Forensic Medicine and Toxicology	0972-8074	Half-Yearly	Medical Science	Anil Aggrawal	SCOPUS
Animal Nutrition and Feed Technology	0974-181X	Thrice a year	Veterinary/Animal Sciences	Animal Nutrition Association	SCOPUS/WOS
Applied Biological Research	0974-4517	Thrice a year	Agriculture, Biology	Centre for Advancement of Applied Sciences	WOS
BIOINFOLET - A Quarterly Journal of Life Sciences	0976-4755	Quarterly	Agriculture, Medical Science, Veterinary/Animal Sciences	Dr. Anil M. Mungikar	WOS

Type here to search

4:00 PM 16/03/2021



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.K.Rajeswari & Dr.K.J.Sunmista
Title of the Paper : Quality of Worklife of Private sector bank employees in Sivakasi

The screenshot shows the article page on IndianJournals.com. The article title is "Quality of Work Life of Private Sector Bank Employees in Sivakasi" by Dr. Sunmista K.J.¹ and Dr. Rajeswari K.². The journal is the International Journal of Research in Social Sciences, Volume 15, Issue 2, published in 2016. The abstract discusses the need for research on the quality of work life of private sector bank employees in Sivakasi, India, and mentions that the results were found to be favorable to the bank regarding the quality of work life of their employees. The keywords listed are Human Resources, Quality of work life, Attitude. There are buttons for "Buy Now" and "PDF".



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.N.Rajathilagam
Title of the Paper : Analysis of accident causes in fireworks industries by factor analysis technique


The screenshot displays the Semantic Scholar interface for a research paper. The paper title is "Analysis of Accident Causes in Firework Industries by Factor Analysis Technic" by N. Rajathilagam & Associates, published in 2019. The abstract states that in the fireworks industry, most accidents occur due to a lack of awareness of safety systems, and the paper uses factor analysis to identify causes. The interface includes a search bar, a "2 Citations" section with a "View All" button, and a "Tables from this paper" section. The bottom of the page features a blue banner with a disclaimer and an "ACCEPT & CONTINUE" button. The Windows taskbar is visible at the bottom of the browser window.

INDEX COPERNICUS
INTERNATIONAL

ICI World of Journals | ICI Journals Master List | ICI World of Papers | Contact

ICI World of Journals | International Journal of Management and Social Sciences Research

International Journal of Management and Social Sciences Research



English title: International Journal of Management and Social Sciences Research
ISSN: 2791-0421 online
e-ISSN: 2791-0421
Website: <http://www.ijmssr.com>
Publisher: ICI World of Journals
Country: IN
Language of publication: EN

Deposited publications: 0 | Full text: 0 | Abstracts: 0 | Keywords: 0 | References: 0

Journal description | Details | Scientific profile | Editorial office | Publisher | Metrics

International Journal of Management and Social Sciences Research is a peer-reviewed journal. The journal publishes research papers in the fields of business, management, marketing, finance, economics, human resource management, Social Sciences and relevant subjects while showcasing emerging paradigms in management theories and practices, and adding value to the existing body of

Non-indexed in the ICI Journals Master List 2019

Not reported for evaluation | Actual ratings: >

Custom | Reports: 2019-2020

8 number of journal citations

Included anti-clones: 0

Most pages 2019 total

Actual ratings: >

Please contact with

As part of our website we use cookies to provide you with services at the highest level, including in a manner tailored to individual needs. Using the site without changing the settings for cookies results in using them to your device. You can change cookie settings any time you visit to your web browser. More details in our Cookies Policy.

Activate WJ
Go to Settings

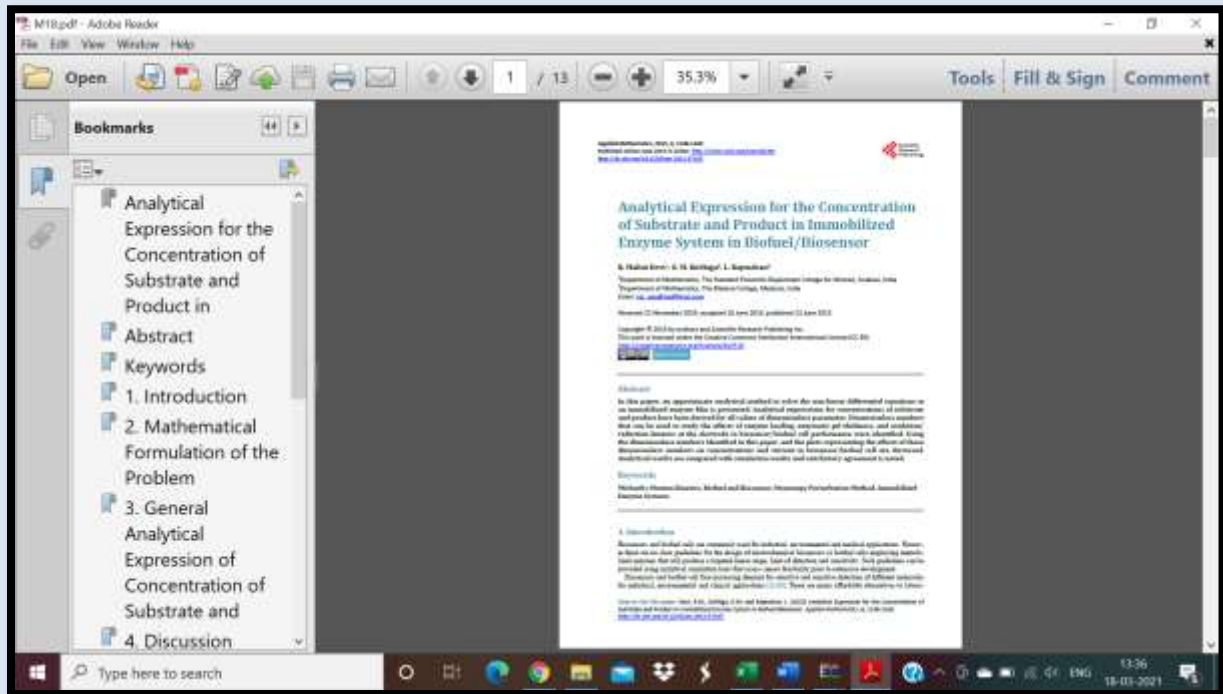
12:51 PM
2/26/2021



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Mrs.R.Malini Devi
Title of the Paper : Analytical Expression for the concentration of Substrate and Product in Immobilized Enzymes system in Biofuel/Biosensor

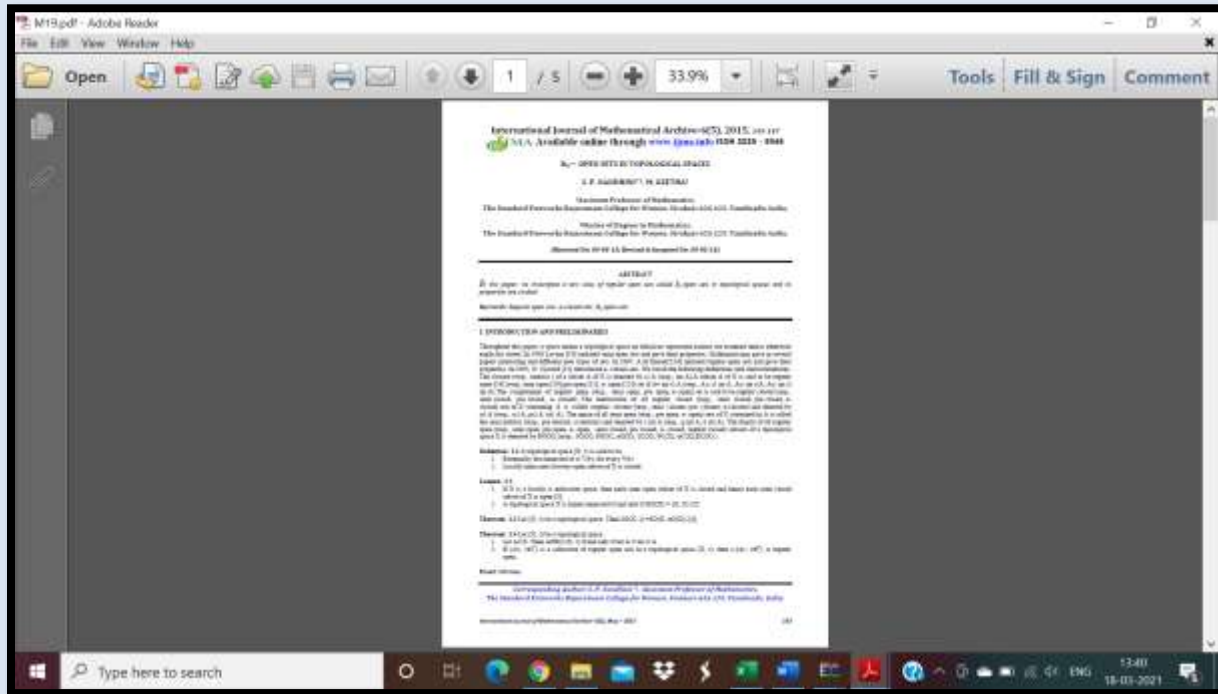


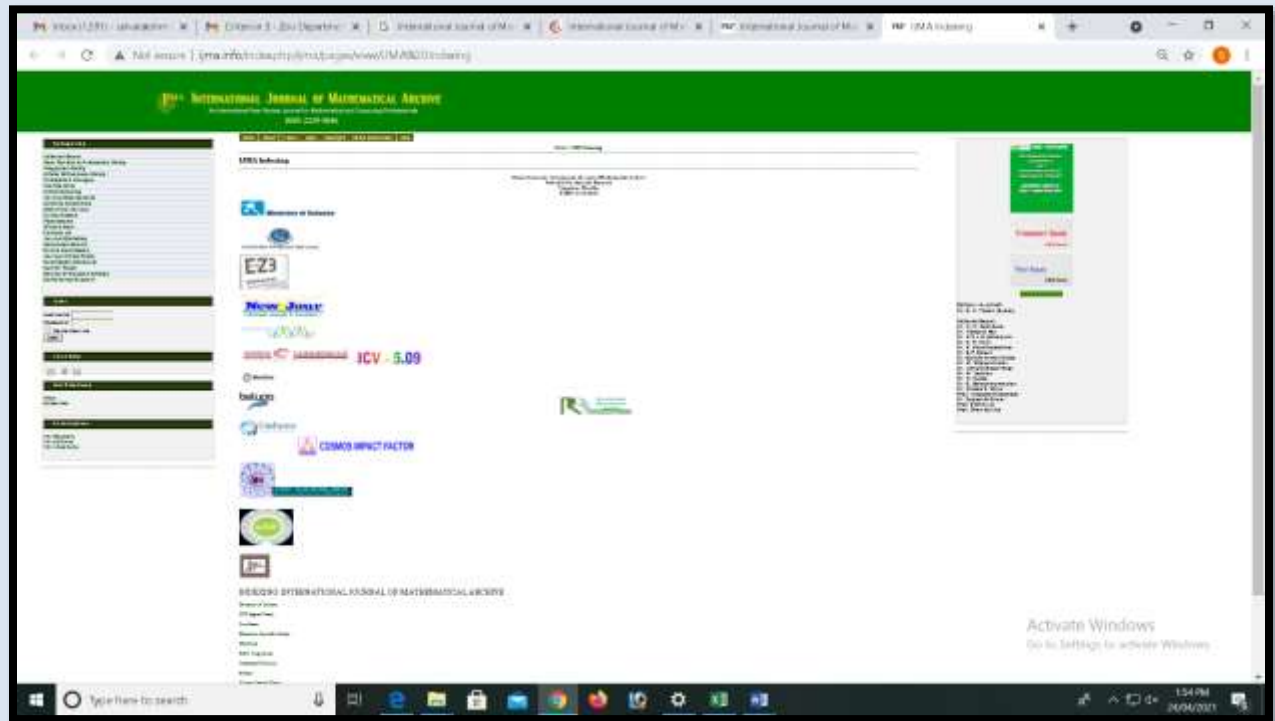


**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Mrs.S.P.Nandhini
Title of the Paper : R-alpha Open sets in topological spaces



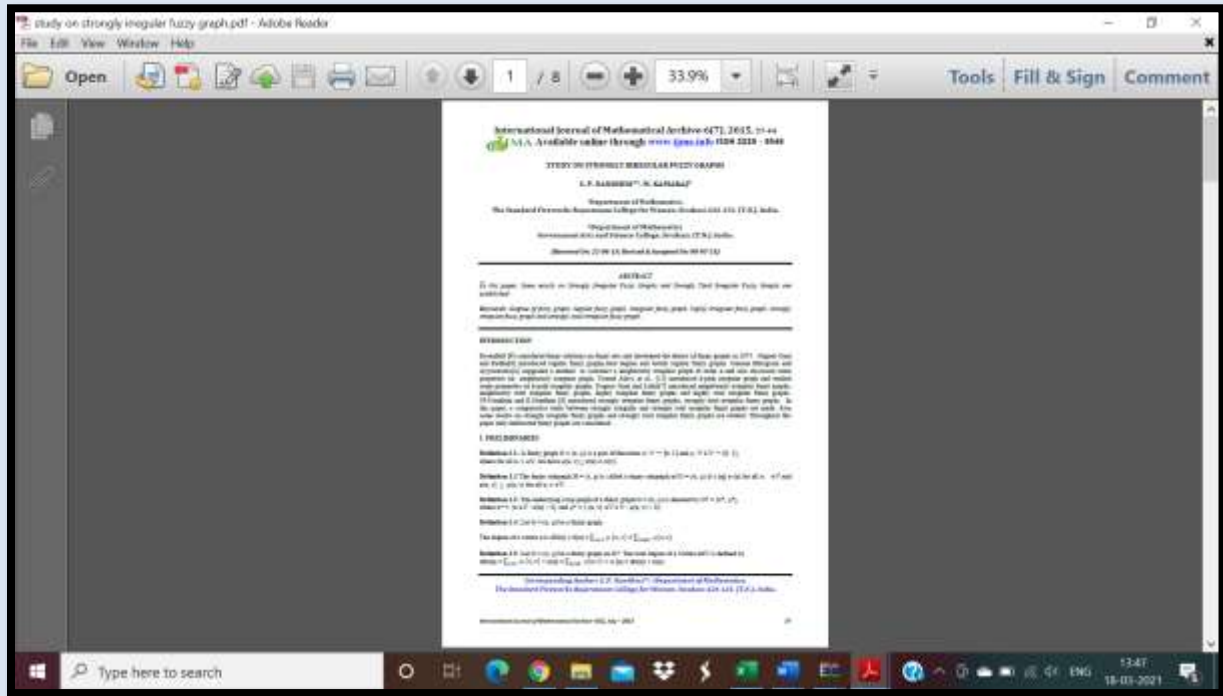




**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Mrs.S.P.Nandhini
Title of the Paper : Study on strongly irregular fuzzy graph



International Journal of Mathematical Archive

An International Peer Review Journal for Mathematical and Computing Professionals

ISSN 2229-5046

Home About Issues Login Copyright Online Submission Help

Home > Vol 03 No 7 (2021) > ARTICLES

+ RA— OPEN SETS IN TOPOLOGICAL SPACES
J. K. SHARMA & S. K. TIWARI

ABSTRACT

In this paper we investigate a new class of regular open sets called R_2 open sets in topological spaces and in particular we studied

KEYWORDS

Regular open sets, α -closed sets, R_2 open sets

FULL TEXT

PDF

For more information on this article, please contact the Editor-in-Chief at editor@ijma.in

Copyright © International Journal of Mathematical Archive

1012716

Editor-in-chief:
 Dr. S. K. Tiwari (India)

Editorial Board:
 Dr. D. K. Kachhara
 Dr. Haseyin Bor
 Dr. S. P. Acharyulu
 Dr. V. R. Kulli
 Dr. V. Ananthaswamy
 Dr. S.P. Goyal
 Dr. Sangeet Kumar Datta
 Dr. M. Vijaya Kumar

Available online at <http://www.ijma.in>

Current Issue [Click here](#)

Past Issues [Click here](#)

Username:
 Password:
 Remember me

Font Size

International Journal of Mathematical Archive

Published By: Scientific Research
 Frequency: Monthly
 EISSN: 2229-5046

Directory of Science

TOGETHER WE REACH THE GOAL

E-Z3
 Elektronische Zeitschriftenbibliothek

New Jour
 "Electronic Journals & Newsletters"

INDEX COPERNICUS ICMJ 5.09

WorldCat

Editor-in-chief:
 Dr. S. K. Tiwari (India)

Editorial Board:
 Dr. D. K. Kachhara
 Dr. Haseyin Bor
 Dr. K.V.L.N. Acharyulu
 Dr. V. R. Kulli
 Dr. V. Ananthaswamy
 Dr. S.P. Goyal
 Dr. Sangeet Kumar Datta
 Dr. M. Vijaya Kumar
 Dr. Umraw Singh Negi
 Dr. M. Jeevan
 Dr. D. Datta

Available online at <http://www.ijma.in>

Current Issue [Click here](#)

Past Issues [Click here](#)

Username:
 Password:
 Remember me

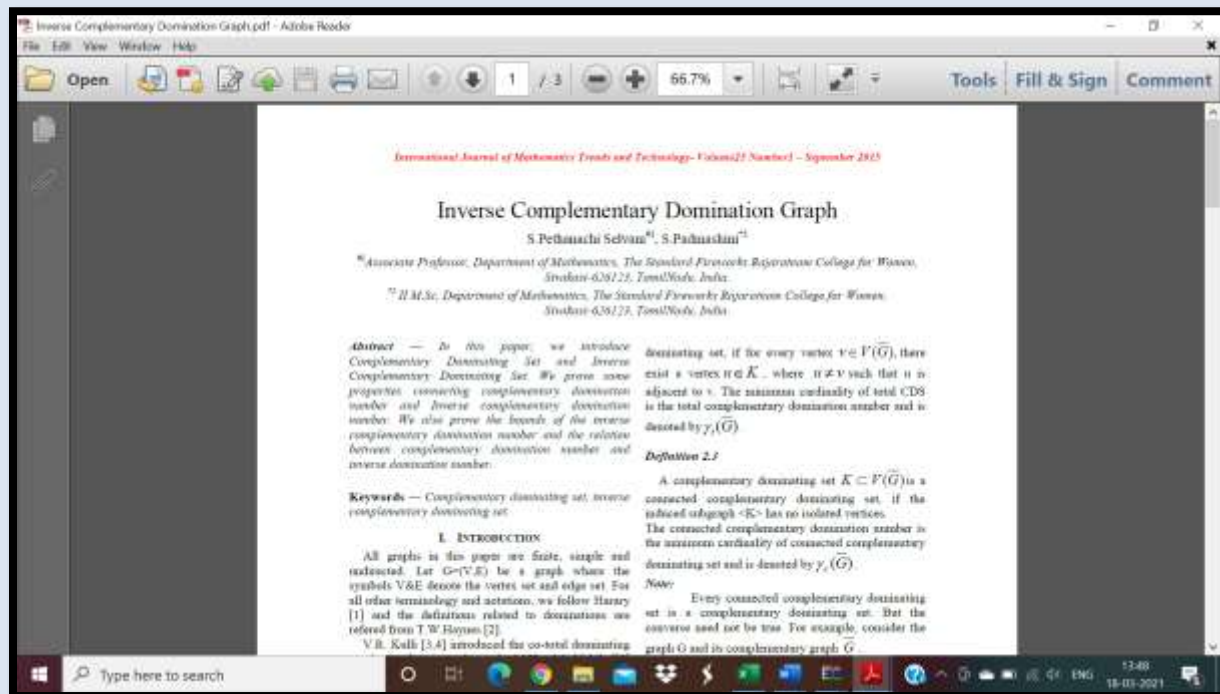
Font Size



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.S.Pethanachi Selvam
Title of the Paper : Inverse complementary domination graph



The screenshot displays the homepage of the International Journal of Mathematics Trends and Technology (IJMTT). The website features a dark blue header with the journal's logo and title. Below the header, there is a navigation menu on the left and a central section for a call for papers. The 'Indexing' section is prominently displayed, listing various academic databases and search engines that index the journal. A 'Show all' button is located at the bottom right of the indexing list.

International Journal of Mathematics Trends and Technology
Scholarly Peer-reviewed Research Publishing Journal

IJMTT

- Current Issue
- Archives
- Author Instruction
- Review Process
- Topics
- Conference Sponsors
- Special Issue Proposal
- Annual Subscription
- Article Processing Charges
- Mode of Payment
- Join as an Editor

IJMTT Call for Paper March - 2021
UGC Approved Journal in 2017

Indexing

- crossref
- scopus
- WorldCat
- Google Scholar
- CiteSeerX
- Journal Seek
- THOMSON REUTERS
- OCLE

2.53
Impact Factor
Scopus Report Analysis of IJMTT (2016-2020)
Google Scholar, Cross Ref, etc.

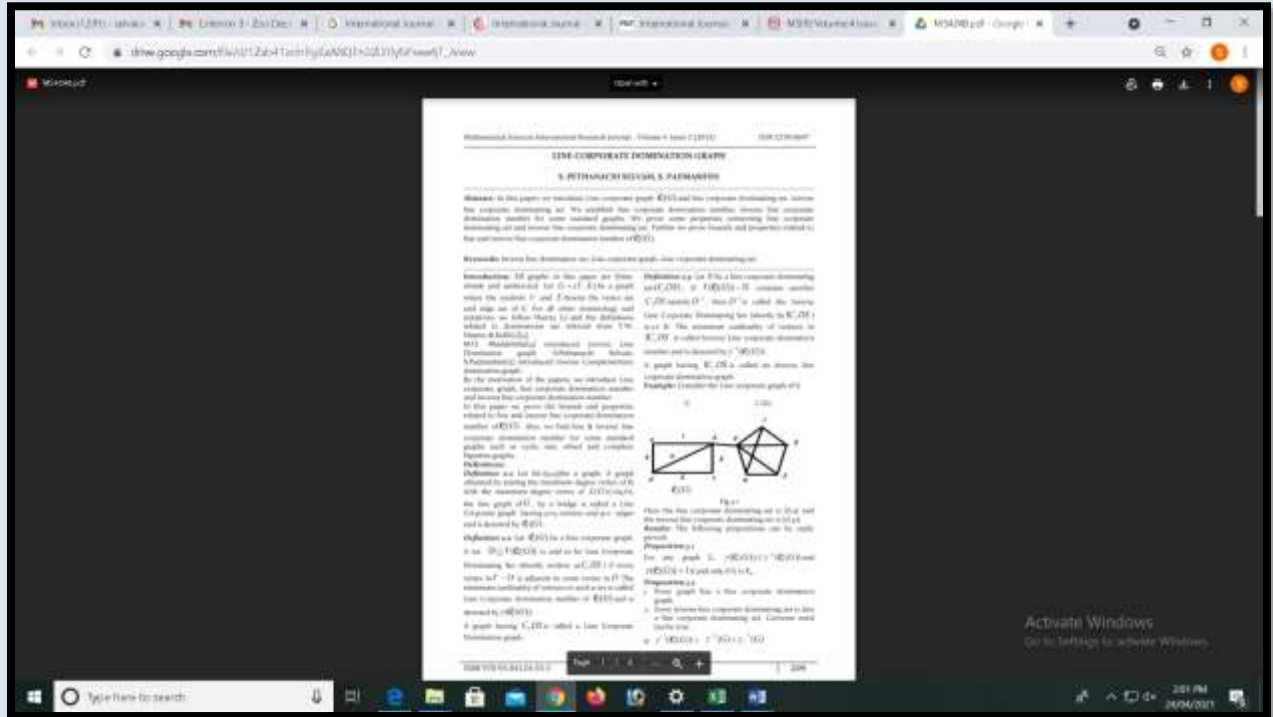
Show all



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.S.Pethanachi Selvam
Title of the Paper : Line Corporate domination graph



IMRF JOURNALS
Publish in Pride

On Average Every Issue Publishes 33 Papers
Our Contributors Publish On Average 1 paper in a Year
www.imrfedu.org | www.imrfjournals.com
Call Now: +91 9533421234
* Academic Excellence Awards

Home | Mathematics | Engineering | Life Sciences | Business Sci | English Studies | Human Rights | Social Sciences | Arts & Edu | Proceedings | Books | Contact

Mathematical Sciences

Mathematical Sciences International Research Journal

Print ISSN - 2278 - 8697
Editors: Dr.Ratnakar D D, Dr M. Lellis Thangar
Managing Editor: Dr P. Vijaya Vast
Publication Charges : Free*
First Publication : 2012
Publisher: IMRF Journals

Mathematical Sciences International Research Journal | Bi-Annual Blind Peer Reviewed (Refereed)

MSRJ Volume 4 Issue 2 (Nov 2014)

Titles & Authors	JrPgNo	Reference	FullPaper
COMPOSITE MULTIPLICATION OPERATORS ON L_2 -SPACES OF VECTOR VALUED FUNCTIONS - S. Senthil, P. Thirumangalakudi, C. S. Srinivasan	91-94	MS4201	Download

UGC Journal
UGC Approved Journals List

HOME SUBJECTS PUBLISHER CONTACT US

Publisher

Home > Publisher > IMRF Journals, Vijayawada, India

IMRF Journals, Vijayawada , India Journals

Record Show: 1 Journals found for "IMRF Journals, Vijayawada , India"

Sr	Journal Title	Subject	ISSN	E-ISSN
1	Arts and Education International Research Journal	Arts and Humanities(all)	22491353	-



