3.3.2 Number Of Research Papers Published In The Journals Notified On UGC Website During the Year

INDEX SHEET

Sl.No	Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Indexing	Page/ Journal No
17	Redox reaction based spectrophotometric assay of some drugs in pharmaceuticals.	Roopa KP	Chemistry	International Journal of Pharmacy and Pharmaceutical Sciences	2015-Jun	0975-1491	Scopus	17
18	Spectrophotometric determination of Dobutamine Hydrochloride in pharmaceutical formulations.	Roopa KP	Chemistry	Int. J. Pharm. Sci. Rev. Res.,	2015-June	0976044X	Scopus	18
19	Spectrophotometric method for the determination of cefepime, cefazolin sodium and cefalothin sodium in pure and