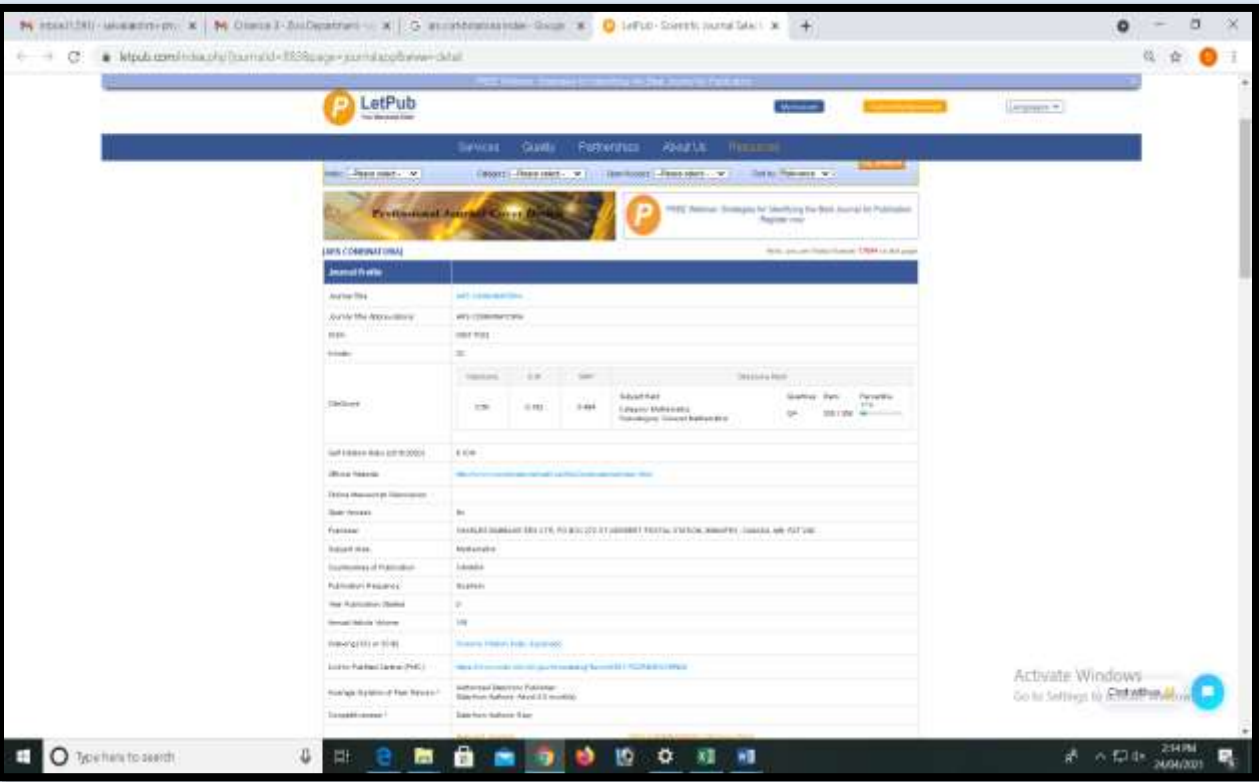
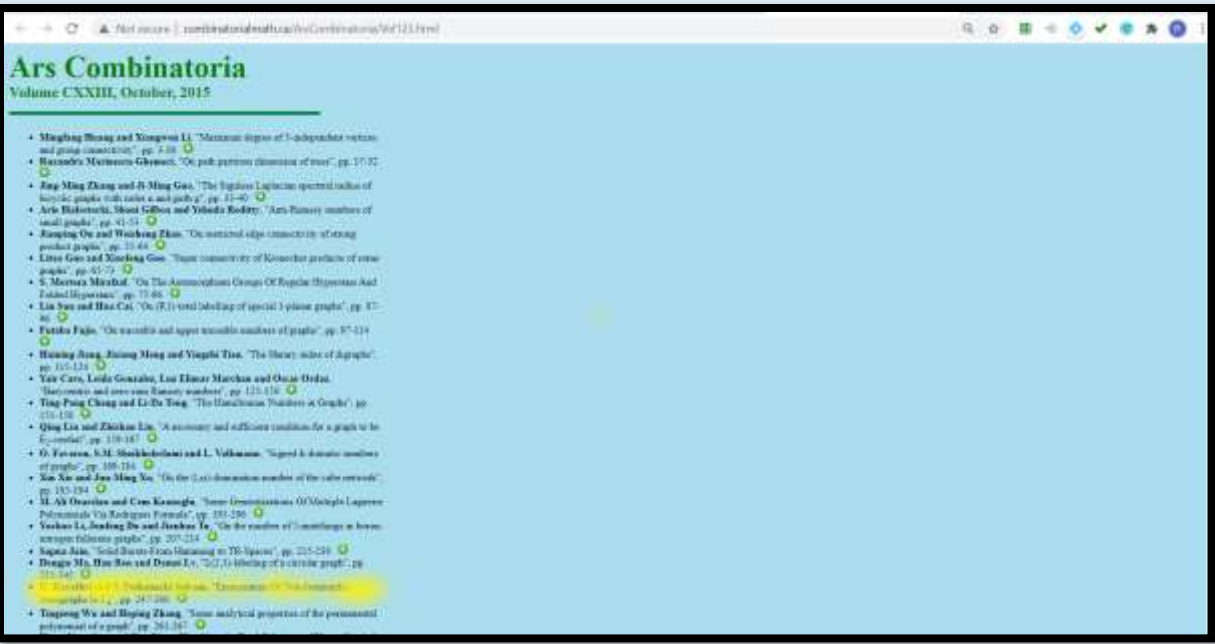
**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.S.Pethanachi Selvam

Title of the Paper : Enumeration of non- isomorphic semigraphs in $\Gamma_{n,4}$

The screenshot shows a web browser displaying a ResearchGate article. The article title is "ENUMERATION OF NON-ISOMORPHIC SEMIGRAPHS IN $\Gamma_{n,4}$ ". The authors listed are K. Kayathi and S. Pethanachi Selvam. The article is dated October 2015 and is from the "Journal of Combinatorics, Mathematics and Statistics". The abstract states: "A semigraph G is edge complete if every pair of edges in G are adjacent. In this paper, we enumerate the non-isomorphic semigraphs in one type of edge complete $(g,3)$ semigraphs without isolated vertices." The page also features a "Request full-text PDF" button and a "Download citation" button. The ResearchGate logo and navigation links are visible at the top of the page.

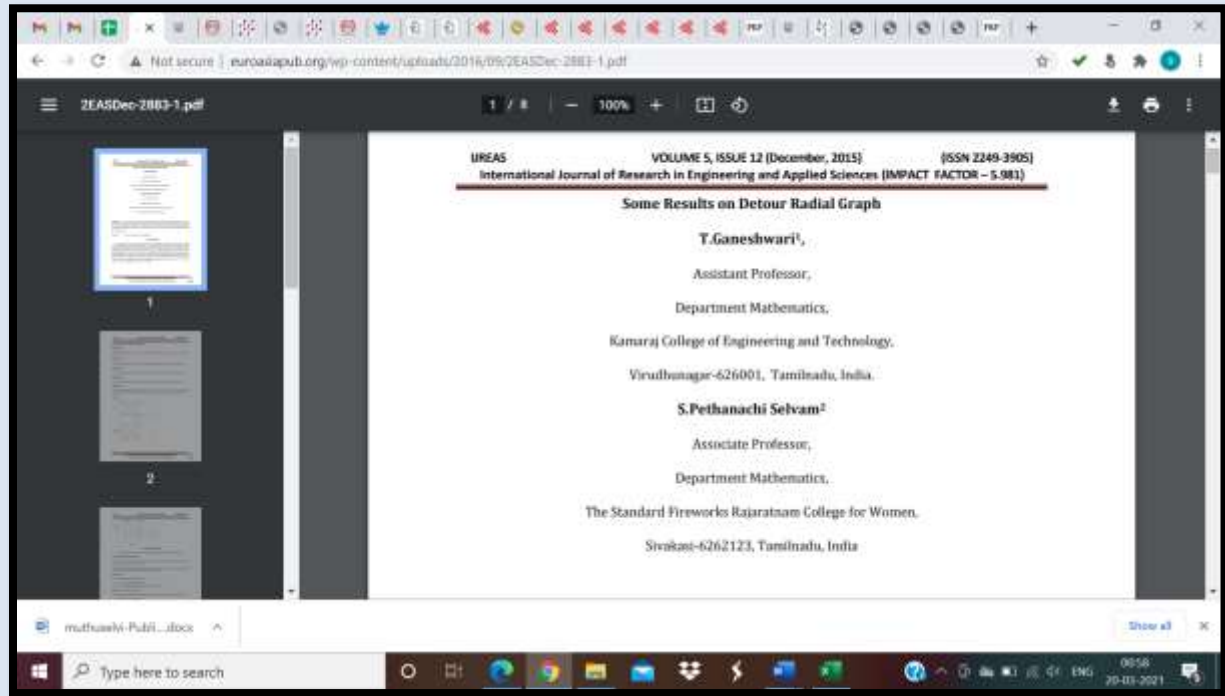




**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.S.Pethanachi Selvam
Title of the Paper : Some results on Detour Radial graph







**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Mrs.R.Malini Devi
Title of the Paper : The Mathematical Theory of Diffusion and Reaction in Enzymes Immobilized Artificial Membrane.

The screenshot shows a web browser window displaying a PubMed article. The browser's address bar shows the URL: <https://pubmed.ncbi.nlm.nih.gov/26265446/>. The article title is "The Mathematical Theory of Diffusion and Reaction in Enzymes Immobilized Artificial Membrane. The Theory of the Non-Steady State". The authors listed are Malinidevi Ramanathan¹, Rasi Muthuramalingam², and Rajendran Lakshmanan³. The journal information is "Membr Biol. 2015 Dec;248(6):1127-35, doi: 10.1007/s00232-015-9829-2. Epub 2015 Aug 12." The abstract text begins: "In this paper, mathematical model pertaining to the decomposition of enzyme-substrate complex in an artificial membrane is discussed. Here the transport through liquid membrane phases is considered. The model involves the system of non-linear reaction diffusion equations. The non-linear terms in this model are related to Michaelis-Menten reaction scheme. Approximate analytical expressions for the concentrations of substrate and product have been derived by solving the system of non-linear reaction diffusion equations using new approach of homotopy perturbation method for all values of Michaelis-Menten constant, diffusion coefficient, and rate constant. Approximate flux expression for substrate and product for non-steady-state conditions are also reported. A comparison of the analytical approximation and numerical simulation is also presented. The results obtained in". The right sidebar contains options for "FULL TEXT LINKS" (SpringerLink), "ACTIONS" (Cite, Favorites), "SHARE" (Twitter, Facebook, Print), "PAGE NAVIGATION" (Title & authors, Abstract, Similar articles), and a search bar at the bottom.

The Mathematical Theory of Di... x The Journal of Membrane Biol... x
https://www.springer.com/journal/232

We use cookies to personalise content and ads, to provide social media features and to analyse our traffic. We also share information about your use of our site with our social media, advertising and analytics partners in accordance with our [Privacy Policy](#). You can manage your preferences in Cookie Settings. [Manage Cookies](#) [OK](#)

Electronic ISSN 1432-1424 **Print ISSN** 0022-2631

Abstracted and indexed in

AGRICOLA	Japanese Science and Technology Agency (JST)	ProQuest Natural Science Collection
BIOSIS	Journal Citation Reports/Science Edition	ProQuest Neurosciences Abstracts
Biological Abstracts	Medline	ProQuest Nursing & Allied Health Database
CNKI	Meta	ProQuest Pharma Collection
Chemical Abstracts Service (CAS)	Naver	ProQuest SciTech Premium Collection
Current Contents/ Life Sciences	OCLC WorldCat Discovery Service	ProQuest Technology Collection
Dimensions	Pathway Studio	ProQuest Water Resources Abstracts
EBSCO Academic Search	ProQuest Agricultural & Environmental Science Database	ProQuest-ExLibris Primo
EBSCO Biomedical Reference Collection	ProQuest Biological Science Database	ProQuest-ExLibris Summon
EBSCO CINAHL	ProQuest Biotechnology Research Abstracts	Reaxys
EBSCO Discovery Service	ProQuest Central	SCImago
EBSCO STM Source	ProQuest Engineering	SCOPUS
EMBASE	ProQuest Environmental Science	Science Citation Index
EMBiology	ProQuest Health & Medical Collection	Science Citation Index Expanded (SciSearch)
Elsevier Biobase	ProQuest Health Research Premium Collection	TD-Net Discovery Service
https://www.springer.com/gp/privacy-policy		https://www.springer.com/gp/privacy-policy

Type here to search


18:53 18-01-2021



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.N.Vijaya, Dr.S.Selvalakshmi
Title of the Paper : Investigation of Agar-based solid polymer electrolyte

RESEARCH PAPER	Physics	Volume : 5 Issue : 6 June 2015 ISSN - 2249-555X
	Investigation of Agar-based solid polymer electrolyte	
KEYWORDS	FTIR, Conductance spectra, UV-Vis spectroscopy, Activation energy	
S.Selvalakshmi		N.Vijaya
Department of Physics, S.F.R. College for Women, Sivakasi-626123, Tamil Nadu, India		Department of Physics, S.F.R. College for Women, Sivakasi-626123, Tamil Nadu, India
M. Premalatha		S.Monisha
Department of Physics, S.F.R. College for Women, Sivakasi-626123, Tamil Nadu, India		Materials Research Centre, Coimbatore-641045, Tamil Nadu, India
ABSTRACT Biopolymer - an environmentally friendly and harmless polymeric material continues to show good growth potential. Several factors such as soaring oil prices, worldwide interest in renewable resources, growing concern regarding greenhouse gas emissions and a new emphasis on waste management have created renewed interest in biopolymers. Focusing on these interests, a new solid polymer electrolyte based on the biopolymer Agar-Agar doped with Ammonium thiocyanate was prepared in different compositions by solution casting technique. The chemical bondings of Agar and Agar-salt complexes were investigated from FTIR analysis. The samples were characterized by AC impedance spectroscopy and UV-Vis spectroscopy. The highest conductivity of $1.02 \times 10^{-5} \text{ S cm}^{-1}$ was obtained for the sample of composition 50 mol% of Agar:50 mol% of NH_4SCN at room temperature. The polymer samples exhibited Arrhenius behaviour and the activation energy of the highest conductivity sample was 0.237 eV. The UV-Vis spectra showed that band gap decreased on the addition of NH_4SCN salt to Agar.		
1. Introduction The accelerated population growth, environmental pollution and energy critical global issues lead to the development and application of renewable and environmentally friendly energy materials [1]. Attention has been focused on the application of natural macromolecules because of their biodegradability, low production cost as well as good physical and chemical properties [2]. Over the last few years, commercial agar has been extensively tested in order to apply it as an electrolyte in solid state devices [3]. Araki [4] referred to agar as a gel-forming substance obtainable from certain species of red seaweeds called "agarophytes". Agar is a biodegradable, hydrophilic, cheap, non-toxic, and chemically stable natural polymer [5]. Agar is a polysaccharide which consists of agarose and agaropectin. Agarose is thought to play a major role in the mechanical behaviour of agar, and agaropectin also affects the behaviour slightly [6]. In the present study, solid polymer electrolyte based on biopolymer, Agar-Agar doped with ammonium thiocyanate was prepared by solution casting technique and characterized by FTIR, ac impedance and UV-Vis spectroscopy techniques.		
2. Experimental Details: Agar is insoluble in normal water but readily soluble in boiling water. So Agar-Agar (Colloids Impex Pvt Ltd) of average molecular weight 8000-100000 was dissolved in boiling water and stirred continuously in a magnetic stirrer until a transparent solution was obtained. Then NH_4SCN (Reachem) of molecular weight 76.12 was added to the agar solution. The polymer films were prepared with various compositions such as (100:0), (90:10), (80:20), (70:30), (60:40), (50:50) and (40:60) in molar ratios of Agar and NH_4SCN . The mixture was stirred for 1 hour to obtain a homogeneous mixture. Then the solutions were casted in polypropylene petri dishes and were dried in the oven at 50°C. Free standing transparent polymer films of thickness ranging from 0.012 cm to 0.025 cm were obtained after 48 hours.		
The FTIR spectra for the polymer membrane of various compositions were recorded in the range of 500 - 4000 cm^{-1} at room temperature using a SHIMADZU-IR Affinity-1 spectrometer. The electrical measurements for the polymer samples were carried out with a HIOKI-3532 LCZ HiTester in the frequency range of 42 Hz - 1 MHz by applying 1.1 V, over the temperature range 303 K - 343 K. The UV-Vis spectra for the samples were obtained from UV- 2400 PC series within 200-900 nm range of UV- spectrum.		
3. Results and Discussion: 3.1. FTIR analysis FTIR spectroscopy is a versatile tool to analyze the polymeric materials since it provides information about the interaction between the polymer and the ions [7]. Figure 1 shows the FTIR spectra of pure Agar and Agar doped with NH_4SCN in different molar ratio.		
The characteristic peak of pure Agar at 1641 cm^{-1} assigned to C=O stretching is shifted to 1637 cm^{-1} in 60:40 and 50:50 compositions of NH_4SCN doped Agar polymer electrolytes. The characteristic peak of pure Agar at 1477 cm^{-1} and 1039 cm^{-1} are assigned to CH_2 bending and scissoring respectively have been shifted to lower wavenumbers at 1421 cm^{-1} and 1033 cm^{-1} respectively in doped samples.		
780 * INDIAN JOURNAL OF APPLIED RESEARCH		



Journal Of Medical Science

IJAR

INDIAN JOURNAL OF APPLIED RESEARCH

PRINT ISSN NO 2249 – 555X
IF OF IJAR: 6.03 (SJIF)
PEER REVIEW, INTERNATIONAL JOURNAL
JOURNAL DOI : 10.36106/IJAR

Monday, Mar,18

5:30:54 AM

editor@ijar.ir

+91 88 66 00 3

+91 88 66 11 3

HOME ABOUT US EDITORIAL BOARD AUTHOR GUIDELINES INDEXING & ABSTRACTING PAST ISSUES PUBLICATION ETHICS CONTACT 1

UPDATES

MEDICAL COUNCIL OF INDIA (MCI) VALID PUBLICATION AS PER FEBRUARY 2020 GAZETTE

[CLICK HERE](#)



I - Indian J - Journal of A - Applied R - Research

[Upload your Article](#)

[Author Guidelines](#)

[Download](#)

UPDATES

INTERNATIONAL INDEXED JOURNAL PEER REVIEWED MONTHLY PRINT JOURNAL DOUBLE BLIND

 **36572**
Manuscript submission

 **9855**
Publish Research Papers

 **26.94**
Acceptance Ratio

 **100**
Articles from over 100 Countries

BOOK PUBLICATION SPECIAL ISSUES CURRENT ISSUE FAQs SEARCH SUBSCRIPTION FORM PEER REVIEW PROCESS SISTER JOURNALS

Current Issue

March 2021 

Online Payment



Indian Authors



International Authors

[Join as Reviewer](#)

Indexing & Abstracting

UGC Sr.No.49333

IJAR - Indian Journal of Applied Research

IJAR - Indian Journal of Applied Research is a double reviewed monthly print journal that accepts research works from scholars, academicians, professors, doctorates, lecturers, and corporate in their respective expertise of studies. Work after publication will be retrievable on the website bifurcated based on issues of the month and its publication date. Moreover, the journal serves the research world since October, 2011.

The journal is wide and available for diverse intellectual and educational pursuit from all corners of the society to enrich the learning experience of the group readers.

The Periphery of the Subject areas Includes:

Anatomy	Anesthesiology	Ayurveda	Biochemistry	Cardiology
Clinical Research	Clinical Science	Community Medicine	Dental Science	
Dermatology	Diabetology	Electrotherapy	Endocrinology	Endodontic
ENT	Epidermiology	Feminine Medicine	Forensic Science	Gastroenterology
General Medicine	General Surgery	Genetics	Gynaecology	Health Science
Healthcare				

UGC CARE JOURNAL APPROVED STATUS

IJAR is a Peer-Review Journal and valid as per UGC Gazette regulation: minimum qualifications for appointment of teachers and academic staff in universities colleges (Date:38/07/2018) Via [More Detail](#)

QUALIS APPROVED JOUR BRAZIL. [Click Here](#)



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.F.Kingslin Mary Genova, Dr.N.Vijaya and Dr.S.Sivadevi
**Title of the Paper : Lithium Ion-conducting Blend Polymer Electrolyte Based
on PVA-PAN Doped with Lithium Nitrate**

This article was downloaded by: [University of Otago]

On: 14 July 2015, At: 21:58

Publisher: Taylor & Francis

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: 5 Howick Place,
London, SW1P 1WG



Polymer-Plastics Technology and Engineering

Publication details, including instructions for authors and subscription information:
<http://www.tandfonline.com/loi/lpte20>

**Lithium Ion-Conducting Blend Polymer Electrolyte
Based on PVA-PAN Doped with Lithium Nitrate**

Kingslin Mary Genova F.^{abc}, S. Selvasekarapandian^c, S. Karthikeyan^d, N. Vijaya^b, S. Sivadevi^b
& C. Sanjeeviraja^a

^a Research and Development Centre, Bharathiar University, Coimbatore, Tamilnadu, India

^b Department of Physics, The S.F.R. College for Women, Sivakasi, Tamilnadu, India

^c Materials Research Centre, Coimbatore, Tamilnadu, India

^d Department of Physics, Madras Christian College, Chennai, Tamilnadu, India

^e Department of Physics, Alagappa Chettiar College of Engineering & Technology, Karaikudi,
Tamilnadu, India

Accepted author version posted online: 22 Jun 2015.



CrossMark

[Click for updates](#)

To cite this article: Kingslin Mary Genova F., S. Selvasekarapandian, S. Karthikeyan, N. Vijaya, S. Sivadevi & C. Sanjeeviraja
(2015): Lithium Ion-Conducting Blend Polymer Electrolyte Based on PVA-PAN Doped with Lithium Nitrate, *Polymer-Plastics
Technology and Engineering*, DOI: [10.1080/03602559.2015.1050523](https://doi.org/10.1080/03602559.2015.1050523)

To link to this article: <http://dx.doi.org/10.1080/03602559.2015.1050523>

Disclaimer: This is a version of an unedited manuscript that has been accepted for publication. As a service to authors and researchers we are providing this version of the accepted manuscript (AM). Copyediting, typesetting, and review of the resulting proof will be undertaken on this manuscript before final publication of the Version of Record (VoR). During production and pre-press, errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal relate to this version also.

PLEASE SCROLL DOWN FOR ARTICLE

Taylor & Francis makes every effort to ensure the accuracy of all the information (the "Content") contained in the publications on our platform. However, Taylor & Francis, our agents, and our licensors make no representations or warranties whatsoever as to the accuracy, completeness, or suitability for any purpose of the Content. Any opinions and views expressed in this publication are the opinions and views of the authors, and are not the views of or endorsed by Taylor & Francis. The accuracy of the Content should not be relied upon and should be independently verified with primary sources of information. Taylor and Francis shall not be liable for any losses, actions, claims, proceedings, demands, costs, expenses, damages, and other liabilities whatsoever or howsoever caused arising directly or indirectly in connection with, in relation to or arising out of the use of the Content.

This article may be used for research, teaching, and private study purposes. Any substantial or systematic reproduction, redistribution, reselling, loan, sub-licensing, systematic supply, or distribution in any form to anyone is expressly forbidden. Terms & Conditions of access and use can be found at <http://www.tandfonline.com/page/terms-and-conditions>

About this journal

Journal information

Print ISSN: 2574-0881 Online ISSN: 2574-089X

18 issues per year

Polymer-Plastic Technology and Materials is abstracted/indexed in:

- **Chemical Abstracts Service**
Chemical Abstracts (Online)
- **EBSCOhost** (various)
- **Elsevier BV**
Chimica
Compendex
FLUIDEX
Scopus
- **FIZ Technik e.V.**
TEMA - Technology and Management
- **Genamics JournalSeek**
- **National Library of Medicine**
PubMed
- **OCLC**
ArticleFirst
Electronic Collections Online
- **Ovid**
Inspec



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.M.Premalatha, Dr.N.Vijaya, Dr.S.Selvalakshmi
**Title of the Paper : Study of Proton Conducting Blend Polymer Electrolyte
Based on PVA-PVP**

Volume : 4 Issue : 6 June 2015		ISSN - 2250-1991	
		Research Paper	
		Medical Science	
Study of Proton Conducting Blend Polymer Electrolyte Based on PVA-PVP			
M.Premalatha		Department of Physics, S.F.R. College for Women, Sivakasi	
*N.Vijaya		Department of Physics, S.F.R. College for Women, Sivakasi. * Corresponding author	
S.Selvalakshmi		Department of Physics, S.F.R. College for Women, Sivakasi	
S.Monisha		Materials Research Centre, Coimbatore	
ABSTRACT	Proton conducting polymer blend electrolytes based on poly (vinyl alcohol) (PVA) and poly (vinyl pyrrolidone) (PVP) doped with ammonium thiocyanate in different compositions have been prepared by solution casting method using distilled water as solvent. The complex formation between the blend polymer and the salt has been confirmed by Fourier transform infrared spectroscopy. The amorphous nature of the polymer blend electrolyte has been confirmed by X-ray diffraction analysis (XRD). The band gap energy for polymer blend electrolyte is found to be 4.89 eV. This band gap decreases with the addition of NH ₄ SCN salt. The highest conductivity at 303 K has been found to be 6.942x10 ⁻⁴ S cm ⁻¹ for 40 mol% NH ₄ SCN-doped system. The increase in conductivity of the doped blend polymer electrolyte with increasing temperature suggests the Arrhenius type thermally activated conduction process. The activation energy is 0.2467 eV for the highest conductivity sample.		
KEYWORDS	FTIR, XRD, UV-Vis Spectroscopy, AC Impedance Spectroscopy, Ionic conductivity		
1. Introduction	Solid polymer electrolytes play a vital role in the development of electrochemical devices such as batteries, fuel cells, supercapacitors and sensors [1-3]. The main objectives in the polymer research are to develop polymer systems with high conductivity, long life time which are environmentally friendly and have low cost [2,4]. Various approaches have been adopted to improve the electrical, mechanical and electrochemical properties of polymer electrolytes. Polymer blending is one of the most promising ways by which these properties could be changed. Polymer blends are physical mixtures of structurally different polymers that interact through secondary forces and that are miscible to the molecular level. The significant advantages of polymer blends are that the properties of the final product can be tailored to the requirement of applications, which cannot be achieved by one polymer. Generally, blending of two polymers not only results in the improvement of mechanical strength but also helps increasing the conductivity by suppressing the crystallization of polymer chain [5].		
	Poly (vinyl alcohol) (PVA) is a semicrystalline and biodegradable polymer containing a hydroxyl group attached to methane carbons which can be a source of hydrogen bonding. Poly (vinyl pyrrolidone) (PVP) is a synthetic biodegradable polymer and it deserves a unique attention among the conjugated polymers due to its easy processability, moderate electrical conductivity and rich in charge transport mechanism. Both these polymers are environmentally friendly and having high polar side groups.		
	The aim of present work is to develop a proton conducting blend polymer electrolyte based on PVA-PVP doped with different concentrations of Ammonium thiocyanate. Ammonium salts have already been reported as good proton donors to the polymer matrix [6,7].		
2. Experimental Technique	In this work, PVA (Mw: 125,000, S d fine chem-Ltd, India), PVP (Mw: 44,000, S d fine chem-Ltd, India) and NH ₄ SCN (Reachem) were used as raw materials. Blend polymer electrolytes were prepared with 50 mol% PVA:50 mol% PVP and ammonium thiocyanate of various concentrations in mol% using distilled water as solvent by solution casting technique. PVA was stirred in distilled water for 3 hours and after its complete dissolution, PVP was added and stirred for 2 hours after which different concentration of (10%, 20%, 30%, 40%, 50%) ammonium salt was added. The mixture was stirred till it became homogeneous. Then the homogeneous viscous solution was poured in the polypropylene petri dishes and kept in vacuum oven at 60°C for two days to obtain free standing flexible thin films.		
	A SHIMADZU-IR Affinity-1 spectrophotometer was used to carry out Fourier transform infrared spectroscopy (FTIR) studies in the wave number range of 500-4000 cm ⁻¹ . The optical properties of the films were characterized by UV-VIS spectroscopy. The electrical properties of the blend polymer electrolytes were investigated by using a computer controlled HIOKI 3532 LCR analyzer in the frequency range of 42 Hz-1 MHz over the temperature range of 303 K-343 K.		
	3. Results and discussion 3.1. FTIR Characterization The complex formation between the polymer blend and salt was analyzed by FTIR spectroscopy. The FTIR spectra of pure blend polymer (50% PVA:50% PVP) and the blend polymer doped with 40% of NH ₄ SCN is shown in figure 1. The absorption peaks observed in the pure blend 50% PVA:50% PVP are 3379 cm ⁻¹ , 2948 cm ⁻¹ , 1743 cm ⁻¹ , 1650 cm ⁻¹ , 1288 cm ⁻¹ , 842 cm ⁻¹ . These peaks are attributed to O-H stretching, CH ₂ asymmetric stretching, C=O stretching, C=C stretching, C-O-C stretching, CH ₂ bending respectively. These peaks are found to be shifted in 40% NH ₄ SCN doped sample. The characteristic peaks at 3379 cm ⁻¹ and 2948 cm ⁻¹ are shifted to 3179 cm ⁻¹ and 2958 cm ⁻¹ respectively in the salt doped blend polymer sample. The absorption peaks at 1743 cm ⁻¹ and 1650 cm ⁻¹ are displaced to 1752 cm ⁻¹ and 1639 cm ⁻¹ respectively in the blend polymer with 40% NH ₄ SCN. The peak at 1288 cm ⁻¹ gets shifted to higher wavenumber at 1292 cm ⁻¹ in the doped blend film. There is a new peak appearing at 2098 cm ⁻¹ in the		
189 PARIPEX - INDIAN JOURNAL OF RESEARCH			





THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.K.P.Radha
Title of the Paper : AC Impedance And Vibrational Studies Of Biopolymer
Electrolyte Cornstarch: NH₄SCN

Research Paper | Chemical Science | E-ISSN : 2454-9916 | Volume : 2 | Issue : 1 | Jan 2016

AC IMPEDANCE AND VIBRATIONAL STUDIES OF BIOPOLYMER ELECTROLYTE CORNSTARCH:NH₄SCN

G.GURULAKSHMI¹ | P. MAHALAKSHMI¹ | K.P.RADHA² | MONISHA³

¹ M.Phil scholar, Department of Physics, S.F.R. College for Women, Sivakasi, Tamilnadu
² Associate Professor, Department of Physics, S.F.R. College for Women, Sivakasi, Tamilnadu.
³ Materials Research Centre, Coimbatore, Tamilnadu

ABSTRACT

Solid polymer electrolytes (SPEs) based on biopolymer play a vital role in creating materials for energy storage devices such as batteries and fuel cells. An attempt has been made to prepare solid polymer electrolyte using the biopolymer starch and the doping salt ammonium thiocyanate (NH₄SCN) by solution casting technique with DMSO as solvent. The FTIR analysis confirms the complex formation between the polymer and salt. The AC impedance spectroscopy reveals that the biopolymer electrolyte 75 mol% of cornstarch: 25 mol % of NH₄SCN has the maximum ionic conductivity $2.76 \times 10^{-4} \text{ S cm}^{-1}$ with low activation energy (0.32eV) among the prepared samples. The ionic conductivity of the best conducting electrolyte increases with increase in temperature suggesting that the ionic conductivity is temperature dependent. The transport number measurements confirm that the ionic conductivity in these polymers is due to proton ions.

KEYWORDS: FTIR, AC impedance, Transport number.

A. Introduction:
Researchers have utilized different starches like arrowroot, corn and potato starches. Corn starch is most popular polymer since it is renewable and bio degradable polymer. The polymer electrolyte based on potato starch doped with ammonium Iodide has the highest ambient temperature conductivity as $2.40 \times 10^{-4} \text{ S cm}^{-1}$. [Kumar et. al., 2012]. The aim of this work is to develop a proton conducting biopolymer electrolyte based on corn starch doped with ammonium thiocyanate. The prepared electrolytes have been characterized by FTIR analysis and electrochemical impedance spectroscopy in order to analyse the interactions between the polymer host (corn starch) and the charge carriers as well as the influence of the charge carriers on the ionic conductivity and conduction mechanism.

B. Preparation of Samples:
Cornstarch (AR grade, Sd fine chem) and NH₄SCN purchased from Spectrum have been used as starting materials to prepare proton conducting biopolymer electrolytes. Cornstarch: NH₄SCN based biopolymer electrolytes of various molar ratios such as (100: 0), (85: 15), (75: 25), and (65: 35) have been prepared by the solution casting technique. Appropriate quantity of Cornstarch and NH₄SCN are dissolved in the solvent dimethyl sulphoxide (DMSO) separately. Then those solutions are mixed together and stirred well to get homogeneous mixture. The resulting solution is poured on to glass petridishes and is allowed to vacuum dried in the vacuum oven for 5 days at 70°C, in order to remove the solvent. The smooth uniform flexible polymer films which are transparent to visible light have been obtained.

FTIR studies
FTIR spectra have been recorded in the range of 4000 – 400 cm⁻¹ using SHIMADZU IR-Affinity -1 spectrophotometer to identify the complexation behavior of the prepared polymer electrolytes.

Conductivity measurements
AC conductivity measurements have been carried out on Cornstarch - NH₄SCN systems of uniform thickness having an area of 1 cm². Polymer electrolytes have been sandwiched between two stainless steel (SS) electrodes applying a potential of 1V from 42 Hz to 1 MHz using HIOKI make LCZ meter (model 3532) interfaced to a computer. The conductivity has been calculated from complex impedance plots of measured impedance (Z) and phase angle (θ). The temperature of the cell has been controlled using a thermostat and electrical measurements of the polymer electrolytes have been carried out in the temperature range 303K – 343K.

C. RESULTS AND DISCUSSIONS
C.1 FTIR studies:

Figure 1: FTIR patterns of polymer electrolytes [a] Pure cornstarch [b] 85Cornstarch:15NH₄SCN [c] 75Cornstarch:25NH₄SCN [d] 65Cornstarch:35NH₄SCN

The FTIR spectra of pure cornstarch and different molar ratios of NH₄SCN doped cornstarch complexes are shown in Figure 1. The hydroxyl band in the starch film appears at 1699 cm⁻¹. The

International Education & Research Journal [IERJ] | 1





THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.K.P.Radha
Title of the Paper : Magnitude Bode Plot Analysis of Solid Polymer Electrolyte PMMA Complexed with Adipic Acid

Available online at www.derpharmachemica.com



ISSN 0975-413X
CODEN (USA): PCHHAX

Der Pharma Chemica, 2016, 8(11):222-226
<http://derpharmachemica.com/archive.html>

Magnitude Bode Plot Analysis of Solid Polymer Electrolyte PMMA Complexed with Adipic Acid

K. P. Radha*, P. Mahalakshmi and S.Chitra

Department of Physics, S.F.R. College for Women, Sivakasi, Tamilnadu, India

ABSTRACT

In the present work, proton conducting solid polymer electrolyte have been prepared using PMMA and adipic acid ($C_6H_{10}O_4$) by Solution Casting Technique. From the Magnitude Bode Plot, it has been observed that the Ohmic resistance dominates the impedance at the highest frequencies and it can be read from the high frequency horizontal plateau region. Argand plots of both pure PMMA and adipic acid added electrolyte are incomplete half senicircle suggesting the Non - Debye nature of the polymer electrolytes. At higher frequencies due to the periodic reversal of the electric field there is no excess ion diffusion in the field direction. The presence of long tail in the modulus plot may be due to the large capacitance associated with the electrodes.

Key - words: Argand, Dielectric, Modulus plots

INTRODUCTION

Polymer electrolytes combine ionic conductivity in the solid state with mechanical flexibility, making them ideal replacement for liquid electrolytes in electrochemical cells such as Fuel cell, electro chromic displays, sensors etc., because of their ability to form good interfaces with solid electrodes. PMMA is a polymer which forms complexes with inorganic salts such as NH_4PF_6 , $LiCF_3SO_3$, $LiNO_3$ etc.[1]. It has excellent chemical and physical properties which has made it of great interest in proton conducting solid polymer electrolytes. In the present work, we report the effect of adipic acid on the characterization of conventional proton conducting solid polymer electrolytes based on PMMA in terms of dielectric behavior, ionic conductivity and the interactions that had occurred between them.

MATERIALS AND METHODS

2.1 Sample Preparation

Polymer electrolytes have been prepared using PMMA: $C_6H_{10}O_4$ in different molar ratios (100:0), (80:20) by solution casting technique with Dimethyl Formamide (DMF) as the solvent. PMMA is stirred in DMF at 24 hours and then $C_6H_{10}O_4$ is added and stirred at $55^\circ C$ for 12 hours until the mixture become homogeneous viscous liquid. These solutions of different compositions have been poured into identical Petri dishes of 10 cm diameter and are dried in vacuum oven at room temperature for 24 hours. Free standing nature of the electrolyte has obtained.



DER PHARMA CHEMICA

JOURNAL FOR MEDICINAL CHEMISTRY, PHARMACEUTICAL CHEMISTRY, PHARMACEUTICAL SCIENCES AND COMPUTATIONAL CHEMISTRY



All submissions of the EM system will be redirected to **Online Manuscript Submission System**. Authors are requested to submit articles directly to [Online Manuscript Submission System](#) of respective journal.



Welcome

The primary mission of the *Der Pharma Chemica* is to become the premier source of high quality research from whole of the world. All authors not only receive fast and comprehensive peer-review but also the article promotion to researchers working in the same field.

Der Pharma Chemica A is peer-reviewed and is published in electronic version. The language of the *Der Pharma Chemica* is English. *Der Pharma Chemica* publishes research and review articles, rapid and short communication and book reviews. The current emphasis of the journal includes (but is not limited to) the following areas: medicinal chemistry, pharmaceutical chemistry and computational chemistry.

OPEN ACCESS POLICY

Der Pharma Chemica publishes all its articles in full open access format which are easily accessible for scientific community. Researchers have free and unlimited access to the full-text of articles published in Scholars Research Library Journals ie Readers can access the published articles freely without login and password. It gives the author's research high visibility, availability and more citations.

You can send your submission online here :- www.scholarscentral.org/submissions/der-pharma-chemica.html

Journal Der Pharma Chemica is Abstracted/Indexed in:

[CNSI](#)

Chemical Abstract Services (USA),

[SCOPUS](#)

EMBASE

SCIMAGO

Indian Science Abstract,

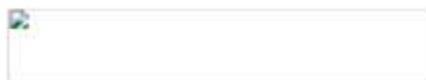
HINARI

DOAJ

Open J Gate

Genomics Journalseek

Google scholar



Social



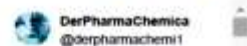
FIND ARTICLES

Search for...

GET THE A



Tweets by @derpharmache



DER PHARMA CHEMICA
Current Issue| Volume 13, Issue 2
To access articles: bit.ly/2Wp9zrc

Submissions now open for the upcoming issue- Volume 13, Issue 3.

120

Embed

View on Twitter

DOWNLOADS

- [Acrobat Reader](#)
- [Chemsketch](#)
- [Copyright Form](#)
- [Editorial / Advisory Board Form](#)
- [Author's Guideline](#)
- [Publication Ethics](#)



THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.K.P.Radha
Title of the Paper : Admittance Analysis of Proton conducting polymer electrolyte PVA:NH₄PF₆:ZrO₂

Volume : 5 | Issue : 2 | February 2016 ISSN - 2250-1991 | IF : 5.215 | IC Value : 77.65

Research Paper Physics

Indian Journal of Research
PARIPEX

Admittance Analysis of Proton conducting polymer electrolyte PVA:NH₄PF₆:ZrO₂

Dr. (Mrs) K.P.Radha Associate Professor of Physics, S.F.R. College for Women, Sivakasi, Tamilnadu.

ABSTRACT Proton conducting composite polymer electrolyte based on Poly vinyl alcohol (PVA) and ammonium hexafluoro phosphate (NH₄PF₆) complex with different molar ratios of the nanofiller Zirconium di oxide (ZrO₂) have been prepared by Solution Casting technique. Concentration dependent Conductivity reveals that the polymer electrolyte 70PVA:30NH₄PF₆:2ZrO₂ has the maximum ionic conductivity (2.5688x10⁻³ S cm⁻¹) with minimum activation energy (0.123883 eV) at ambient temperature. The spectroscopic plot of Y'' represents the bulk element in series with electrode capacitance. The frequency independent region in the spectroscopic plot of Y'' indicates the accumulation of the charge carriers near the electrode.

KEYWORDS AC impedance analysis, admittance, dielectric

Introduction:
One way of enhancing the conductivity of polymer electrolytes without significantly compromising their mechanical properties is via the incorporation of the nanofiller ZrO₂, TiO₂, Al₂O₃, SiO₂ or solid plasticizers. These plasticizers impart the dual advantages of increasing local segmental mobility in the polymer chains reflected in decreasing glass transition temperature (T_g) and increasing the degree of dissociation of the salt [1]. When the dielectric constant of the solid plasticizer is greater than that of the polymer host the addition of such plasticizer will increase the permittivity of the mixture. Effectively solid plasticizers may serve to promote both the number of available charge carriers and their mobility through the polymer network.

In our earlier work, we have dealt with preparation of polymer electrolyte with PVA and ammonium hexafluoro phosphate (NH₄PF₆). In the present work, the optimized high conductivity polymer electrolyte 70PVA:30 NH₄PF₆ (mol %) has been further optimized to find the effect of the nanofiller ZrO₂ of 45nm size on the ionic conductivity of the proton conducting polymer electrolyte.

Experimental:
Preparation
Poly (vinyl alcohol) (PVA) with molecular weight 1,25,000 (AR grade 5d fire chem. make), ammonium hexafluoro phosphate (NH₄PF₆) purchased from Aldrich, USA and the nano filler Zirconium di Oxide (ZrO₂) from Aldrich USA of particle size 45nm and Dimethyl Sulphoxide (DMSO) as solvent are used as starting material to prepare composite polymer electrolytes by solution casting technique. From our earlier work, it has been observed the optimum concentration of PVA and NH₄PF₆ as 70mol% and 30mol%. The nano filler ZrO₂ is added to this optimum concentration (70PVA:30 NH₄PF₆) as 1mol%, 2mol% and 3mol%. Appropriate weights of PVA, NH₄PF₆ are dissolved in DMSO by using magnetic stirrer. The Nano filler ZrO₂ is suspended in the solution and then stirred well to get homogenous mixture. The mixture is then poured into glass Petri dish and is allowed to evaporate the solvent in the vacuum oven at 80°C for 5 days. Free standing nature of the electrolyte has obtained.

Conductivity measurements:
AC conductivity measurements have been carried out on PVA - NH₄PF₆ systems of uniform thickness having an area of 1 cm². Polymer electrolytes have been sandwiched between two stainless steel (SS) electrodes applying a potential of 1V from 42 Hz to 1 MHz using HIOKI make LCZ meter (model 3532) interfaced to a computer. The conductivity has been calculated from complex impedance plots of measured impedance (Z) and phase angle (φ). The temperature of the cell has been controlled using a thermostat and electrical measurements of the polymer electrolytes have been carried out in the temperature range 303K – 343K.

Results and discussion:
Concentration dependent conductivity

Concentration of ZrO ₂ (mol%)	log(σ/cm ⁻¹)	E _a (eV)
0.0	-2.75	0.17
1.0	-2.60	0.12
3.0	-2.85	0.16

Figure 1 Variation of conductivity and activation energy of 70 PVA: 30 NH₄PF₆ as a function of ZrO₂ concentration at 303K.

The activation energy of the composite polymer electrolyte decreases with increase in the ionic conductivity as shown in Fig-1. Since the proton ion transfer is greatly affected by the polymer segmental motion, a composite electrolyte with lower activation energy suggests rapid ion conduction and hence higher conductivity [2]. Normally ionic conductivity of the polymer electrolyte depends upon both charge carrier concentration, n and carrier mobility μ as

$$\sigma = nq\mu$$

where q representing the charge of mobile carrier. The charge carrier concentration n depends upon both the dissociation energy U involved and dielectric constant ε as

$$n = n_0 \exp(-U/\epsilon kT)$$

Where k is Boltzmann constant and T the absolute temperature. Upon incorporation of the nanofiller ZrO₂ to the electrolyte 70 PVA:30 NH₄PF₆, dielectric constant has been experimentally found to increase during measurements (Fig-2). It

67 | PARIPEX – INDIAN JOURNAL OF RESEARCH



International Journal

PIJR

PARIPEX-INDIAN JOURNAL OF RESEARCH

 PRINT ISSN NO 2250 - 1991
 IF OF PIJR: 6.941 (SJIF)
 PEER REVIEW, INTERNATIONAL JOURNAL
 JOURNAL DOI : 10.36106/PARIPEX

 Tuesday, Mar,16th

9:41:15 AM

editor@paripe

+91 88 66 00 36

+91 88 66 11 36

[HOME](#) [ABOUT US](#) [EDITORIAL BOARD](#) [AUTHOR GUIDELINES](#) [INDEXING & ABSTRACTING](#) [PAST ISSUES](#) [PUBLICATION ETHICS](#) [CONTACT](#)

UPDATES

MEDICAL COUNCIL OF INDIA (MCI) VALID PUBLICATION AS PER FEBRUARY 2020 GAZETTE

[Upload your Article](#)
[Author Guidelines](#)
[Download](#)

UPDATES

[INTERNATIONAL INDEXED JOURNAL](#) [PEER REVIEWED](#) [MONTHLY PRINT JOURNAL](#) [DOUBLE REVIEWED](#) [REFERRED & REFER](#)


36572

Manuscript
submission

9855

Publish Research
Papers

26.94

Acceptance
Ratio

100

Articles from ave
100 Countries
[BOOK PUBLICATION](#) [SPECIAL ISSUES](#) [CURRENT ISSUE](#) [FAQS](#) [SEARCH](#) [SUBSCRIPTION FORM](#) [PEER REVIEW PROCESS](#) [SISTER JOURNALS](#)

Current Issue

March 2021

Online Payment

Indian
AuthorsInternational
Authors
[Join as Reviewer](#)
**Indexing &
Abstracting**

UGC Sr.No.47432

Paripex - Indian Journal Of Research

PARIPEX - INDIAN JOURNAL OF RESEARCH (PIJR) is a double-reviewed monthly print-in published journal since January 2012. The aim of the journal to become a serious vehicle for inspiring and disseminating research papers, articles, case studies, review articles etc in all subject areas by the academicians, research scholars, corporate and practitioners with substantial experience and expertise in their respective fields. This journal is kept wide to provide platform for diversity of intellectual pursuit from all corners of the society for enrichment and enhancement of the group readers. The Journal is been published on every 15th of the month.

The Periphery of the Subject areas includes:

Accountings, Finance, Management Accounting, Business, Commerce, Corporate Governance, Financial Accounting, Arts, Fine Arts, Designing, Medical, Bio-medical, Clinical Research, Home Science, Medical Science, Anatomy, Anesthesiology, Ayurveda, Biochemistry, Cardiology, Clinical Research, Clinical Science, Community Medicine, Dental Science, Dermatology, Diabetology, Electrotherapy, Endocrinology, Endodontic, ENT, Epidemiology, Forensic Medicine, Forensic Science, Gastroenterology, General Medicine, General Surgery, Genetics, Gynaecology, Health Science, Healthcare, Hepatobiliary Surgery, Homeopathic, Human Genetics, Immunohaematology,

 UGC CARE JOURNAL APPROVAL
STATUS

Now PIJR is a Peer-Review Journal and valid as per UGC Gazette regulation: minimum qualifications for appointment of teachers and academic staff in universities & colleges (Date:18/07/2018) View More Detail

 QUALIS APPROVED JOUR
BRAZIL. [Click Here](#)



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.K.P.Radha
Title of the Paper : Effect of Adipic acid on PVA based proton conducting polymer electrolyte

International Journal of Applied Research 2016, 2(2): 339-341



International Journal of Applied Research

ISSN Print: 2394-7300
ISSN Online: 2394-5669
Impact Factor: 5.2
IJAR 2016, 2(2): 339-341
www.ijarjournal.com
Received: 03-12-2015
Accepted: 07-01-2016

P Mahalakshmi
M.Phil. Scholar, Department
of Physics, S.F.R. College for
Women, Sivakasi, Tamilnadu,
India.

G Gurulakshmi
M.Phil. Scholar, Department
of Physics, S.F.R. College for
Women, Sivakasi, Tamilnadu,
India.

Dr. KP Radha
Associate Professor of Physics,
S.F.R. College for Women,
Sivakasi, Tamilnadu, India.

S Monisha
Materials Research Centre,
Coimbatore, Tamilnadu, India.

Effect of Adipic acid on PVA based proton conducting polymer electrolyte

P Mahalakshmi, G Gurulakshmi, Dr. KP Radha, S Monisha

Abstract
The proton conducting solid polymer electrolytes composed of Poly vinyl Alcohol (PVA) with different concentration of adipic acid ($C_6H_{10}O_4$) have been developed by using solution casting technique. The prepared polymer electrolytes have been subjected to XRD, DSC, AC impedance and Wanger's dc Polarization studies. XRD analysis confirms amorphous nature of polymer electrolytes. DSC analysis reveals that the best ion conducting sample 75 PVA: 25 $C_6H_{10}O_4$ polymer electrolyte has more thermal stability than pure PVA polymer electrolyte. The highest ionic conductivity has been found to be $7.50 \times 10^{-5} \text{ S cm}^{-1}$ at 303 K for 75 PVA: 25 $C_6H_{10}O_4$ polymer electrolyte. Temperature dependent conductivity of polymer electrolytes obeys Arrhenius equation. The highest conductivity polymer electrolyte 75 PVA: 25 $C_6H_{10}O_4$ has low Activation energy 0.2744eV among the prepared polymer electrolytes. The transference number of electrolyte in the highest ion conductivity sample is 0.95. Wanger's dc Polarization analysis suggests that the prepared polymer electrolytes are the best proton ion conductors.

Keywords: XRD, DSC, AC impedance, Wanger's dc Polarization

1. Introduction

In recent years there has been much interest in ion conducting polymers which show high ionic conductivity at room temperature because these are the most promising electrolytes in various electrochemical devices such as all solid-state batteries, sensors, fuel cells etc. Poly (vinyl alcohol) is semicrystalline polymer and cost effective biodegradable synthetic polymer with high tensile strength and flexibility. It contains hydroxyl group attached to methane carbons which acts as a hydrogen bonding source. Adipic acid ($C_6H_{10}O_4$) is a white crystalline powder. This organic compound is the most important synthetic dicarboxylic acid. It has a wide range of applications like coatings, plasticizers and detergents. Adipic acid is readily biodegradable and has a low potential for bioaccumulation. The intention of the present work is to prepare and characterize polymer electrolytes based on PVA with different compositions of $C_6H_{10}O_4$. The prepared samples have been subjected to X-Ray Diffraction, Differential Scanning Calorimetry, Ac impedance Spectroscopy and Wagner's dc polarization technique.

2 Experimental Technique

2.1 Sample Preparation

PVA with average molecular weight 125,000 (AR grade, sd fine chem) and adipic acid ($C_6H_{10}O_4$) have been used as starting materials to prepare proton conducting polymer electrolytes. PVA based solid polymer electrolytes of various molar ratios of adipic acid such as (100:0), (80:20), (75:25), (70:30) have been prepared by the solution casting technique. Appropriate quantity of PVA and adipic acid are dissolved in the solvent dimethyl sulphoxide (DMSO) separately. Then these solutions are mixed together and stirred well to get homogeneous mixture. The resulting solution is poured on to glass petri dishes and is allowed to vacuum dried in the vacuum oven for 5 days at 70 °C, in order to remove the solvent. The smooth uniform flexible polymer films which are transparent to visible light have been obtained.

Correspondence
Dr. KP Radha
Associate Professor of Physics,
S.F.R. College for Women,
Sivakasi, Tamilnadu, India.

- 339 -

3/16/2021

Indexing and Abstracting | International Journal of Applied Research

CONTACT: +91-9711224068

LOGIN SIGNUP SUBMIT YOUR PA



- Multidisciplinary Jou
- Printed Journal
- Indexed Journal
- Refereed Journal
- Peer Reviewed Journa

Search

SEARCH

ISSN Print: 2394-7500, ISSN Online: 2394-5869, CODEN: IJARPF

ME



International Journal of Applied Research

INDEXING AND ABSTRACTING

The journal is indexed in following International Universities, Libraries and databases worldwide:



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.N.Vijaya
**Title of the Paper : Preparation and Impedance Analysis of Bio Degradable
Polymer Poly Vinyl Alcohol with Amino Acid, Arginine**



Polymer-Plastics Technology and Engineering


ISSN: 0360-2559 (Print) 1525-6111 (Online) Journal homepage: <http://www.tandfonline.com/loi/lpte20>

Preparation and Impedance Analysis of Bio Degradable Polymer Poly Vinyl Alcohol with Amino Acid, Arginine

Bhuvanewari Ravinathan, Karthikeyan Shunmugavel, Selvasekarapandian Subramanian, Vinoth Pandi Dharmalingam, **Vijaya Naranappa**, Monisha Sampath & Premalatha Manavalan

To cite this article: Bhuvanewari Ravinathan, Karthikeyan Shunmugavel, Selvasekarapandian Subramanian, Vinoth Pandi Dharmalingam, Vijaya Naranappa, Monisha Sampath & Premalatha Manavalan (2016): Preparation and Impedance Analysis of Bio Degradable Polymer Poly Vinyl Alcohol with Amino Acid, Arginine, Polymer-Plastics Technology and Engineering, DOI: [10.1080/03602559.2015.1103263](https://doi.org/10.1080/03602559.2015.1103263)

To link to this article: <http://dx.doi.org/10.1080/03602559.2015.1103263>

 Accepted author version posted online: 01 Mar 2016.

 [Submit your article to this journal](#)

 [View related articles](#)

 [View Crossmark data](#)

Preparation and Impedance Analysis of Bio Degradable Polymer Poly Vinyl Alcohol with Amino Acid, Arginine

Bhuvanewari Ravinathan^{1,2}, Karthikeyan Shunmugavel³, Selvasekarapandian Subramanian², Vinoth Pandi Dharmalingam^{2,4}, Vijaya Naranappa⁵, Monisha Sampath², Premalatha Manavalan²

¹Research and Development Centre, Bharathiar University, Coimbatore, Tamilnadu, India, ²Materials Research Centre, Coimbatore, Tamilnadu, India, ³Department of Physics, Madras Christian College, Tambaram, Chennai, India, ⁴Department of Physics, Coimbatore Institute of Technology, Coimbatore, Tamilnadu, India, ⁵Department of Physics, SFR College for women, Sivakasi, Tamilnadu, India

Corresponding Author: sekarapandian@rediffmail.com, karthisrivi@gmail.com

Abstract

Bio degradable polymers have an innumerable use in the field of biomedicine, especially in drug delivery system. Polyvinyl alcohol(PVA) is one of the bio degradable polymer, used as a carrier for drug delivery. Amino acids are necessary for maintaining good health for human being. The present study focuses on the interaction between PVA and amino acids. An effort is being taken to prepare polymer membrane based on PVA complexed with different concentration of Arginine, a type of amino acids using water as solvent by solution casting technique. The amporousity and complex formation between PVA and Arginine have been confirmed by XRD, FTIR spectroscopy respectively. The thermal behavior of PVA/Arginine complexes has been analyzed by DSC. From AC impedance spectroscopy, Ion transport mechanism has been investigated in detail. By using Almond and West formulisms, the parameter such as ion hopping frequency ω_p , has been calculated. The polymer membrane 75Mwt% PVA: 25Mwt% Arginine has the highest ionic conductivity as $1.97 \times 10^{-6} \text{ S cm}^{-1}$ at ambient temperature.

3/15/2021

Polymer-Plastics Technology and Materials information

 Taylor & Francis Online

 Log In | Register



Home ▶ All Journals ▶ Polymer-Plastics Technology and Materials ▶ Journal Information

Journal

Polymer-Plastics Technology and Materials >

About this journal

Journal information

Print ISSN: 2574-0881 Online ISSN: 2574-089X

18 issues per year

Polymer-Plastic Technology and Materials is abstracted/indexed in:

- **Chemical Abstracts Service**
Chemical Abstracts (Online)
- **EBSCOhost** (various)
- **Elsevier BV**
Chimica
Compendex
FLUIDEX
Scopus
- **FIZ Technik e.V.**
TEMA - Technology and Management
- **Genamics JournalSeek**
- **National Library of Medicine**
PubMed
- **OCLC**
ArticleFirst
Electronic Collections Online
- **Ovid**
Inspec
- **Personal Alert (Email)**
- **ProQuest** (various)



THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.N.Vijaya, Dr.S.Selvalakshmi, Dr.M.Premalatha
Title of the Paper : Characterization of blend polymer PVA-PVP complexed with ammonium thiocyanate

links
DOI 10.1007/s11581-016-1672-7

ORIGINAL PAPER

Characterization of blend polymer PVA-PVP complexed with ammonium thiocyanate

M. Premalatha^{1,2} · N. Vijaya¹ · S. Selvasekarapandian^{2,3} · S. Selvalakshmi¹

Received: 21 November 2015 / Revised: 27 January 2016 / Accepted: 13 February 2016
© Springer-Verlag Berlin Heidelberg 2016

Abstract Thin films of blend polymer electrolytes comprising poly(vinyl alcohol) (PVA) and poly(vinyl pyrrolidone) (PVP) complexed with ammonium thiocyanate (NH₄SCN) salt in different compositions have been prepared by solution casting technique using distilled water as solvent. The prepared films have been investigated by different experimental techniques. The complexation of these films has been studied by FTIR spectroscopy. The increase in amorphousness of the films with increase in NH₄SCN content has been confirmed by XRD analysis. The addition of ammonium thiocyanate salt to PVA-PVP polymer blend shows a shift in T_g of the blend. The effect of salt concentration and temperature on the ionic conductivity of the polymer blend films has been analyzed using AC impedance spectroscopy. The maximum conductivity of 6.85 × 10⁻⁴ S cm⁻¹ at room temperature has been observed for the blend with 50 mol% PVA-50 mol% PVP complexed with 40 mol% NH₄SCN. The activation energy has been found to be minimum (0.24 eV) for this sample. Wagner's polarization technique shows that the charge transport in these blend films is predominantly due to ions. Using the highest conductivity blend polymer electrolyte, a proton battery has been fabricated and its discharge characteristics have been studied.

Keywords Blend polymer · XRD · FTIR · AC impedance spectroscopy · Ionic conductivity · Transference number

Introduction

The amorphous polymeric materials especially proton-conducting polymer electrolytes play a vital role in the ionic devices such as fuel cells, supercapacitors, batteries, and electrochemical devices because of their high conductivity, thermal stability, life time, and mechanical strength properties [1–3]. Nafion is a standard proton conducting membrane used in fuel cells [4]. The researchers are now developing a new polymer membrane to replace Nafion because of its high cost. For developing a new proton-conducting polymer electrolytes, high ambient temperature conductivity, flexibility, durability, and mechanical strength are considered as important factors. Various efforts such as adding plasticizers and inorganic inert fillers to polymer electrolytes, use of copolymers, and blending two polymers [5–10] have been made to enhance the electrical, mechanical, and electrochemical properties of polymer electrolytes. Among the various approaches that have been employed for the preparation of polymer electrolytes with high ionic conductivity and appreciable thermal stability at ambient temperature, blending of polymers is an important method. Polymer blends are polymer systems originated from the physical mixture of two or more polymers and/or copolymers, without a high degree of chemical reactions between them. The advantages of polymer blends lie in the ability to combine existing polymers into new compositions obtaining in this way, materials with specific properties for desired applications. This strategy allows for savings in research and development of new materials with equivalent properties, as well as versatility, simplicity, relatively low cost and faster development time of new materials [11]. The most

✉ S. Selvasekarapandian
sekarapandian@rediffmail.com

¹ Department of Physics, The S.F.R. College for Women, Sivakasi, Tamil Nadu 626 123, India

² Materials Research Centre, Coimbatore, Tamil Nadu 641 045, India

³ Department of Nano Science and Technology, Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu 641003, India

Published online: 14 March 2016

Springer

▸ Subscription expires 31/12/2021

[Subscribe to this journal](#)

▸ Print + eJournal

279,44

[Learn about institutional subscriptions](#)

Advertisement

About this journal

Electronic ISSN

1862-0760

Print ISSN

0947-7047

Abstracted and indexed in

1. CNKI
2. Chemical Abstracts Service (CAS)
3. Dimensions
4. EBSCO Discovery Service
5. EI Compendex
6. EnCompassLit
7. Google Scholar
8. INSPEC
9. Institute of Scientific and Technical Information of China
10. Japanese Science and Technology Agency (JST)
11. Journal Citation Reports/Science Edition
12. Naver
13. OCLC WorldCat Discovery Service
14. ProQuest Central
15. ProQuest Engineering
16. ProQuest Materials Science and Engineering Database
17. ProQuest SciTech Premium Collection
18. ProQuest Technology Collection
19. ProQuest-ExLibris Primo
20. ProQuest-ExLibris Summon
21. SCImago
22. **SCOPUS**
23. Science Citation Index Expanded (SciSearch)
24. Semantic Scholar
25. TD Net Discovery Service
26. **UGC-CARE List (India)**
27. WTI Frankfurt eG

Copyright information

[Rights and permissions](#)

[Springer policies](#)

© Springer-Verlag GmbH Germany, part of Springer Nature



THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.K.P.Radha
Title of the Paper : Dielectric and ionic conductivity analysis of solid polymer electrolyte based on PMMA

International Journal of Advanced Scientific Research

International Journal of Advanced Scientific Research

ISSN: 2456-0421

www.newresearchjournal.com/scientific

Volume 1; Issue 1; April 2016; Page No. 21-24

Dielectric and ionic conductivity analysis of solid polymer electrolyte based on PMMA

Mahalakshmi P, Chitra S, *Dr. Radha KP

Department of Physics, S.F.R. College for Women, Sivakasi, Tamilnadu, India

Abstract

An attempt has been made to prepare a new proton conducting solid polymer electrolyte based on PMMA doped with adipic acid ($C_6H_{10}O_4$) by Solution Casting Technique. The complex admittance plot consists of low frequency arc and high frequency spike. Arrhenius plot analysis shows that the addition of adipic acid to PMMA enhances the ionic conductivity of Pure PMMA solid polymer electrolyte from $5.8040 \times 10^{-7} \text{ Scm}^{-1}$ to $1.6732 \times 10^{-6} \text{ Scm}^{-1}$ at ambient temperature. The curves in the Argand plot at different temperatures are incomplete half semicircle suggesting Non - Debye nature of the electrolytes. The long tail in the low frequency range of M' spectra indicate the capacitive nature of the system.

Keywords: Arrhenius, Argand, Bode plot, Admittance

1. Introduction

Solid Electro Chemical Devices based on Solid Polymer Electrolytes has attracted great scientific interests over the conventional liquid electrolyte due to the problems of leakage. Solid Polymer electrolytes have various advantages such as fast charge transfer at electrode interface, flexibility, electro chemical stability, light weighted mechanical strength and good processability. Unfortunately the low conductivity of the solid polymer electrolytes at room temperature limits their practical applications. Thus various efforts have been done to improve the proton conductivity of solid polymer electrolytes. One of the most successful approaches to enhance ionic conductivity is to add salts. Many proton conducting polymer electrolytes such as PVP: NH_4SCN , PEO: NH_4ClO_4 , Chitosen: NH_4NO_3 etc are available in the literature, and they have exhibited excellent proton conductivity. It reveals that ammonium salts are very good proton donors. In this continuation, an attempt has been made to prepare and characterize a new proton conducting solid polymer electrolyte based on PMMA doped with adipic acid ($C_6H_{10}O_4$).

2. Experimental Procedure

2.1 Sample Preparation

Polymer electrolytes have been prepared using PMMA: $C_6H_{10}O_4$ in different molar ratios (100:0), (80:20) by solution casting technique with Dimethyl Formamide (DMF) as the solvent. PMMA is stirred in DMF at 24 hours and then $C_6H_{10}O_4$ is added and stirred at 55°C for 12 hours until the mixture become homogeneous viscous liquid. These solutions of different compositions have been poured into identical Petri dishes of 10 cm diameter and are dried in vacuum oven at room temperature for 24 hours. Free standing nature of the electrolyte has obtained.

2.2 Conductivity measurements

AC conductivity measurements have been carried out on PMMA: $C_6H_{10}O_4$ systems of uniform thickness having an area of 1 cm^2 . Polymer electrolytes have been sandwiched between two stainless steel (SS) electrodes applying a potential of 1V from 42 Hz to 1 MHz using HIOKI make LCZ meter (model 3532) interfaced to a computer. The conductivity have been

calculated from complex impedance plots of measured impedance (Z) and phase angle (θ). The temperature of the cell has been controlled using a thermostat and electrical measurements of the polymer electrolytes have been carried out in the temperature range 303K-343K.

3. Results and discussion

3.1 Admittance analysis

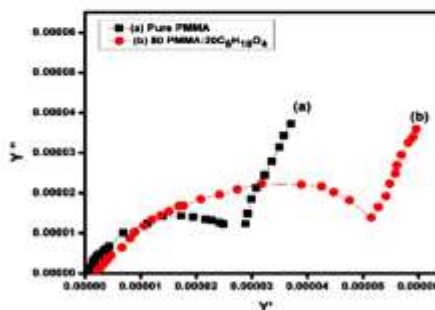


Fig 1: Complex Admittance plot

The complex admittance plot is a powerful method to investigate the ion conduction mechanism. The complex admittance Y^* is given by the relation


$$Y^* = 1/Z^* = Y' + jY'' \quad (1)$$

Where Y and Y'' is the real and imaginary part of admittance respectively. Fig 1 [a, b]. Shows Y'' vs Y' of all samples at 303K. The plot shows a low frequency arc and high frequency spike. The spike represents the bulk response. The bulk capacitance (C_b) can be calculated at any point along this spike using the relation

international scientific research | IJASOS Approved Journal Database | Home and Abstracts Page

Home | EDITORIAL BOARD | ARCHIVE | INSTRUCTIONS | INDEXING | SOCIETY | CONTACT US

International Journal of Advanced Scientific Research











SUBMIT YOUR ARTICLE
www.ijasos.com

OFFICE





SEARCH ONLINE NOW
OFFICE: ON
MAIL: ON
SEND NAME:

International Journal of Advanced Scientific Research

Journal List
[Download Cover Page](#)
[Index Page](#)

Micro

Activate Windows
Go to Settings to activate Windows.

3:21 PM
10/24/2021



THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.F.Kingslin Mary Genova
Title of the Paper : Characterization of proton conducting blend polymer electrolyte using PVA-PAN doped with NH₄SCN

Characterization of proton conducting blend polymer electrolyte using PVA-PAN doped with NH₄SCN

M.Premalatha^{1,2}, T. Mathavan^{1,*}, S.Selvasekarapandian², F.Kingslin Mary Genova^{3,*}, R.Umamaheswari³

¹PG & Research Department of Physics, N.M.S.S.Vellaichamy Nadar College, Madurai-625 019, India

²Materials Research Center, Coimbatore-641 045, India.

³Department of physics, S.F.R. College for Women, Sivakasi-626 128, India

*Email: tmathavan@gmail.com, kingslin.genova.70@gmail.com

Abstract. Polymer electrolytes with proton conductivity based on blend polymer using polyvinyl alcohol (PVA) and poly acrylo nitrile (PAN) doped with ammonium thiocyanate have been prepared by solution casting method using DMF as solvent. The complex formation between the blend polymer and the salt has been confirmed by FTIR Spectroscopy. The amorphous nature of the blend polymer electrolytes have been confirmed by XRD analysis. The highest conductivity at 303 K has been found to be $3.25 \times 10^{-3} \text{ S cm}^{-1}$ for 20 mol % NH₄SCN doped 92.5PVA:7.5PAN system. The increase in conductivity of the doped blend polymer electrolytes with increasing temperature suggests the Arrhenius type thermally activated process. The activation energy is found to be low (0.066 eV) for the highest conductivity sample.

Keywords: FTIR, XRD, AC impedance, activation energy

INTRODUCTION

In the field of electrochromic energy devices such as batteries, fuel cells etc., proton conducting polymer electrolytes play a essential role because of its mechanical and electrical properties [1]. Various methods have been adopted to improve the electrical, mechanical and electrochemical properties of polymer electrolytes. Among the various methods, Polymer blending is the most promising way to improve these properties which is a mixture of structurally different polymers. There are many reports available based on PVA-PVP [2], P[VdF-HEP]-PVAc[3], PVAc-PMMA[4], PVdF-PMMA[5] and so on. PVA is a semi crystalline polymer containing hydroxyl group attached to methane carbons which can be a source of hydrogen bonding. PAN is a synthetic, semi crystalline organic polymer resin which is a common substitute for wool in clothing and home furnishings. It is already reported that the molecular weight of 92.5%PVA: 7.5% PAN exhibits the conductivity of $1.13 \times 10^{-7} \text{ S cm}^{-1}$ at room temperature [6]. In this work, proton conducting polymer blend electrolyte based on PVA-PAN doped with ammonium thiocyanate (NH₄SCN) is synthesized and characterized. Ammonium salts have already been reported as a good proton donors to the polymer matrix [7].

EXPERIMENTAL TECHNIQUE

Blend polymer electrolytes are prepared with optimized compositions of 92.5% PVA(MW 1,25,000): 7.5 % PAN (MW 1,40,000) and various compositions of ammonium thiocyanate using dimethyl formamide (DMF) as solvent by solution casting technique. 92.5% weight of PVA is stirred in DMF at 60°C for 3 hours and after its complete dissolution, 7.5 % weight of PAN is added and stirred for 2 hours after which the ammonium salt is added. The mixture is stirred till it becomes homogeneous. Then it is poured in the petri dish and evaporated at 60°C in vacuum oven. Free standing film is obtained after 48 hours. Films obtained with 5 mol%, 10mol %, 15 mol%, 20mol% and 25mol % by weight of ammonium thiocyanate. Then the film is carefully removed from the petridish and sealed in an airtight cover. Then the prepared films were subjected to Fourier transform infrared spectroscopy (FTIR) using SHIMADZU-IR Affinity-1 spectrophotometer. The XRD patterns were recorded at room temperature using a XPERT-PRO Diffractometer with Cuku radiation at 40 KV and 30 mA in the 2θ range of 10°-80°. The electrical properties of the films were

3/15/2021

AIP Conference Proceedings

 MENU

SIGN IN/REGISTER  



Scilight Highlights of the best new research in the **physical sciences** 

[LEARN MORE](#)

AIP

Conference Proceedings

HOME

BROWSE

MORE ▾

Organizing a conference?

Enjoy fast, cost-effective publication of your meeting's key research

[GET A QUOTE](#)

LIKE AND FOLLOW US  

AIP Conference Proceedings has been a trusted publishing partner for more than 40 years, delivering fast, affordable, and versatile publishing for maximum exposure of your meeting's key research. Our conference proceedings program reports the findings presented at scientific meetings from large international conferences to small specialist workshops. Subject areas span the physical sciences, including physics, math, chemistry, materials science, and engineering.

Why publish with us:

- **Indexed in leading databases – Web of Science, Scopus, and Inspec**
- Fast publication times – 4-6 weeks after final submission
- Author-friendly license agreement – you retain copyright of your own work
- Global reach – nearly 4,000 institutions in 190+ countries
- Customized publishing options including print-on-demand – best value and flexibility



THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.S.Selvalakshmi and Dr.N.Vijaya
Title of the Paper : Impedance studies of a green blend polymer electrolyte based on PVA and Aloe-vera

Impedance Studies Of A Green Blend Polymer Electrolyte Based On PVA And Aloe-Vera

S.Selvalakshmi¹, T.Mathavan^{*1}, N.Vijaya^{*2}, Selvasekarapandian^{3,4},
M.Premalatha^{1,4}, S.Monisha^{1,4}

¹Department of Physics, N.M.S.S.V.N College, Nagamalat, Madurai, Tamilnadu.

²Department of Physics, The S.F.R. College for Women, Sivakasi, Tamilnadu.

³Department of Nano Science and Technology, Tamilnadu Agricultural University, Coimbatore, Tamilnadu.

⁴Materials Research Centre, Coimbatore, Tamilnadu.

*Corresponding authors: timathavan@gmail.com, viji_phy_gfrc@yahoo.co.in

Abstract. The development of polymer electrolyte materials for energy generating and energy storage devices is a challenge today. A new type of blended green electrolyte based on Poly-vinyl alcohol (PVA) and Aloe-vera has been prepared by solution casting technique. The blending of polymers may lead to the increase in stability due to one polymer portraying itself as a mechanical stiffener and the other as a gelled matrix supported by the other. The prepared blend electrolytes were subjected to Ac impedance studies. It has been found out that the polymer film in which 1 gm of PVA was dissolved in 40 ml of Aloe-vera extract exhibits highest conductivity and its value is $3.08 \times 10^{-4} \text{ S cm}^{-1}$.

Keywords: PVA, Aloe-vera, Ac impedance

INTRODUCTION

Ionic conductors are key components for many electrochemical applications, mainly in the field of energy conversion, for example, in photo-electrochemical (PEC) solar cells and fuel cells, in energy storage devices like batteries and in other technological applications like electro-chromic devices, super-capacitors, electrochemical sensors [1]. Several synthetic polymer hosts for solid polymer electrolyte application have been developed in the past, such as poly(ethylene oxide) [2], poly(propylene oxide) [3], poly (acrylonitrile) [4], poly(methyl methacrylate) [5], poly (vinyl chloride) [6], poly(vinylidene fluoride) [7], and poly (vinyl alcohol) [8]. The use of synthetic polymers has drawn much criticism lately due to their complicated synthesis, high costs, and safety issues [9]. To avoid these problems, the interests have been shifted over to biodegradable, abundantly available, non-toxic, biopolymers or natural polymers. One such natural polymer is aloe-vera. Pharmaceutical studies like anti-fungal and anti-bacterial studies have been done for aloe-vera. The impedance study of the Aloe-vera leaves has been reported to evaluate the health status of the plant [10]. In the present study, solid blend polymer electrolyte based on PVA and Aloe-vera has been synthesised and impelled to impedance studies for device application. Blending of polymers is the

most viable approach for the preparation of polymer electrolytes which has been adopted in this research work. Polyvinyl alcohol (PVA) has excellent film forming, emulsifying and adhesive properties. PVA is non-toxic and has high tensile strength and flexibility. The gel present in the leaf of Aloe-vera has electrical properties and it can generate electricity [11]. PVA having high tensile strength can act as a mechanical stiffener and Aloe-vera extract serves as the gelled matrix in the electrolyte. The prepared green polymer electrolytes were characterized by ac impedance spectroscopy.

Experimental Details:

One gram of Poly vinyl alcohol (PVA) was dissolved in different quantity of Aloe-vera extract to formulate the green blend polymer films. The amount of PVA was kept fixed as 1 gm and the volume of Aloe-vera extract was taken as 10 ml, 20 ml, 30 ml, 40 ml, 50 ml and 60 ml.

The gel present in the leaf of Aloe-vera was detached and was crushed finely in the mixer. The gelatinous solution was double filtered and 1 gm of PVA was added to the extract. The mixture was magnetically stirred continuously for 36 hours

IME Solid State Physics Symposium 2015

AIP Conf. Proc. 1731, 140044-1-140044-3, doi: 10.1063/1.4948210
Published by AIP Publishing, 978-0-7354-1778-8/\$30.00

140044-1

3/15/2021

AIP Conference Proceedings

 MENU

SIGN IN/REGISTER  

Scilight Highlights of the best new research
in the **physical sciences** 

[LEARN MORE!](#)

AIP

Conference Proceedings

HOME

BROWSE

MORE ▾

Organizing a conference?

Enjoy fast, cost-effective publication of your meeting's key research

[GET A QUOTE](#)

LIKE AND FOLLOW US  

AIP Conference Proceedings has been a trusted publishing partner for more than 40 years, delivering fast, affordable, and versatile publishing for maximum exposure of your meeting's key research. Our conference proceedings program reports the findings presented at scientific meetings from large international conferences to small specialist workshops. Subject areas span the physical sciences, including physics, math, chemistry, materials science, and engineering.

Why publish with us:

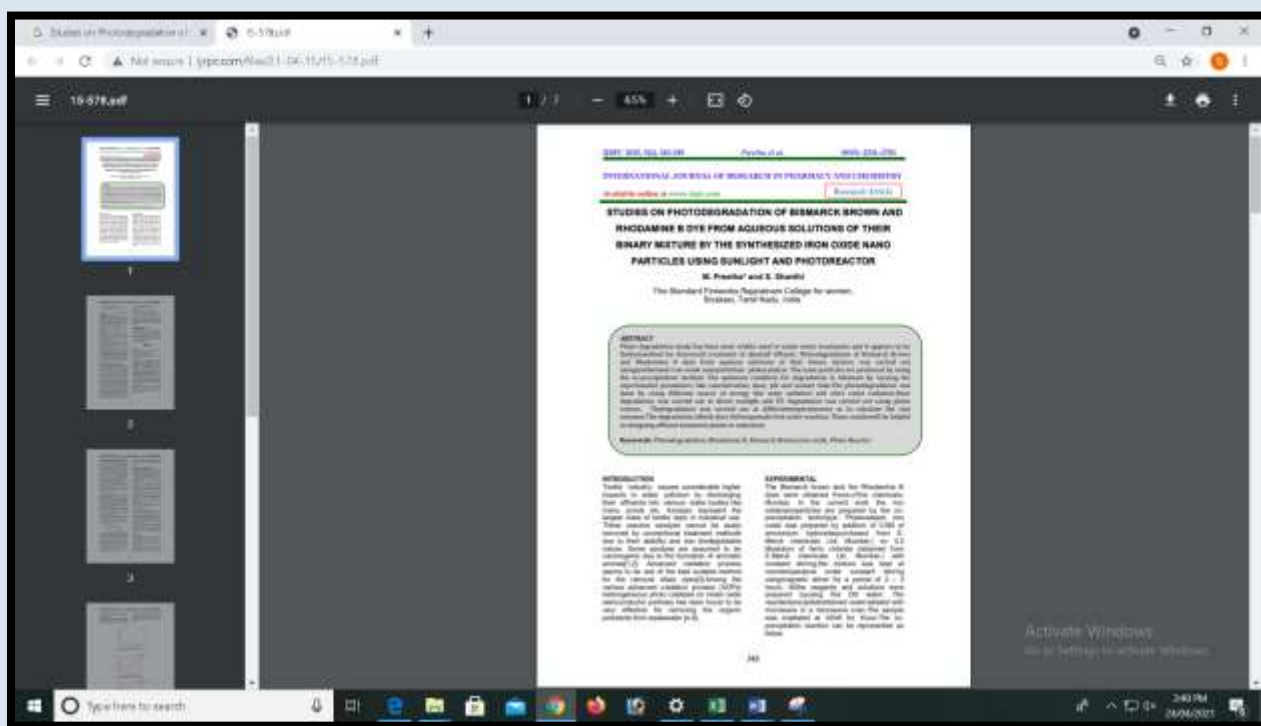
- **Indexed in leading databases – Web of Science, Scopus,** and Inspec
- Fast publication times – 4-6 weeks after final submission
- Author-friendly license agreement – you retain copyright of your own work
- Global reach – nearly 4,000 institutions in 190+ countries
- Customized publishing options including print-on-demand – best value and flexibility

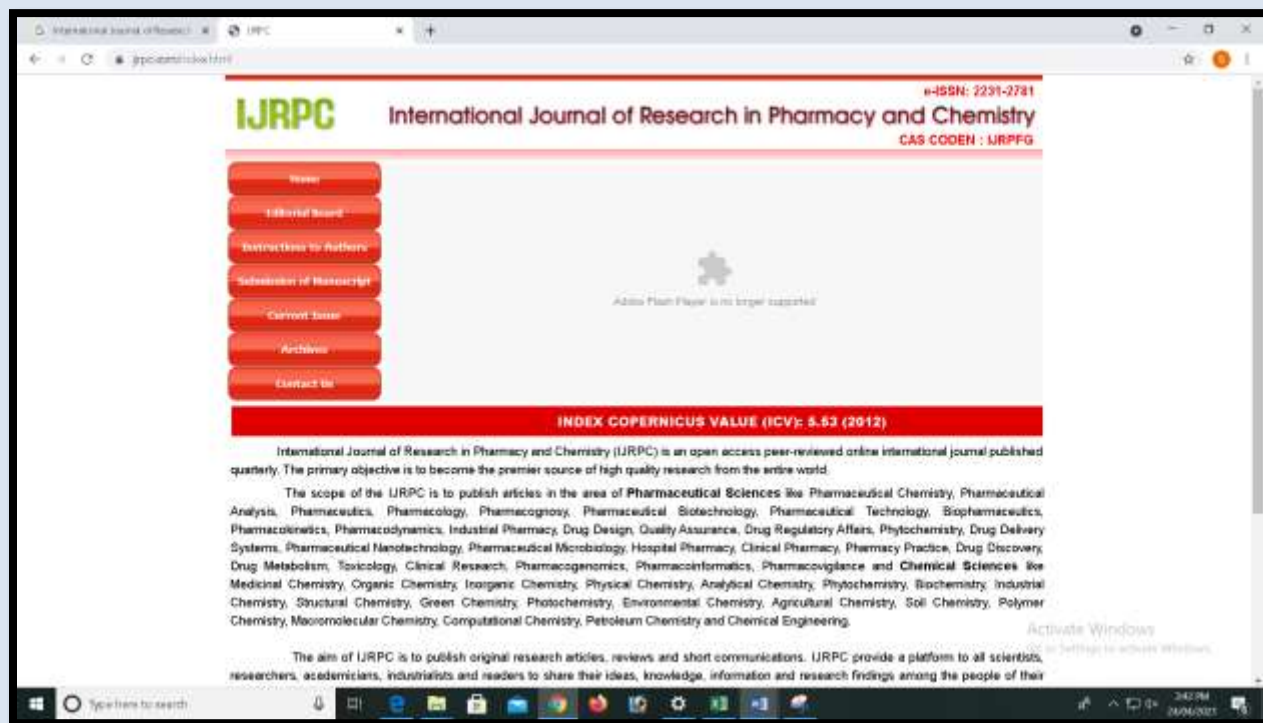


**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.S.Shanthi
Title of the Paper : Studies on Photodegradation of Bismarck Brown and Rhodamine B Dye from aqueous solutions of their binary mixture by the synthesized iron oxide nano particles using sunlight and photoreactor







**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.N.Umasangari
**Title of the Paper : Synthesis and characterization of nano sized ZnO using
conventional and microwave heating methods**





ChemTech

International Journal of ChemTech Research

CODEN (USA): IJCRGG

ISSN: 0974-4290

Abstracting and Indexing [15 June 2017]

International Journal of ChemTech Research has been selected for Abstracting, Indexing, listing by-

American Chemical Society for inclusion in its Database **CAS**.

NLM ID [USA]= **101513129** [Serial]

Selected by NASCAIR for inclusion in MAPA.

Selected by NASCAIR for inclusion in **ISA**,

Registered with Index Copernicus International Plc.

Selected by **DOAJ, USA.**

EBSCO, USA

Included in **Scimago**. [Rank]

Selected by **Index Copernicus International** with ICV[112.85]

Publindex,

Colombia-Latin America

EVISA, DATA BASE (Europe),

Birmingham Public Library, Birmingham, Alabama,

RGATE Database

Beardslee Library Journals, Holland.

UNIVERSITY LIBRARY OF University of SASKATCHEWAN,

ResearchBible/Journal Seeker.

AYUSH, India.

ersa.lib.sjtu.edu.cn , Global Impact Factor , New Jour,

Research Gate,

Cite Factor,

Vikaspsoar,

e.library.ru



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.S.Shanthi
**Title of the Paper : In silica drug activity prediction of chemical components
of Acalypha Indica**



International Journal of Engineering and Applied Sciences

ISSN: 2294-3661 | Crossref DOI | SJIF: 5.138 | PIF: 3.854

[An ISO 9001:2018 Certified Online and Print Journal]

Paper Title or Author Name

Home | About Us | Topics | Call for Papers | Author Guidelines | Payment Options | Editorial Board | Submit An Article | Contact Us

High Impact Factor and 20+ Indexing Databases

IJEAS is indexed by DOAJ, Google Scholar, Open J Gate, Yahoo, New Jour, get CITED, Digg, PDF Cast, Issuu etc. IJEAS is also approved by Directory of Research Journal Indexing, NSICIR, New Delhi and

TRACK PAPER

About IJEAS

- Home
- Hard Copy of Certificates

Welcome

International Journal of Engineering and Applied Sciences is an international premier peer reviewed open access engineering and technology journal promoting the discovery, innovation, advancement and dissemination of basic and transitional knowledge in engineering, technology and related disciplines. IJEAS would take much care in

Important Dates

Volume 8 Issue 4

Last Date of Paper Submission

© 2020 IJEAS. All rights reserved. | Home | Call for Papers | FAQ | Terms and Conditions



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.P.R.Kavitha Rani
Title of the Paper : Synthesis Spectral Characterization and Molecular docking studies of lawsone as protein kinase inhibitors

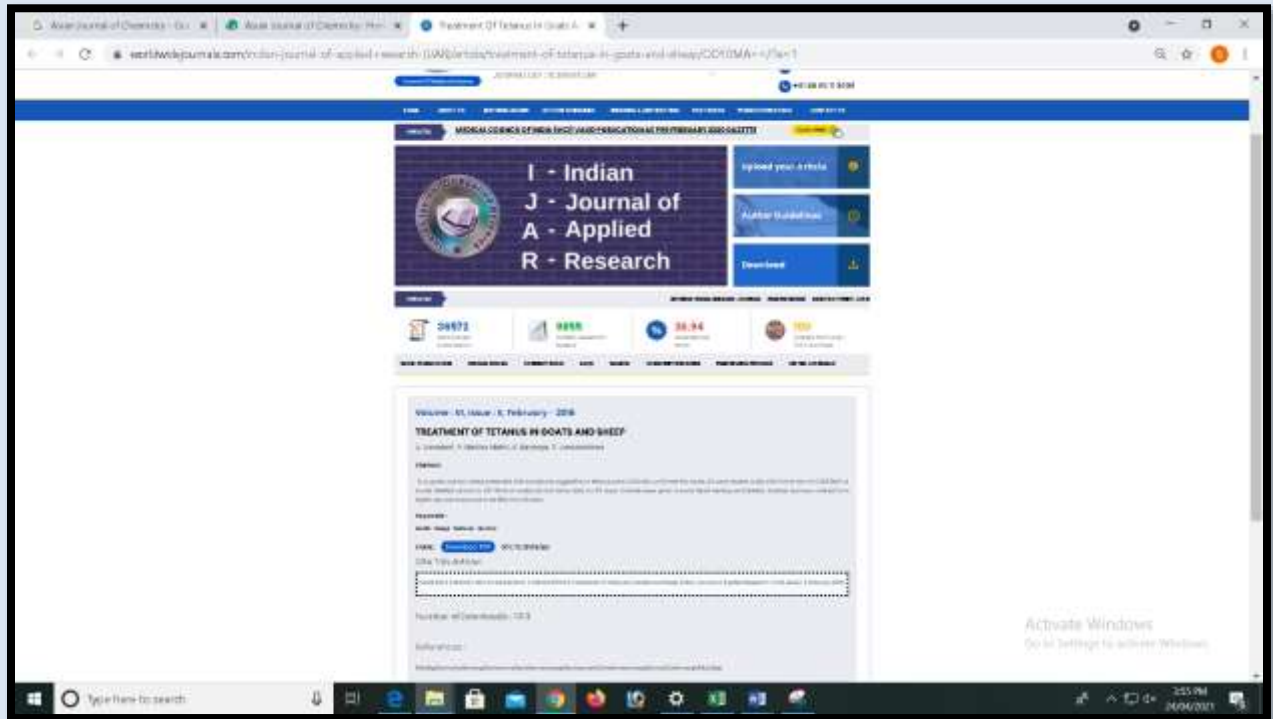
The screenshot shows a web browser displaying a ResearchGate article. The article title is "Synthesis, Spectral Characterization and Molecular Docking Studies of Lawsone Derivatives as Protein Kinase Inhibitors". The authors listed are C. Antony Seshamel and P.R. Kavitha Rani. The article is dated January 2016 and is published in the International Journal of Chemistry. The abstract mentions the synthesis of lawsone derivatives and their characterization using various spectroscopic techniques. The page also features a "Download PDF" button and a "Copy" button. There are several advertisements on the page, including one for "Pluripotent stem cell" and another for "Cancer Stem Cells: Advances in Biology and Clinical Translation".

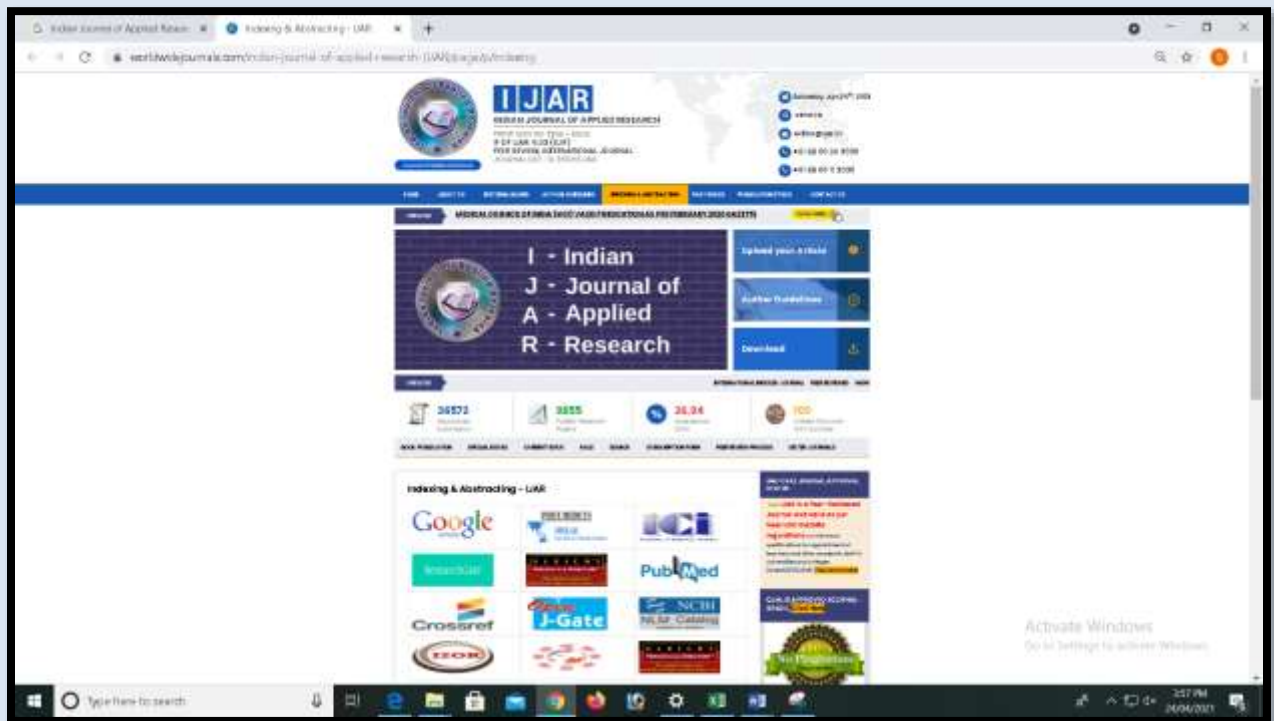
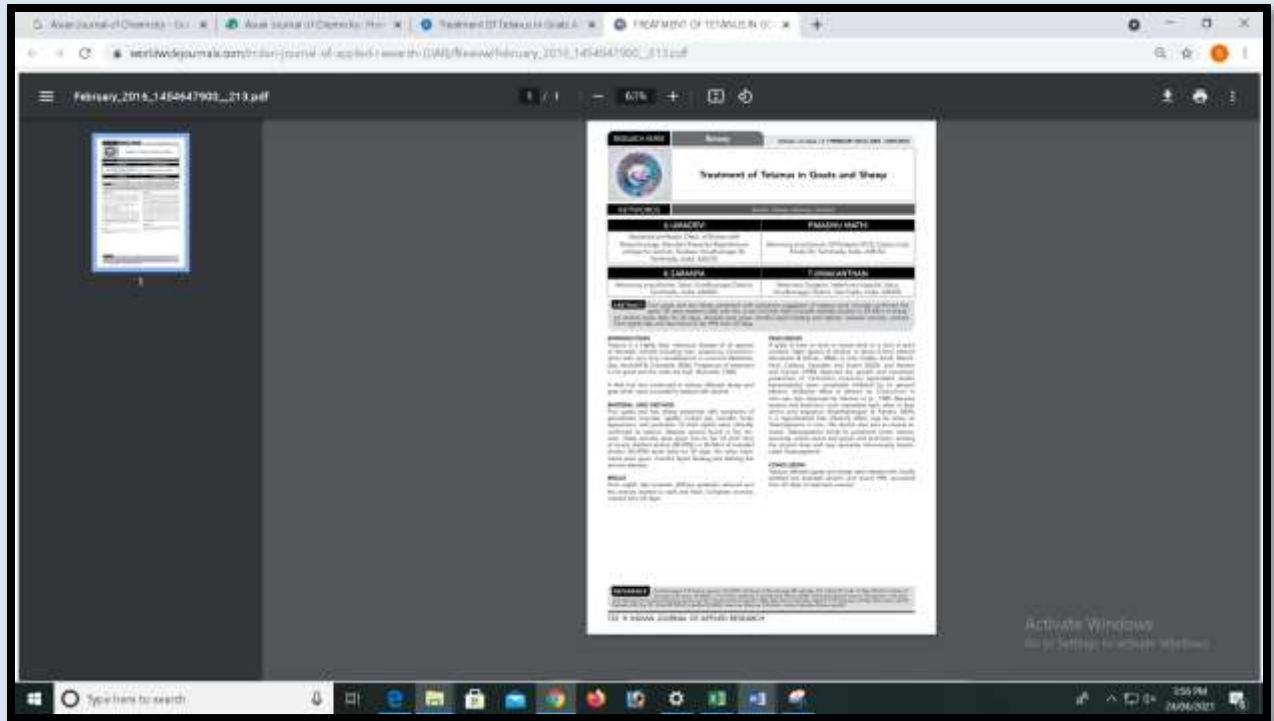


**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.U.Umadevi
Title of the Paper : Treatment of Tetanus in Goats and Sheep



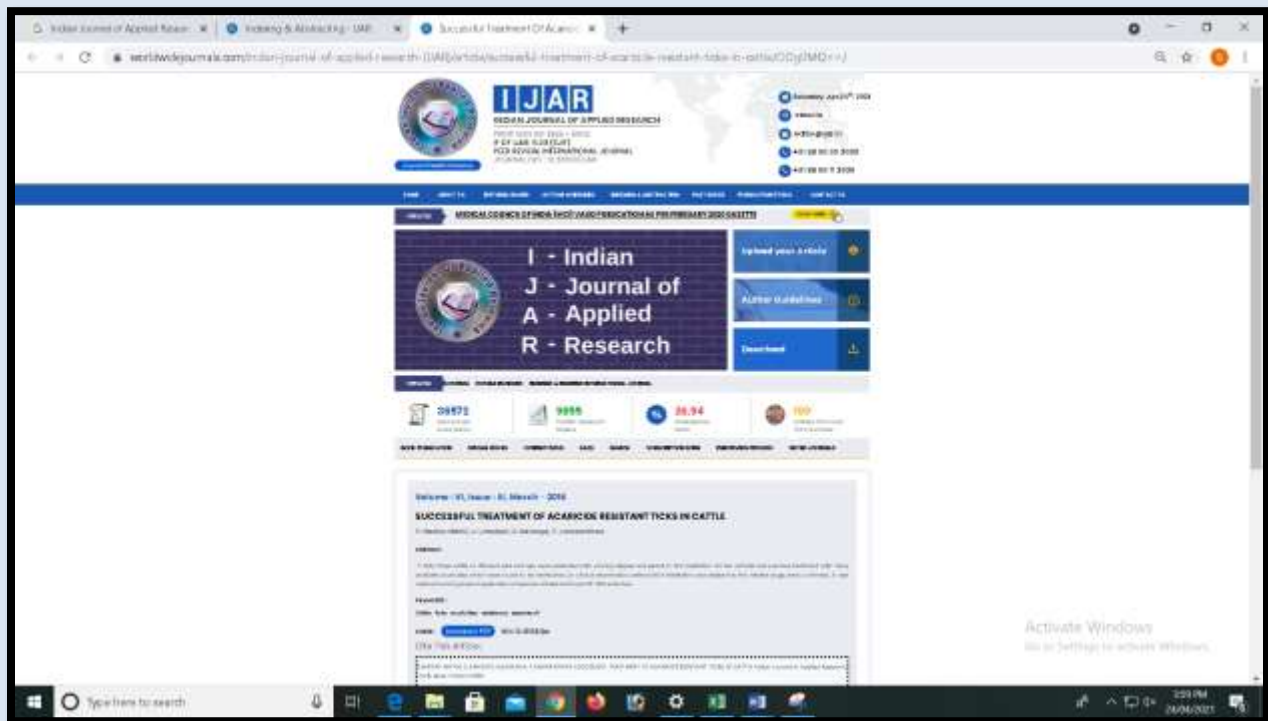


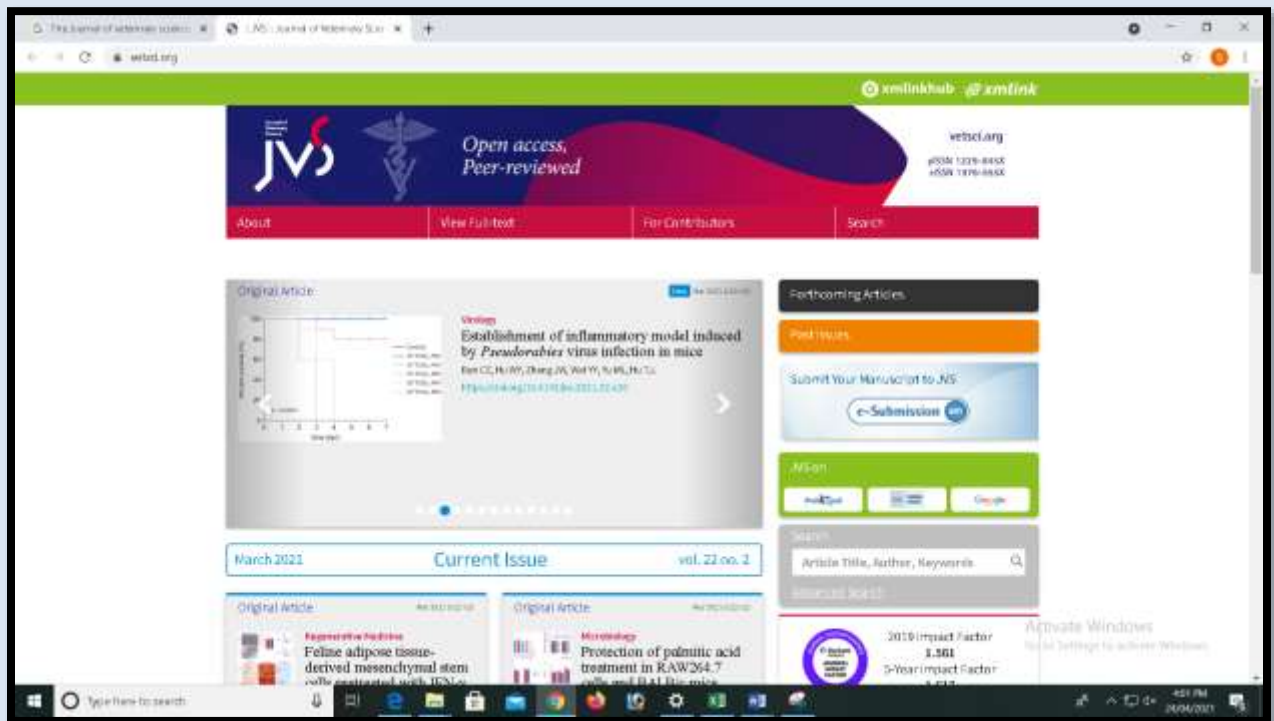
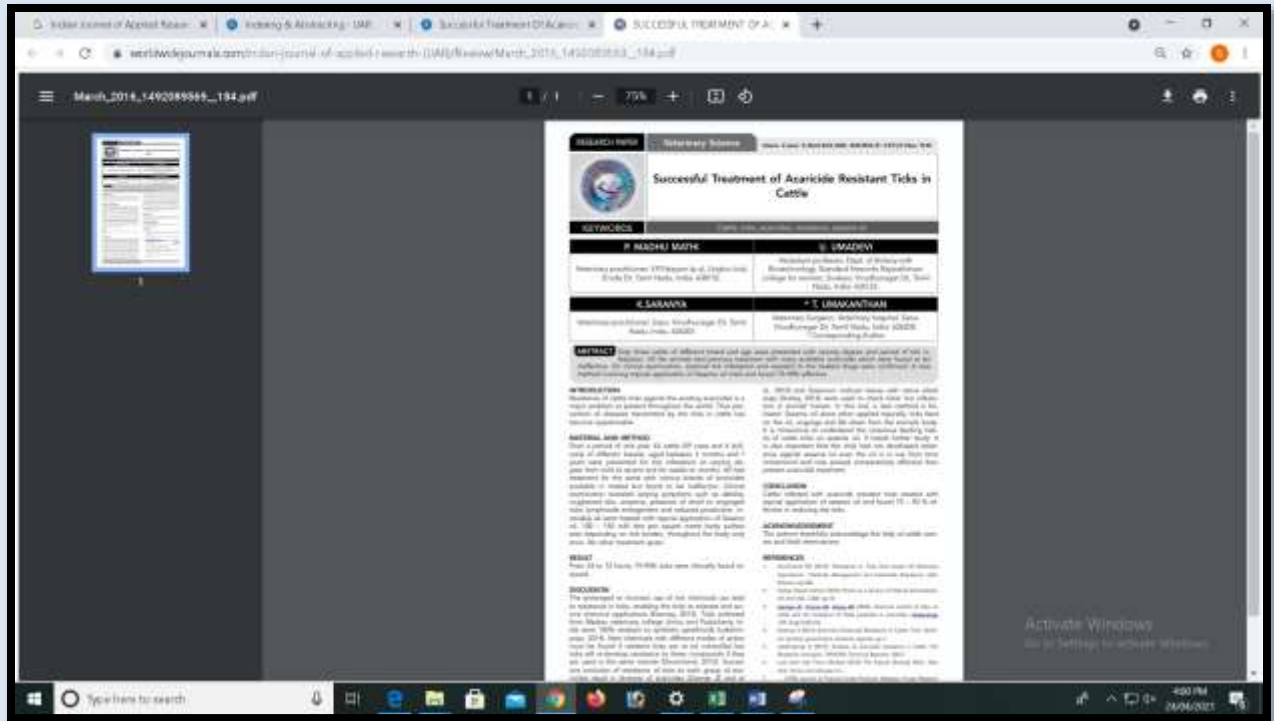


**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.U.Umadevi
Title of the Paper : Successful treatment of Acaricide Resistant Ticks in Cattle





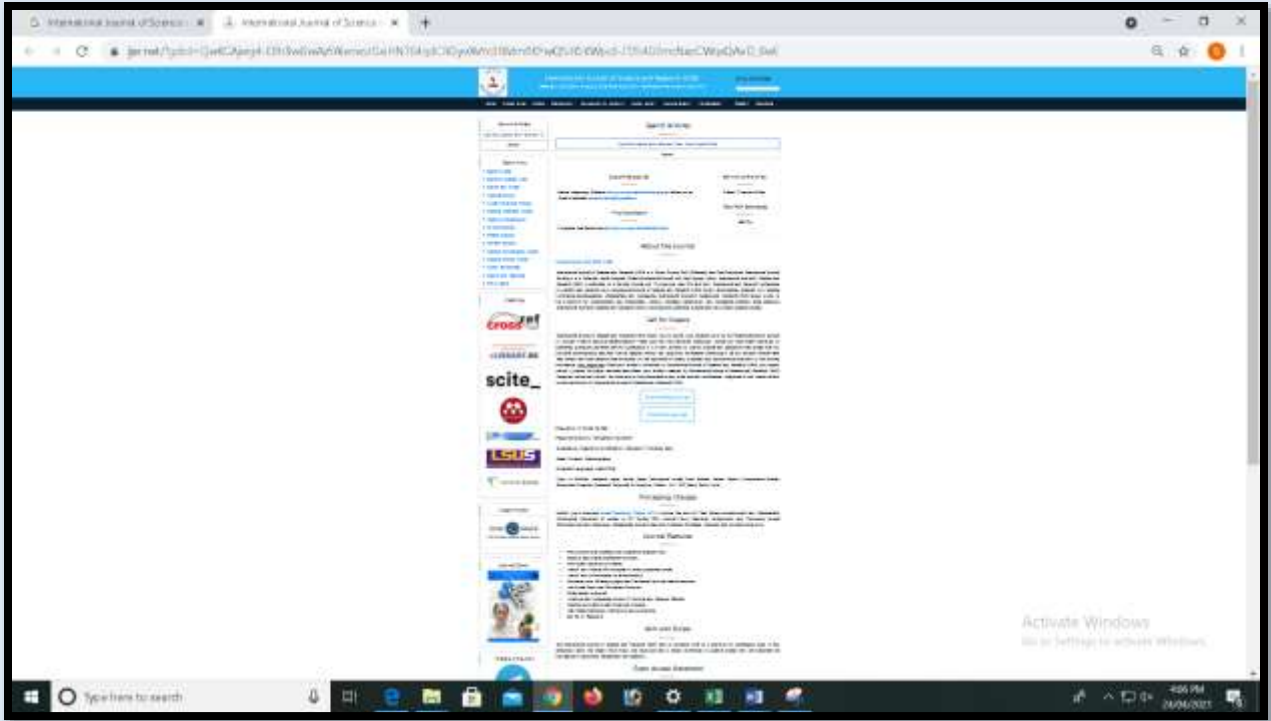


**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.U.Umadevi
**Title of the Paper : Successful homeopathic treatment of transmissible
tumour in dogs – Case report**



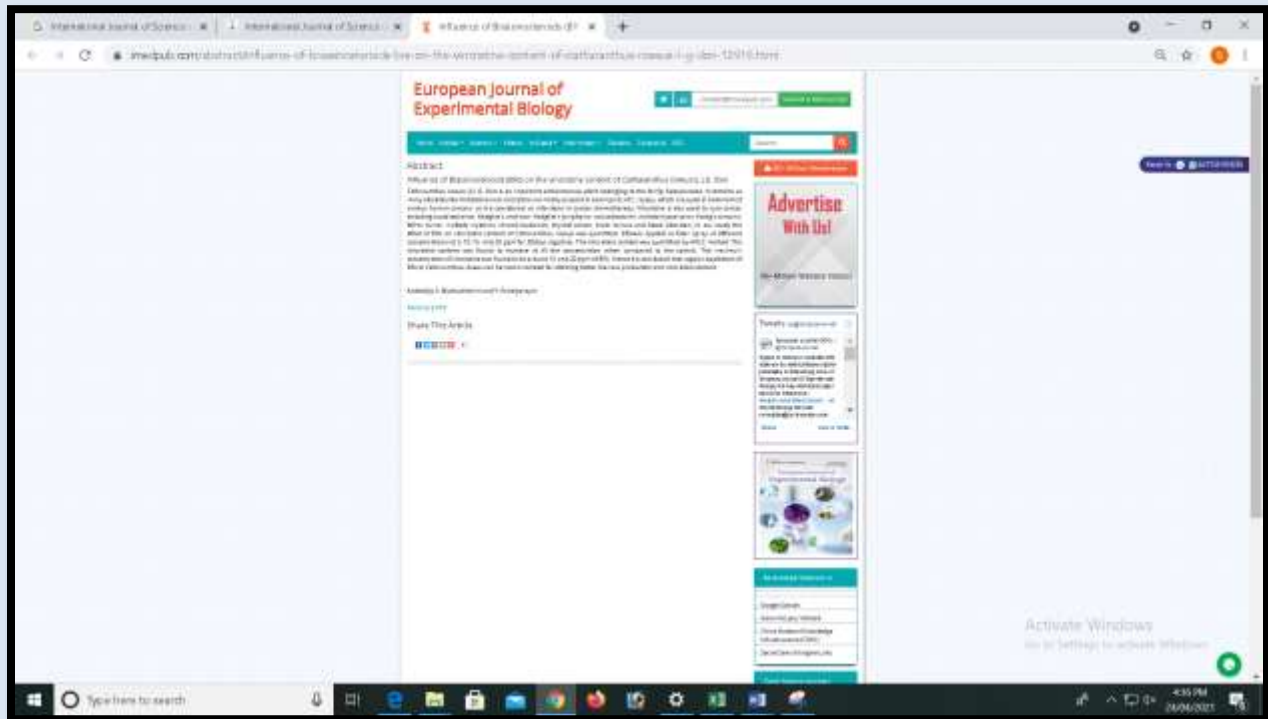


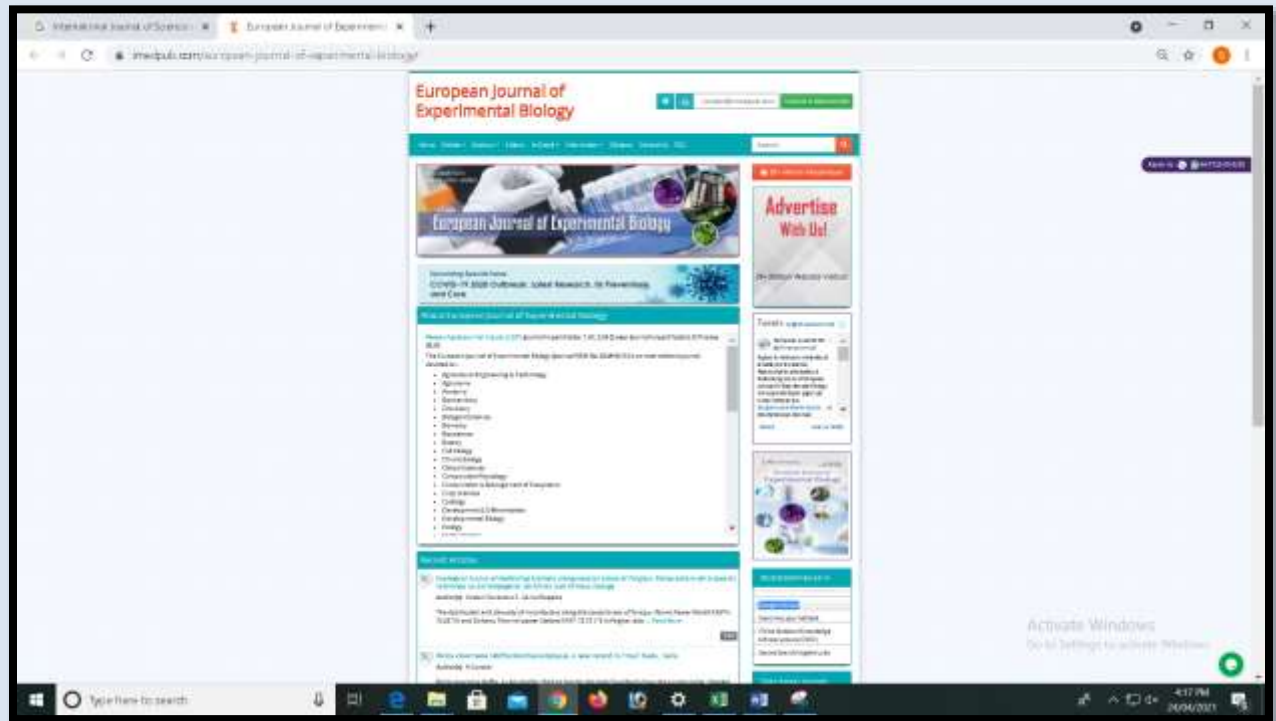


**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Ms.S.Muthulakshmi
**Title of the Paper : Influence of Brassinosteroids(BRs) on the vincristine
content of Catharanthus roseus (L.) G.Don.**



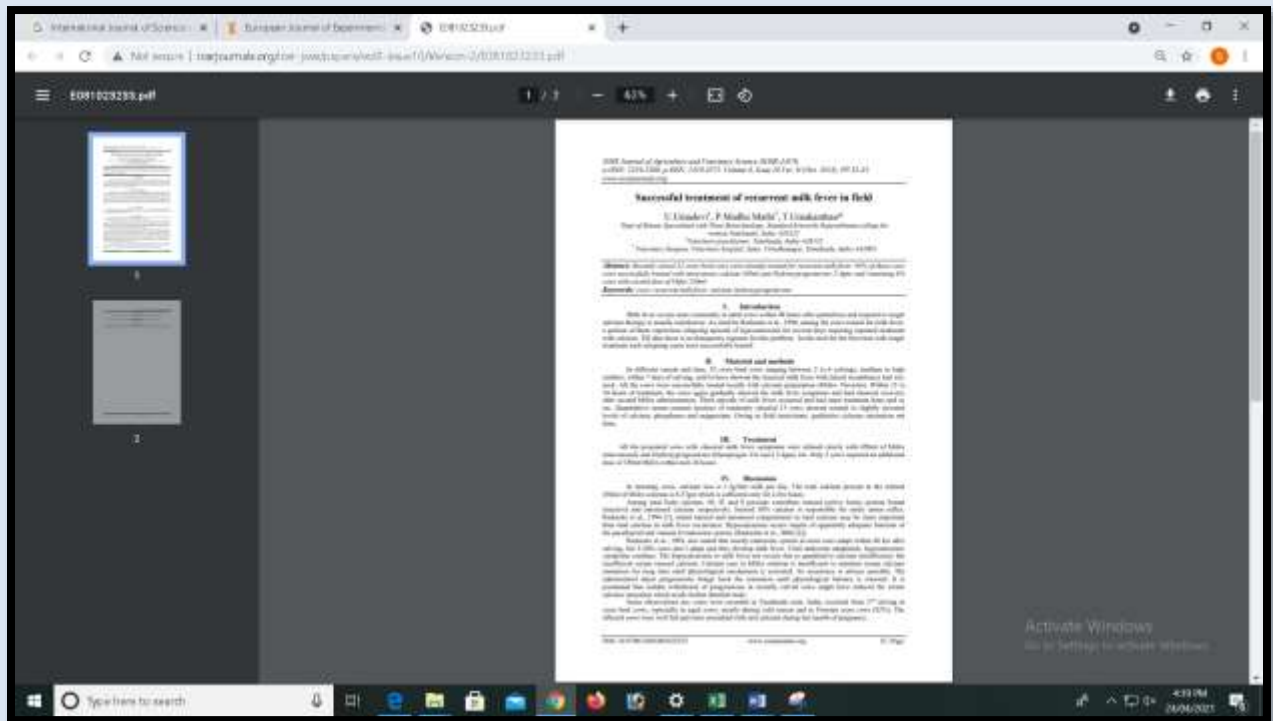


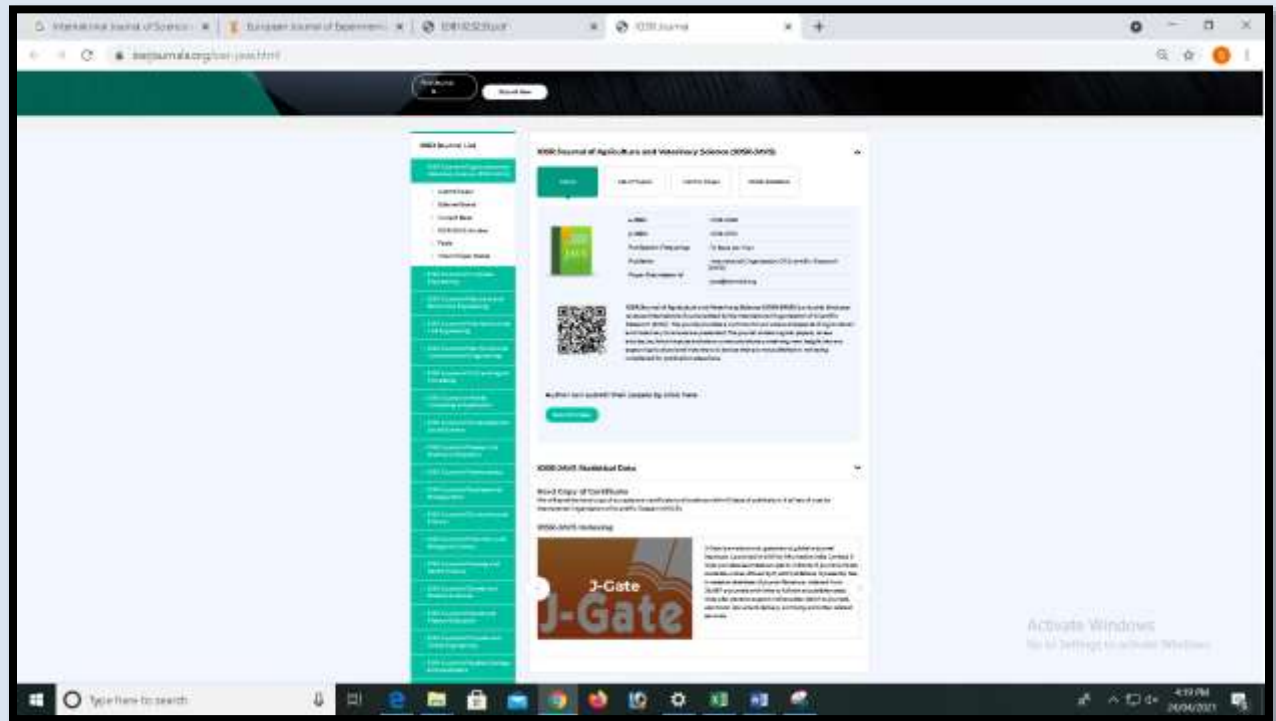


**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.U.Umadevi
Title of the Paper : Successful treatment of recurrent milk fever in field



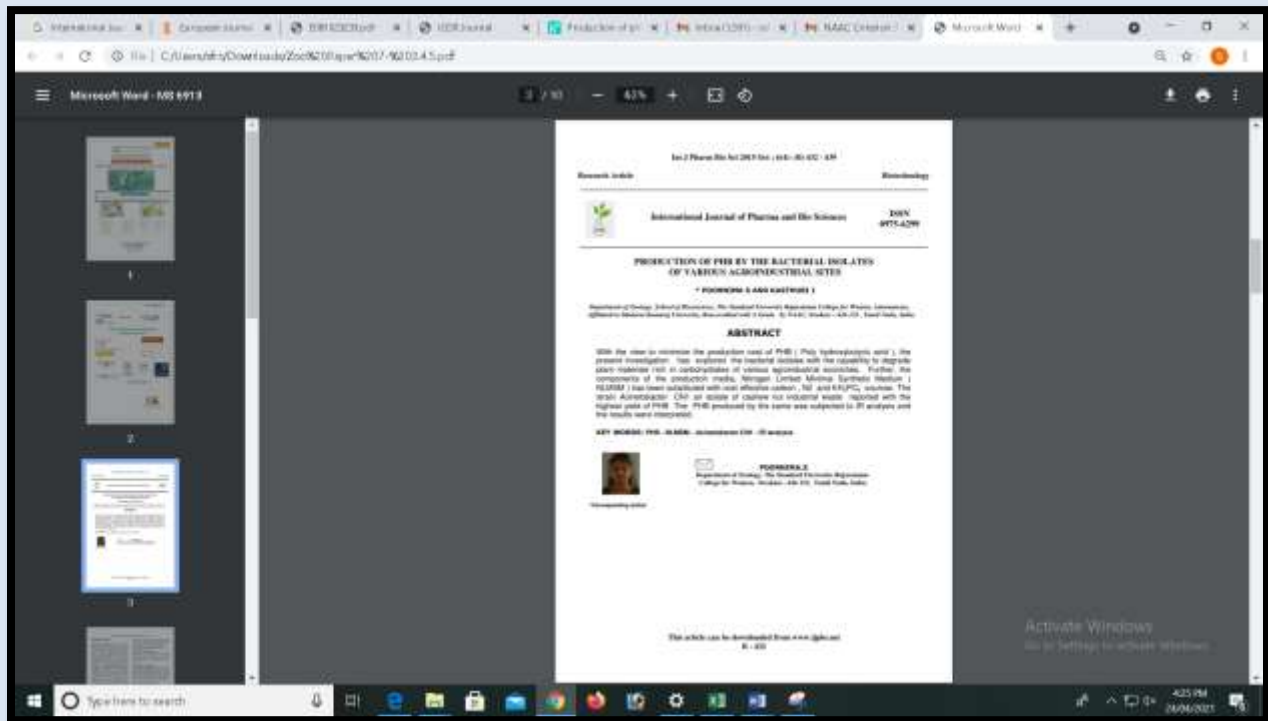


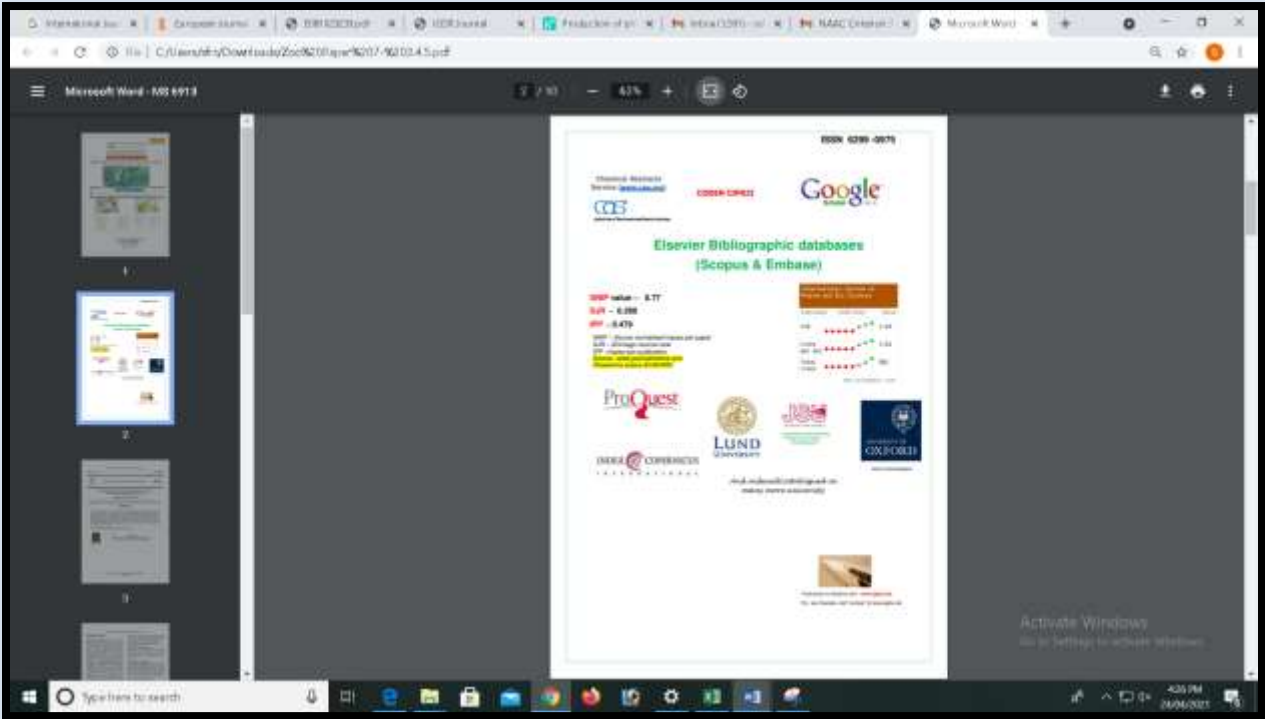
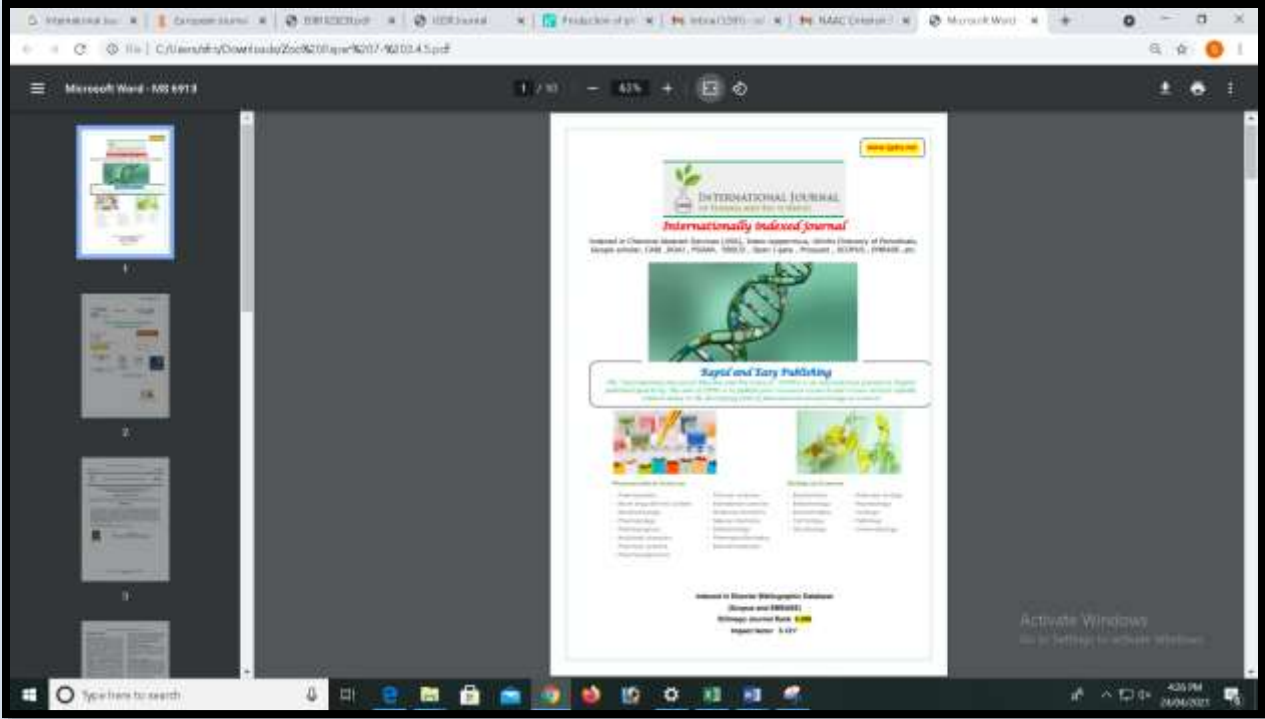


**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.J.Kasthuri
Title of the Paper : Production of PHB by the bacterial isolates of various agroindustrial sites



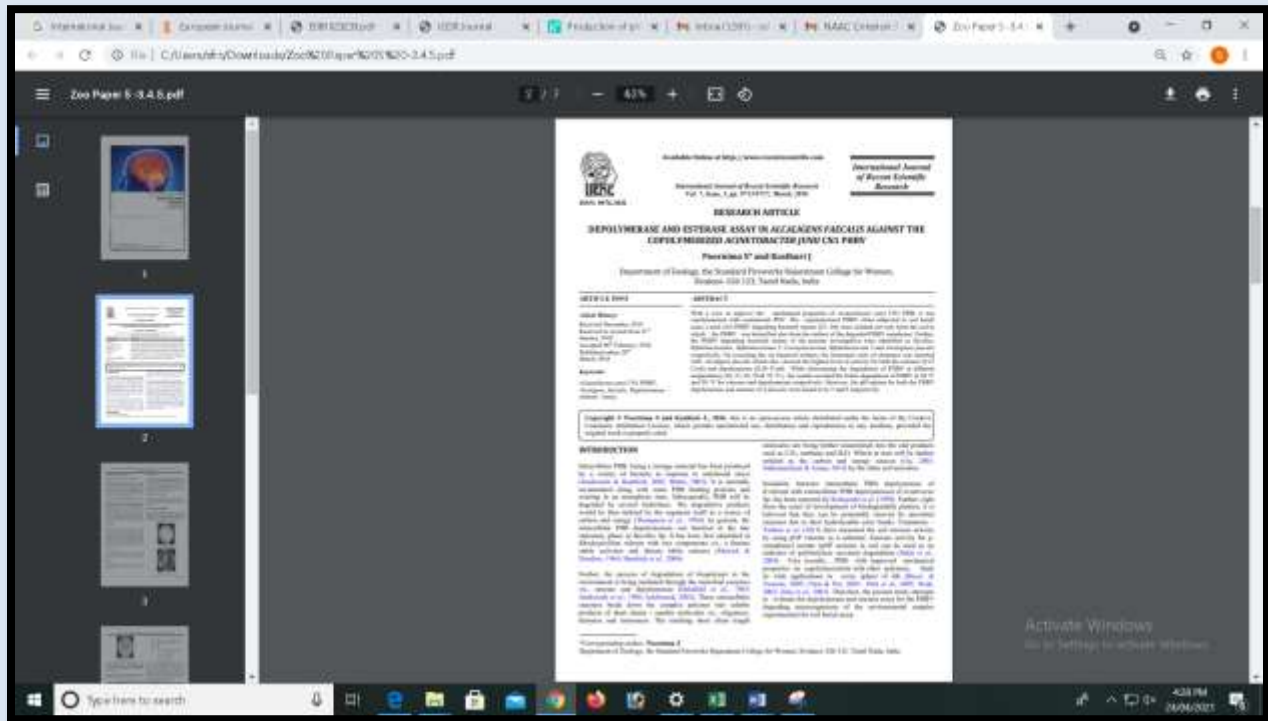


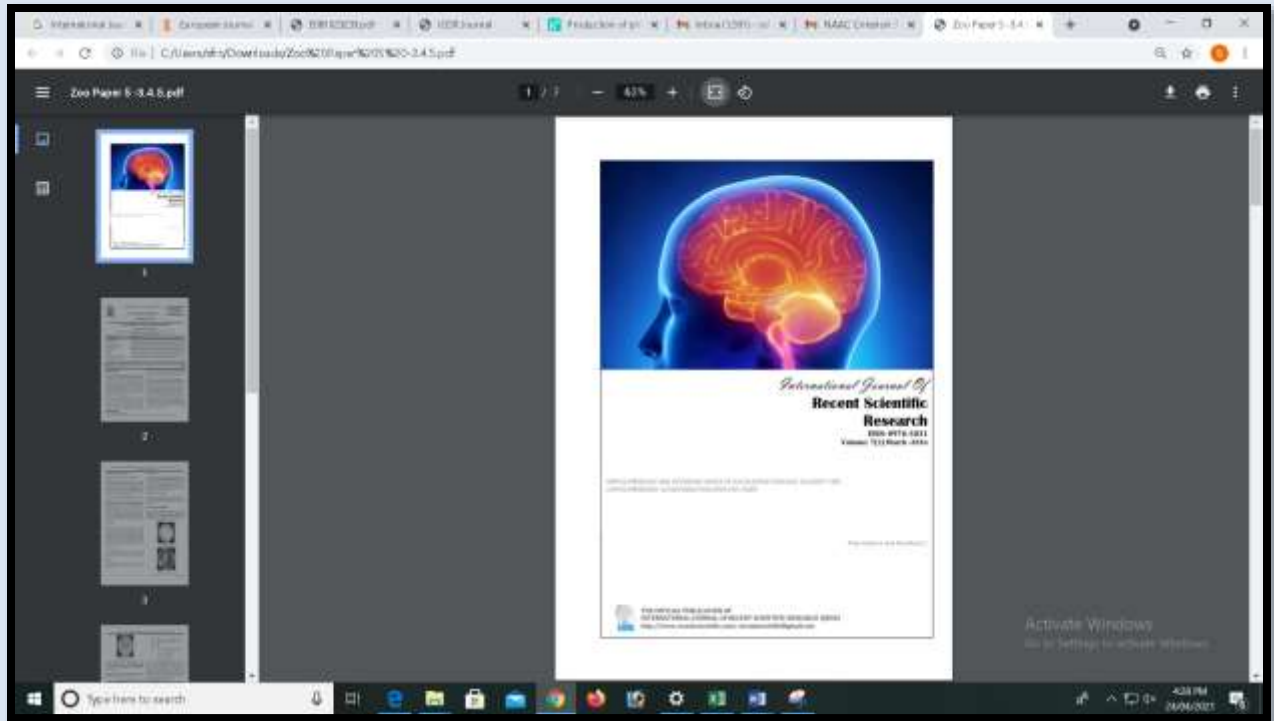


**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.J.Kasthuri
**Title of the Paper : Depolymerase and esterase assay in Alcaligenes faecalis
against the copolymerized Acinetobacter junii CN1 PHBV**







**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.B.Deepa
Title of the Paper : Bioinspiredsynthesis of selenium nanoparticles using flowers of Catharanthus roseus(L.) G.Don.and Peltophorum pterocarpum(DC.)Backer ex Heyne – a comparison



International Journal of ChemTech Research
CODEN: IJCTDH ISSN: 2691-4284

Abstracting and indexing [15 June 2017]

International Journal of ChemTech Research has been selected for Abstracting, indexing, listing by:

- American Chemical Society for inclusion in its Database **CAS**.
- NLM ID (USA) - **0211022 (Pubmed)**
- Selected by **NASCIAR** for inclusion in **WAPA**.
- Selected by **NASCIAR** for inclusion in **ISA**.
- Registered with Index Copernicus International Piv.
- Selected by **DOAJ, USA**, **EBSCO, USA**
- Included in **Scimago (Rank)**
- Selected by **Index Copernicus International** with ICV(112.88)

Publicities:

- Columbia Latin America
- EVISA, DATA BASE (Europe)**, Birmingham Public Library, Birmingham, Alabama, **ESATE Database**
- Scandinavian Library Journal, Holland**
- UNIVERSITY LIBRARY OF UNIVERSITY OF SASKATCHEWAN, Research Journal Section**
- AYUSA, India**
- ResearchGate, Global Impact Factor, New Jour, ResearchGate, Cite Factor, Whatsapp, eLibrary.in**

and, its positive evaluation by
Many other International databases.

Activate Windows
Go to Settings to activate Windows.



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.C.Devi Arockia Vanitha
**Title of the Paper : Real Coded Genetic Algorithm for Development of
Optimal G-K Clustering Algorithm**

The screenshot shows the SpringerLink interface for a conference paper. At the top, there is a search bar and navigation links for 'Home' and 'Log in'. The main content area features the paper title, authors (C. Devi Arockia Vanitha, D. Devaraj, M. Venkatesulu), and publication details (SEMCCO 2014: Swarm, Evolutionary, and Memetic Computing pp 264-274). It includes a 'Buy eBook' button for EUR 80.24 and a 'Buy paper (PDF)' button for EUR 24.95. A sidebar on the right lists benefits like 'Instant download' and 'Own it forever'. At the bottom, it mentions the paper is part of the 'Lecture Notes in Computer Science' book series (LNCS, volume 8947).

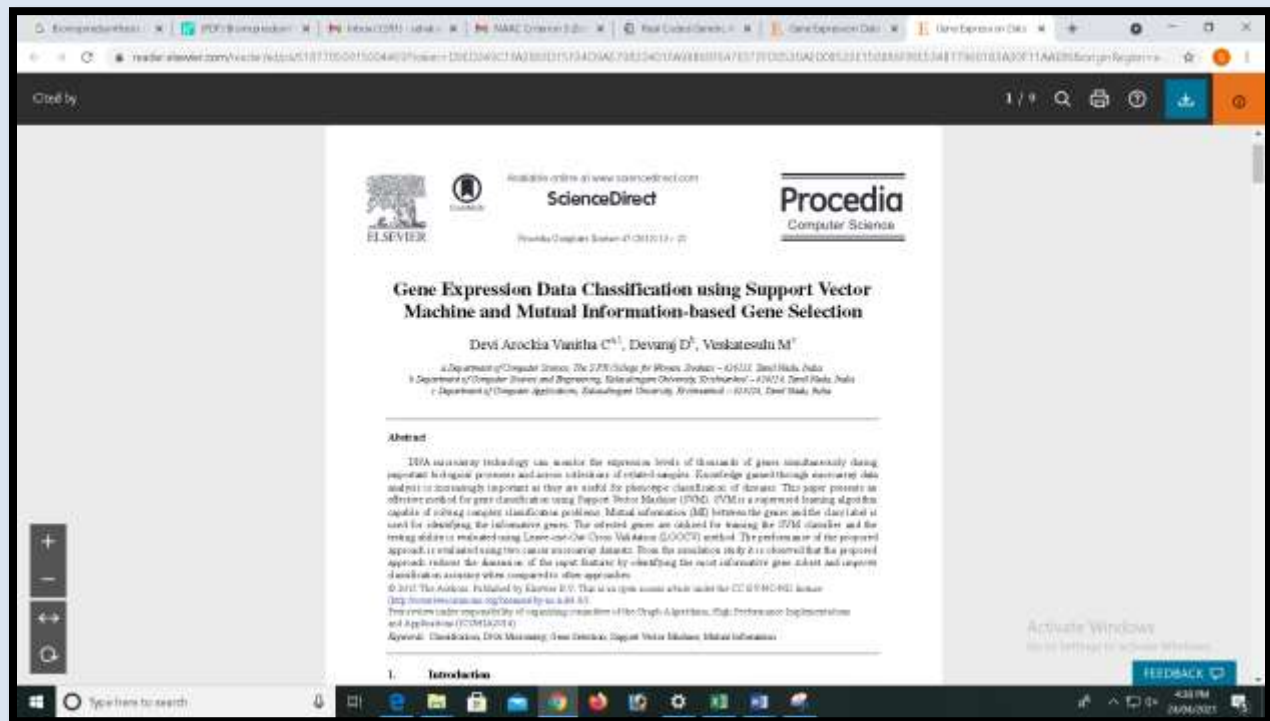
The screenshot displays the Springer website's landing page for 'Lecture Notes in Computer Science (LNCS)'. It features a search bar, navigation links (Home, Subjects, Services, Springer Shop, About us), and a list of sub-series including 'LNCS: Topical Sublibraries', 'LNCS: Transactions', and 'LNCS: Tutorials, State-of-the-Art Surveys, Festschriften'. The main content area provides a description of the series as a distinguished conference proceedings series publishing the latest research in computer science. It notes that the series is indexed in the Conference Proceedings Citation Index (CPCI), part of Clarivate Analytics' Web of Science, Scopus, EI Engineering Index, Google Scholar, and DBLP. The page also states that annually 600+ volumes, 20,000+ papers, and 45,000+ authors are published.



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.C.Devi Arockia Vanitha
**Title of the Paper : Gene Expression Data Classification using Support Vector
Machine and Mutual Information-based Gene Selection**



The screenshot shows a web browser window displaying the 'About the journal' page for Procedia Computer Science. The browser's address bar shows the URL: [sciencedirect.com/journal/procedia-computer-science/about/abstracting-and-indexing](https://www.sciencedirect.com/journal/procedia-computer-science/about/abstracting-and-indexing). The page header includes the journal title 'Procedia Computer Science', the text 'Open access', and a 'CiteScore' of 2.5. Below the header is a navigation menu with options: 'Articles & Issues', 'About', 'Publish', 'Search in the journal', 'Submit your article', and 'Guide for authors'. The main content area is titled 'About the journal' and has three sub-sections: 'Aims and scope', 'Editorial board', and 'Abstracting and indexing', with the latter being the active section. Under 'Abstracting and indexing', there is a list of indexing services: 'Conference Proceedings Citation Index', 'INSPEC', and 'Scopus'. The Windows taskbar at the bottom shows the search bar, task view button, and several application icons. The system tray on the right indicates the time as 13:20 and the date as 15-03-2021.

sciencedirect.com/journal/procedia-computer-science/about/abstracting-and-indexing

Procedia Computer Science
Open access
2.5
CiteScore

Articles & Issues About Publish Search in the journal Submit your article Guide for authors

About the journal

Aims and scope Editorial board **Abstracting and indexing**

- Conference Proceedings Citation Index
- INSPEC
- Scopus

Type here to search

Help improve this page

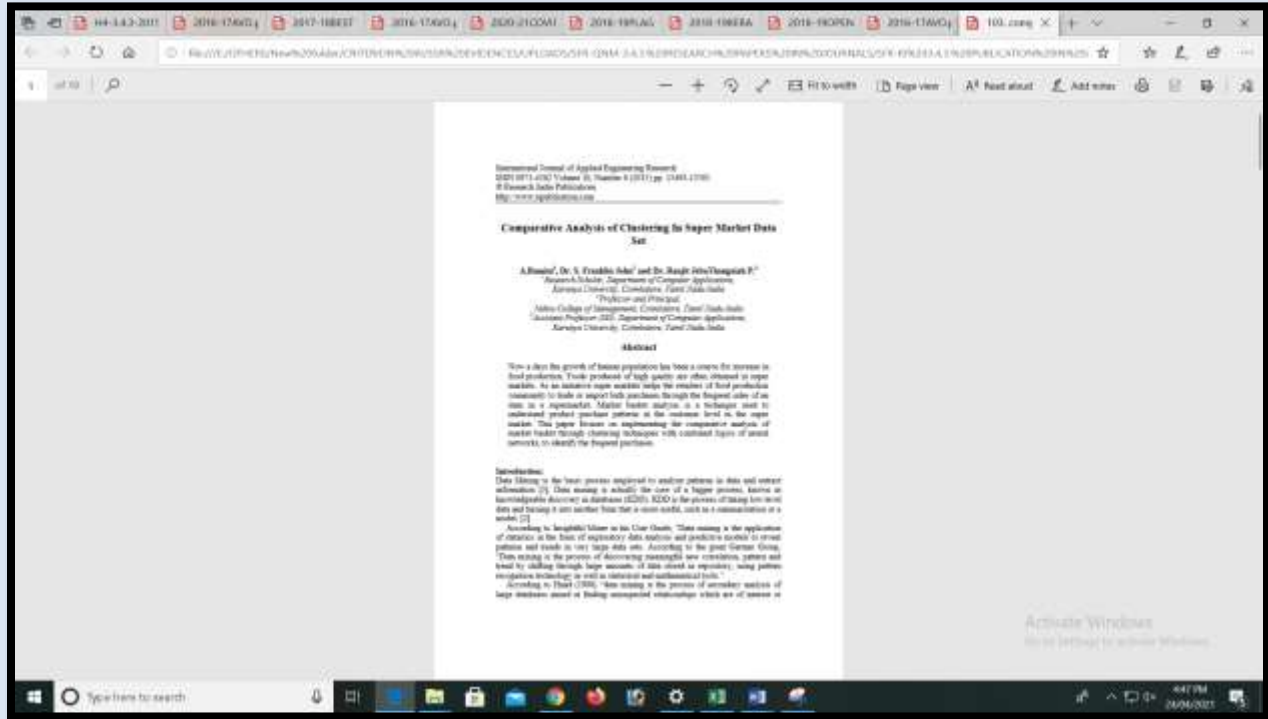
13:20
15-03-2021



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)


Name of the Author : Dr.A.Bamini
Title of the Paper : Comparative Analysis of Clustering in Super Market Dataset



International Journal of Applied Engineering Research (IJAER)

Print ISSN 0973-4562
Online ISSN 0973-8769

Editor in Chief:
Prof. Dr. Eng. AB MEBDJR
Faculty of Science and Technology,
Route de Mamounia,
University of Mascara,
B.P. 505, Mascara (29000),
Algeria.



Aims and Scope: The *International Journal of Applied Engineering Research (IJAER)* is an international research journal, which publishes top-level work from all areas of Engineering Research and their application including Mechanical, Civil, Electrical, Computer Science and IT, Chemical, Electronics, Mathematics, Environmental, Education Geological etc. Researchers in all technology and engineering fields are encouraged to contribute articles based on recent research. Journal publishes research articles and reviews within the whole field of Engineering Research, and it will continue to provide information on the latest trends and developments in this ever-expanding subject.

Audience: Mechanical, computer, aeronautical, chemical, civil, electronics, mathematic, geology, electrical.

Submission: Authors are requested to submit their papers electronically to IJAEReditor@gmail.com

INDEXING: SCOPUS(2001-2015), EBSCOhost, GOOGLE Scholar, JournalSeek, J-Gate, ICL, Index Copernicus IC Value 8287 and UGC Approved Journal - 2017 (Journal No. - 64579)

Publication Date and Frequency: Twelve issues per year.

DOI No, DOI:10.3762/1000010

- [Publication Ethics and Publication Malpractice Statement](#)
- [Editorial Board Members](#)
- [Vol. 1 No.1 No.2 No.3 cover](#)
- [Vol. 2 No.1 No.2 No.3 No.4 cover](#)

Activate Windows
Go to Settings to activate Windows.

4:11 PM
10/10/2017

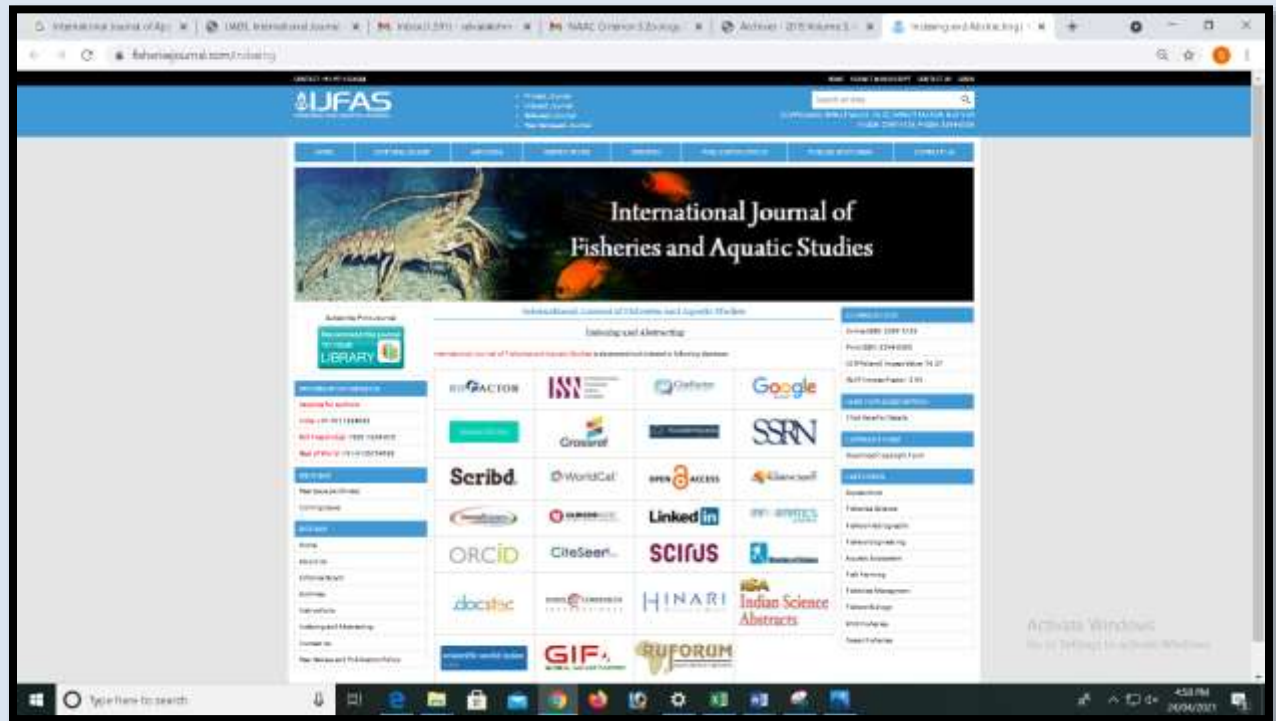


**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.S.Subha Ranjani
**Title of the Paper : Potential influence of probiotic bacteria on the growth
gut microflora of Carassius auratus**







**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author : Dr.S.Subha Ranjani
Title of the Paper : Supplementation of *B. cereus* as probiotic in fish feed on *T. trichopterus* (Blue Gourami) and calculating its growth and survival

Int.J.Curr.Microbiol.App.Sci (2015) 4(12): 744-751

International Journal of Current Microbiology and Applied Sciences
ISSN: 2319-7706 Volume 4 Number 12 (2015) pp. 744-751
<http://www.ijcmass.com>



Original Research Article

Supplementation of *B. cereus* as Probiotic in Fish Feed of *Trichogaster Trichopterus* (Blue Gourami) and Calculating its Growth and Survival

S. Subharanjani^{1*}, P. Prema² and G. Immanuel³

¹Department of Microbiology and Biotechnology, The Standard Fireworks Rajaratnam College, Sivakasi, Tamilnadu, India

²Department of Zoology, VHNSN College, Virudhunagar, Tamilnadu, India

³Centre for Marine Science and Technology, M.S. University, Rajakkamangalam, Tamilnadu, India

*Corresponding author

ABSTRACT

Keywords

Gourami,
Bacteriocin,
16s rRNA,
Growth rate

The study investigated the effect of *B. cereus* probiotic on the growth performance in *T. Trichopterus*. *B. cereus* strain isolated from raw milk was characterized by means of standard biochemical and 16S rRNA gene sequencing studies. Fish feed with and without bacteriocin was prepared and it was fed to the juvenile fishes. After 60 days trial, specific growth rate was increased with the addition of Bacteriocin in fish diets. Likewise the survival rate of juvenile *T. trichopterus* was 50% for control and 94% the fish diet supplemented with the bacteriocin produced by *B. cereus*. Thus it was found that in addition of being effective bacteriocin producing *B. cereus* could also promote the growth of the fish effectively and thus it play an important role in aquaculture nutrition.

Introduction

Farming of aquatic organisms like crustaceans, fish, molluscs and aquatic plants are termed as Aquaculture and it is also identified as aqua farming. Aquaculture is diverged from commercial fishing because the cultivation of fresh water and salt water populations under controlled conditions is former and harvesting of wild fish is later. (ASAP 2009). Ornamental fish are those small sized, live and colourful fish kept in home or public aquaria or in garden pools for recreation. Freshwater ornamental fish contribute 85% of the total global ornamental fish trade (Mohanta2011).

Trichogaster trichopterus (Pallas 1770; Rajesh et al. 2011) commonly called Blue gourami fish, is a common and popular fresh water aquarium fish belonging to the family Belontiidae. An ideal ornamental species should possess attributes like captive survival (including acceptance of artificial diet), attractive colouration pattern, exotically patterned (endemicity), hardiness, peaceful nature, compatible with other species and above all tiny size, so that they can be reared in aquarium throughout their life span. One of the major problems for the growth of ornamental fish farming is the non-



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author

: Mrs.P.Rajeswari

Title of the Paper

**: Isolation, Identification and screening of
cholesterol degrading probiotics**

Available online at www.ijpab.com

DOI: <http://dx.doi.org/10.18782/2320-7051.2172>

ISSN: 2320 – 7051

Int. J. Pure App. Biosci. 3 (6): 179-182 (2015)



Research Article

OPEN ACCESS

Isolation, Identification and Screening of Cholesterol Degrading Probiotics

K. Vaishnavi, M. Krishna and P. Rajeswari*

The Standard Fireworks Rajaratnam College for Women, Sivakasi, Tamilnadu

*Corresponding Author E-mail: sholarrpl@gmail.com

ABSTRACT

In this study, Cholesterol degrading Lactobacillus was isolated from butter milk sample. The growth performance of Lactobacillus on MRS agar was identified by the colonies were formed due to the utilization of Lactose and by various biochemical tests. Lactobacilli are resistant to various antibiotics and bile salt. Growth performance of selected probiotic in various pH (such as 4, 7 & 9), Temperature (such as 4°C, 37°C, 50°C), and various concentration of Bile salt (such as 0.1g, 0.2g, 0.3g, 0.4g and 0.5g) was detected. In vitro study of cholesterol degradation by probiotic was carried out and it was based on the growth performance and percentage of cholesterol removed from liquid cholesterol. The result of in vitro study reveals Lactobacillus showed the better degradation (21.5%) of cholesterol degraded in liquid cholesterol (at 600 µg/ml).

Key words: Cholesterol, Lactobacillus, Probiotics, Bile salt and MRS medium.

INTRODUCTION

Cholesterol is an important basic block for body tissue; elevated blood cholesterol is well-known major risk factor for coronary heart disease¹. Bile a water-soluble end product of cholesterol in liver is stored and concentrated in the gallbladder and released into the duodenum upon the ingestion of food². Cholesterol being a precursor of bile acid converts its molecule to bile acids replaces those lost^{3,4}. Cholesterol is used to synthesis new bile acid in a homeostatic response, resulting in lowering of cholesterol⁵. Many attempts have been made to elucidate the mechanism; one proposed mechanism is the assimilation of the cholesterol by cell wall during growth⁶. Another mechanism is deconjugation of bile salt by bacteria producing bile salt hydrolase.

Lactic acid bacteria capable of lowering blood cholesterol by sticking in the intestinal wall then multiply and producing the enzyme bile salt hydrolase (BSH), which resulted in increased acid conjugated bile that is not easily absorbed from the small intestine compared with bile acid conjugation. Conjugated bile acids by high hence decreasing intestinal absorption of fat and fatty deposits to be reduced⁷.

MATERIALS AND METHODS

I. Sample Collection:

Butter milk was collected from the hostel in the Standard Fireworks Rajaratnam College for Women at Sivakasi to isolate the bacterium *Lactobacillus*.

Cite this article: Vaishnavi, K., Krishna, M. and Rajeswari, P., Isolation, Identification and Screening of Cholesterol Degrading Probiotics, *Int. J. Pure App. Biosci.* 3(6): 179-182 (2015). doi: <http://dx.doi.org/10.18782/2320-7051.2172>

INDIAN JOURNAL OF PURE & APPLIED BIOSCIENCES

ISSN (E) : 2582 – 2845



No. 772, Basant Vihar, Kota
Rajasthan-324009 India



Call Us On
+91 9784677044



Mail Us @
editor@ijpab.com

MANUSCRIPT SUBMISSION

(ONLINEMANUSCRIPT.PHP)

ABOUT

ABOUT / ABSTRACTING AND INDEXING DATABASES

Abstracting and Indexing
Databases

Our smart approach

- ✓ National Academy of Agricultural Sciences; NAAS score
4.74 (2020) (<http://naasindia.org/documents/journals2020.pdf>)
- ✓ Scientific Indexing Services
(<http://www.sindexs.org/JournalList.aspx?ID=2484>)
- ✓ Citefactor
(<http://www.citefactor.org/journal/index/13941/international-journal-of-pure-applied-bioscience-ijpab#.Vf-JSeYg5OY>)



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author

: Mrs.P.Rajeswari

Title of the Paper

**: A study on cholesterol degradation by
Lactobacillus**

RESEARCH PAPER	Microbiology	Volume : 6 Issue : 1 JANUARY 2016 ISSN - 2249-555X
	A Study on Cholesterol Degradation by Lactobacillus	
KEYWORDS		Cholesterol, Lactobacillus and MRS medium.
K. VAISHNAVI	M.KRISHMA	P.RAJESWARI
Department of Microbiology, The Standard Fireworks Rajaratnam College for Women, Sivakasi, Virudhunagar (Dst),Tamil Nadu, India.	Department of Microbiology, The Standard Fireworks Rajaratnam College for Women, Sivakasi, Virudhunagar (Dst),Tamil Nadu, India.	Department of Microbiology, The Standard Fireworks Rajaratnam College for Women, Sivakasi, Virudhunagar (Dst),Tamil Nadu, India.
ABSTRACT The aim of this work was made to isolate, screen and characterize probiotic organisms for Cholesterol degradation. Cholesterol degrading probiotic Lactobacillus was isolated from butter milk sample using MRS medium and identified based on the morphological and biochemical characteristics. Then the strain was further subjected for cholesterol degradation. Lactobacillus isolate showed better results (27.8% of degradation) seen in 3days.		
Introduction Cholesterol is a compound belonging to steroid family of molecules (Steinberg, D .2006). Cholesterol plays major role in human health. Normally, it is used in the body to insulate nerves makes cell membranes and produce some hormones, vitamin D and substance aid for digestion and also need to build healthy cells (HongbaoMa.2004). Excess cholesterol in the blood stream can form plaque in arterial wall (Steinberg, D and Witzum JL. 2002). The cholesterol and plaque build-up causes the arteries to become thicker, harder and sometime blocking the blood flow to the heart and other vital organs. When too much low-density lipoprotein (LDL) deposits inside the arterial walls where if it is oxidized, it can build-up as hard deposits and cause atherosclerosis, the disease process that under lies heart attack. Thus the synthesis and utilization of cholesterol must be tightly regulated in order to prevent over accumulation and abnormal deposition with in the body (Fernandez de las Heras, L. 2011). Probiotics strains especially lactic acid bacteria have major role to play in the cholesterol level reducing mechanism (Fuller.R. 1989). Lactobacillus bacteria and Bifidobacteria in the host decreased blood cholesterol levels by either decreased total intestinal absorption or removal through solid excretion or by interrupting the entero hepatic cycle of bile acids. Lactobacillus bacteria suppressed the re-adsorption of bile acids carrying cholesterol and enhance the removal of cholesterol from blood through faeces (Hosono, A, 2000). These beneficial organisms are able to deconjugate with bile acids such as taurocholic or glycocholic acid. Deconjugation of bile acid may helps to decrease the serum cholesterol in humans, the synthesis of bile acids from cholesterol concentration can reduce the total cholesterol in the body (Buck. M and S.E Gilliland.1994).	Isolation of Lactobacillus: (Raghavan et al., 2011) Selective medium was used for the isolation of Lactobacillus was MRS medium with the following composition: Peptone from casein- 10gm, Yeast extract- 8 gm, D (-) glucose- 20gm, Di-potassium hydrogen phosphate- 2 gm, Tween 80- 1 ml, Di -ammonium hydrogen citrate- 2gm, Sodium acetate- 5 gm, Magnesium sulphate- 0.2 gm, Manganese sulphate- 0.04 gm, Distilled water- 1000 ml, pH- 5.7±0.2.	Identification of Lactobacillus Microscopic observations of the bacterial isolates were studied using Gram Staining and motility tests (Hanging drop Technique). Various biochemical tests such as Indole test, Methyl red, Voges Proskauer, Citrate utilization test, Urease test, Oxidase test, Catalase activity and carbohydrate fermentation were carried out for the identification of Lactobacillus.
Materials and Methods: Sample Collection: 1. Butter milk was collected from the hostel in the Standard Fireworks Rajaratnam College for Women, Sivakasi to isolate the bacterium Lactobacillus. 2. Serum sample of hypercholesterolemia and hypocholesterolemia patients were collected from Clinical Laboratory, Sivakasi.	Cholesterol removal method: (Raghavan et al., 2011) Cholesterol assimilation by using Blood serum cholesterol: Day - 1 For cholesterol assimilation by Probiotics, 1% of Lactobacillus culture was inoculated into freshly prepared MRS broth, supplemented with bile salt and hyper and hypocholesterolemic patient's serum having cholesterol at various concentrations such as 180µg/ml, 200µg/ml, 220µg/ml and 240µg/ml respectively. Then the glass vials were inoculated with Lactobacillus culture and anaerobically incubated at 37°C for 24 hours. Day - 2 The cells were harvested after the incubation period by centrifugation at 10,000 rpm at 4°C for 10 minutes. The cell pellet was washed twice with sterilized distilled water. The cell pellet was suspended in MRS broth containing 0.1 gm of bile salt and patient's serum having cholesterol at various concentrations (180µg/ml, 200µg/ml, 220µg/ml and 240µg/ml) in four vials. This setup was anaerobically incubated at 37°C for 24 hours. Day - 3 After the incubation period, cholesterol assimilation ability of Lactobacillus to remove the cholesterol; from the media was calculated as percentage from the following equations.	



Journal Of Medical Science

IJAR

INDIAN JOURNAL OF APPLIED RESEARCH

PRINT ISSN NO 2249 - 555X
IF OF IJAR: 6.03 (SJIF)
PEER REVIEW, INTERNATIONAL JOURNAL
JOURNAL DOI : 10.36106/IJAR

Tuesday, M

6:47:26 PM

editor@ijr

+91 88 66 1

+91 88 66

HOME ABOUT US EDITORIAL BOARD AUTHOR GUIDELINES **INDEXING & ABSTRACTING** PAST ISSUES PUBLICATION ETHICS CONTACT

UPDATES

MEDICAL COUNCIL OF INDIA (MCI) VALID PUBLICATION AS PER FEBRUARY 2020 GAZETTE

[CLICK HERE](#)



**I - Indian
J - Journal of
A - Applied
R - Research**

[Upload your Article](#)

[Author Guidelines](#)

[Download](#)

UPDATES



36572

Manuscript
submission



9855

Publish Research
Papers



26.94

Acceptance
Ratio



100

Articles from
100 Countries

[BOOK PUBLICATION](#)

[SPECIAL ISSUES](#)

[CURRENT ISSUE](#)

[FAQS](#)

[SEARCH](#)

[SUBSCRIPTION FORM](#)

[PEER REVIEW PROCESS](#)

[SISTER JOURNALS](#)

Indexing & Abstracting - IJAR

UGC CARE JOURNAL AP
STATUS

**IJAR is a Peer-R
Journal and valid as
UGC Gazette regula
minimum qualifications
appointment of teachers
academic staff in univer
colleges (Date:18/07/201
More Detail**

QUALIS APPROVED J
BRAZIL [Click Here](#)



[Journal Template](#)



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)

Name of the Author

: Mrs.P.Rajeswari

Title of the Paper

**: Invitro study on Hypocholesterolemic effect of
spirulina**

RESEARCH PAPER		Microbiology	Volume : 6 Issue : 2 FEBRUARY 2016 ISSN - 2249-555X
		In Vitro Study on Hypocholesterolemic Effect of Spirulina	
KEYWORDS		Spirulina, Cholesterol, Zarrouk medium, Enzymatic colorimetric method.	
P.Selvi	M.Bharathi	P.Rajeswari	
Department of Microbiology, The Standard Fireworks Rajaratnam College for Women, Sivakasi Virudhunagar (Dst), Tamil Nadu, India.	Department of Microbiology, The Standard Fireworks Rajaratnam College for Women, Sivakasi Virudhunagar (Dst), Tamil Nadu, India.	Assistant Professor The Standard Fireworks Rajaratnam College for Women, Sivakasi Virudhunagar (Dst), Tamil Nadu, India.	
ABSTRACT The aim of this work was made to screen the Cyanobacterium Spirulina for cholesterol degradation. The Spirulina culture were collected and identified based on morphological appearance. Then the culture was subjected for cholesterol degradation by using the standard water-soluble cholesterol (200mg/dl) at various concentrations such as 200µl, 400µl, 600µl. The cholesterol degrading effect of Spirulina was frequently increased by increasing the time and the concentration of water-soluble cholesterol.			
1. Introduction Coronary Heart Disease (CHD) is currently a leading cause of death worldwide, this disease is still increasing and has become a true pandemic that respects no borders [18]. Elevated blood cholesterol (hypercholesterolemia) is an important risk factor associated with atherosclerosis and coronary heart diseases [6]. Cholesterol is a lipid, produced by the liver that is required for various functions, found in some foods. Cholesterol is parent compound of hormone, bile acid and vitamin D [9]. A normal or desirable cholesterol level is defined as less than 200 mg of cholesterol per deciliter of blood (mg/dL). Blood cholesterol is considered to be border line when it is in the range of 200 to 239 mg/dL. Elevated cholesterol level is 240 mg/dL or above is considered to be hypercholesterolemia. Hypercholesterolemia indicates that, HDL is decreased and LDL is increased [13]. Excess of cholesterol is risk factor, cause of death worldwide, each year more than 17 million people or 30% of all death worldwide and 25 million death are expected in 2020 [17]. Recent modalities for lowering blood cholesterol levels involve dietary management, behavior modification, regular exercise and drug therapy [10]. Pharmacological agents that effectively reduce cholesterol levels are available. But they are expensive and known to have severe side effects [5]. Spirulina is blue-green microalgae, which contain high-anti-oxidant components, abundant amino acids, high-quality proteins, Fe and Ca, unsaturated fatty acids and many types of vitamins, including A, B2, B6, B8, B12, E and K. Spirulina have anti-viral, anti-inflammatory and anti-tumor effects and reduce blood lipid profile, blood sugar, body weight and wound healing time. Therefore, they are known as therapeutic and functional food [8]. Spirulina plays an important role in metabolic diseases like diabetes, hypertension, anemia and others [1]. A blue protein called phycocyanin, belonging to the photosynthetic apparatus of Spirulina platensis has antioxidant and radical scavenging properties both in vitro and in vivo models [4]. Recently more attention has been given to study its		therapeutic effects, which include reduction of cholesterol and nephrotoxicity by heavy metals, anticancer properties, protection against radiation, and enhancement of the immune system [3]. Spirulina have also exhibited metabolic (hypoglycemic), cholesterol regulatory properties, anti-viral, liver-protecting and blood-vessel relaxing effects, anti-cancer, anti-inflammatory and anti-oxidant properties [11, 12,16]. Spirulina has the beneficial effects on blood pressure through its full content in anti-oxidant combined with vitamin A, B12, E, proteins and mineral salt and also in building immunity of patients with HIV infection and multiple cardiovascular risk factors [2,7,14,15].	
		2. Materials and Methods 2.1 Collection of the Culture: Algal culture of Cyanobacterium Spirulina was collected from the Department of Microbiology, Ayya Nadar Jankiammal College, Sivakasi.	
		2.2 Maintenance of the Culture The Cyanobacterium Spirulina, was cultivated in Zarrouk medium at 25±2°C, pH 10 under photoautotrophic condition by continuous illumination using white fluorescent tubes and thrice daily shaking by hand for 15 days. The pH of the medium was maintained by using NaOH solution.	
		Composition of the Zarrouk medium One liter of Zarrouk's medium consists of (part A) NaHCO ₃ 16.80 g and K ₂ HPO ₄ 0.50 g; (part B) NaNO ₃ 2.50 g, K ₂ SO ₄ 1.00 g, NaCl 1.00 g, MgSO ₄ ·7H ₂ O 0.20g, EDTA·Na ₂ ·2H ₂ O 0.08 g, CaCl ₂ ·2H ₂ O 0.04g, and FeSO ₄ ·2H ₂ O 0.01 g; trace elements mixture A (part C 10 mL/l): 1.00 mL, trace elements mixture B (part D 1.0 mL/l): 1.00 mL; part C mg/l: H ₃ BO ₃ 2.86, MnCl ₂ ·4H ₂ O 1.810 g, ZnSO ₄ ·7H ₂ O 0.222 MoO ₃ 0.015, and CuSO ₄ ·5H ₂ O 0.074 (the used amount is 10 mL/l); part D mg/l: NH ₄ VO ₃ 22.9, NiSO ₄ ·7H ₂ O 47.8, NaWO ₃ 17.9, Ti ₂ (SO ₄) ₃ ·6H ₂ O, and Co(NO ₃) ₂ ·6H ₂ O 4.4 (the amount used was 1.0 mL/l) [19].	
		2.3 Morphological Identification Morphology of the Spirulina was observed under mi-	



Journal Of Medical Science

IJAR

INDIAN JOURNAL OF APPLIED RESEARCH

PRINT ISSN NO 2249 - 555X
IF OF IJAR: 6.03 (SJIF)
PEER REVIEW, INTERNATIONAL JOURNAL
JOURNAL DOI : 10.36106/IJAR

Tuesday, M
6:47:26 PM
editor@ijc
+91 88 66 1
+91 88 66

HOME ABOUT US EDITORIAL BOARD AUTHOR GUIDELINES INDEXING & ABSTRACTING PAST ISSUES PUBLICATION ETHICS CONTACT

UPDATES

MEDICAL COUNCIL OF INDIA (MCI) VALID PUBLICATION AS PER FEBRUARY 2020 GAZETTE.

[CLICK HERE](#)



**I - Indian
J - Journal of
A - Applied
R - Research**

[Upload your Article](#)

[Author Guidelines](#)

[Download](#)

UPDATES

 **36572**
Manuscript
submission

 **9855**
Publish Research
Papers

 **26.94**
Acceptance
Ratio

 **100**
Articles from
100 Countries

BOOK PUBLICATION SPECIAL ISSUES CURRENT ISSUE FAQs SEARCH SUBSCRIPTION FORM PEER REVIEW PROCESS SISTER JOURNALS

Indexing & Abstracting - IJAR

UGC CARE JOURNAL AP
STATUS

**IJAR is a Peer-R
Journal and valid a
UGC Gazette regula
minimum qualifications
appointment of teachers
academic staff in univ
colleges (Date:18/07/201
More Detail**

QUALIS APPROVED J
BRAZIL [Click Here](#)



Journal Template



**THE STANDARD FIREWORKS RAJARATNAM COLLEGE FOR WOMEN (AUTONOMOUS),
SIVAKASI – 626 123.**

(Affiliated to Madurai Kamaraj University, Re-accredited with A Grade by NAAC,
College with Potential for Excellence by UGC and Mentor Institution under UGC PARAMARSH)


Name of the Author

: Dr.S.Radha

Title of the Paper

**: Evaluation of probiotic potential of novel
candidate *Enterobacter avium* strain from chick
faecal borne *Alcaligenes faecalis***

Volume-5, Issue-1, January-2016 • ISSN No 2277 - 8160



Research Paper

Microbiology

**Evaluation of Probiotic potential of Novel candidate
Enterobacter avium strain against Chick faecal borne
Alcaligenes faecalis"**

Vinothini V. M.	Post Graduate Department of Microbiology, Standard Fireworks Rajaratnam College
Radhathirum alai- arasu, S.	Assistant Professor Department of Microbiology, Standard Fireworks Rajaratnam College

ABSTRACT Consumers and regulatory agencies have reduced or even eliminated the use of antibiotics in food producing animals. This created a need to find alternatives to maintain healthy and productive animals. Probiotics were employed as a good alternative treatment strategy through anal bacteriotherapy for curing many diseases of human and animals. The present work was performed to isolate and characterized properties of probiotic *Enterococci*. For this purpose the antagonistic activity of *E. avium* probiotic was evaluated which possess the ability to suppress growth of opportunistic pathogen *A. faecalis* associated with bacteremia and respiratory infections in chick. As the *E. avium* fed chick recovered and showed improved growth and body weight they offers a potential novel candidate for controlling infection in chick.

KEYWORDS : probiotics, *Enterococci*, antagonistic properties, *A. faecalis*

INTRODUCTION
The *Alcaligenes faecalis*, an opportunistic pathogen that potentiates viral and other bacterial infection to cause meningitis in new born, bacteremia in cancer patients and associated with pancreatic abscess and corneal ulcer. Some poult infected with, *A. faecalis* developed mild diarrhoea, had urate deposits around the cloaca, were cool to the touch and huddled, and had an odour of the droppings which was characteristic of increased corticosteroid activity. Reports have indicated that *Alcaligenes* species have also been associated with respiratory infections in the chicks as usually severe and often lethal, and optimal antibiotic therapy is not well established (Omaregie and Osagie, 2012; Mordi et al., 2013).

There is a growing demand for probiotic functional food and has been used in livestock for decades to decrease the risk of infectious diseases and promote growth performance. Lactic acid bacteria, especially *Lactobacillus* and *Enterococci* are the most commonly used microorganisms as probiotics have "Generally Recognized As Safe" (GRAS) status (Amrati et al., 2014; Menconi et al., 2014). Several strategies have been anticipated to identify novel probiotic strains. The properties of probiotic are strain-specific; the selection of strain directly depends on the type of pathogenic infection (Sheela et al., 2010; Gomes et al., 2010). Hence this study intended isolates the strain with high probiotic potentiality which may exist in traditional dairies. The criteria used for *in vitro* selection of probiotic bacteria, in food preparations, which allow them to be established in the intestinal tract, include bile tolerance and gastric juice resistance, which enable them to survive and grow to do their impressive action in the gastrointestinal tract (GIT).

MATERIALS AND METHODS
Isolation and identification of Probiotic and Pathogenic strains: The pathogenic strain was isolated from diseased chick fecal waste on MacConkey agar (HI media, Mumbai, India) incubated aerobically at 37°C for 18 to 24 h. The curd samples were collected from college canteen, SFRC, Sivakasi was used for isolation of LAB with MRS medium (HI media, Mumbai, India). Species identification was done by using 16S rDNA sequencing and BLAST analysis. **Inhibition assays:** For detection of antimicrobial activity, an agar spot test was used (Burkholder and Bhunia, 2009). Test cultures for lactobacilli were spotted (2-3 µl) on the surface of MRS agar and incubated for 24 h at 37°C to develop the spots. The agar plates were then overlaid with SS soft agar (0.75% (w/v) with pathogens). The plates were incubated at 37°C for 24 h. Zones of inhibition around the central spots were measured.

Bile salts stress resistance: The cultures of appropriate dilution were spread plated on to MRS agar and bile salt agar enriched with 1% (wt/vol) of bile salt. The plates were incubated 37°C for 24h. After incubation, the viable bacterial count was determined by comparing the colonies grown on MRS agar with that of on MRS agar with bile salt 1% (wt/vol) and surviving percentage was calculated (Ho et al., 2011).

Assessment of Acid tolerance: From the culture of each strain grown overnight cells were centrifuged at 5000g for 10 min at 4°C. The pellets washed in sterile phosphate buffered saline (PBS) pH 7, and resuspended in PBS were further diluted 1/100 in PBS. Culture suspension (1 ml) containing approximately 10⁸ cfu/ml LAB was transferred into 9 ml phosphate-buffered saline (PBS). The pH was adjusted to 1.0, 2.0 and 3.0 using 0.1 N HCl and was incubated at 37°C for 2 and 4h. After different time intervals the acid pH treated samples were inoculated into MRS broth, incubated for 18 h and bacterial growth was determined by measuring the optical density at 600 nm (OD₆₀₀). The values were compared with the control (pH 7) and represented as relative survival percentage.

Auto- and co aggregation assay: The ability of bacteria to auto aggregate and co aggregate was assessed according to the method described by Tareh et al. 2013. The OD600 of the bacterial suspensions was monitored at 3, 20 and 24 h. The OD600 in control tubes containing only the pathogen or the lactic acid bacterial strain respectively and of the mixed culture after different periods of incubation were expressed as a percentage of the total number of bacteria present.

Experiment with chick: The chicks (females, 45 days of age) were used in the present study between February and March, 2015. Two set of domestic chicks were selected for the *in vivo* experiment were obtained from a local hatchery, housed and cared for experiments 1 and 2. In experiment 1 poult were randomly challenged with oral gavage with approximately 10⁸ cfu/poult of pathogenic strain VAF2 and placed in pen. In experiment 2 the poult were given orally only with ~10⁸ cfu/ chick of *E. avium* VEA4 orally. The untreated chick reared for experiment 3 was taken as control. Feeds were given to the poult like rice, grains, etc. in 10 g in each per day. In all experiments chicks were cared and reared for the period of 40 d. From the days 10 of post infection, the faecal samples were analyzed for LAB and pathogenic strain using MRS and Macconkey selective plating (Khatmi Torshizi et al., 2008).

RESULTS AND DISCUSSION
Despite of the advances in applied science, poultry diseases continue to cause a considerable economic burden; fortunately, some probiotic strains have been considered for their positive effects on certain infectious diseases and recently their use to prevent and treat has significantly augmented. Thus there is a clear interest in the identification and characterization of new candidate strains with

GJRA - GLOBAL JOURNAL FOR RESEARCH ANALYSIS • 19



International Journal

GJRA

GLOBAL JOURNAL FOR RESEARCH ANALYSIS

PRINT ISSN NO 2277 - 8160
IF OF GJRA: 5.956 (SJIF)
PEER REVIEW, INTERNATIONAL JOURNAL
JOURNAL DOI : 10.36106/GJRA

Monday, Mar, 15th, 2021

9:23:53 PM

gjra@worldwidejou

+91 88 66 00 3636

+91 88 66 11 3636

[HOME](#) [ABOUT US](#) [EDITORIAL BOARD](#) [AUTHOR GUIDELINES](#) **[INDEXING & ABSTRACTING](#)** [PAST ISSUES](#) [PUBLICATION ETHICS](#) [CONTACT](#)

UPDATES **[MEDICAL COUNCIL OF INDIA \(MCI\) VALID PUBLICATION AS PER FEBRUARY 2020 GAZETTE](#)** [CLICK HERE](#)

**G - GLOBAL
J - JOURNAL FOR
R - RESEARCH
A - ANALYSIS**

[Upload your Article](#)

[Author Guidelines](#)

[Download](#)

UPDATES > [MONTHLY PRINT JOURNAL](#) [DOUBLE REVIEWED](#) [REFEREED & REFERRED INTERNATIONAL JOURNAL](#)



36572
Manuscript
submission



9855
Publish Research
Papers



26.94
Acceptance
Ratio



100
Articles from
100 Countries

[BOOK PUBLICATION](#) [SPECIAL ISSUES](#) [CURRENT ISSUE](#) [FAQS](#) [SEARCH](#) [SUBSCRIPTION FORM](#) [PEER REVIEW PROCESS](#) [SISTER JOUR](#)

Indexing/Abstracting - GJRA

UGC CARE JOURNAL AP STATUS

GJRA is a Peer-Reviewed Journal as per New UGC Gaz regulations on minimum qualifications for appoint teachers and other acad in universities and colleg (Date:18/07/2018) [View It](#)

QUALIS APPROVED J BRAZIL [Click Here](#)

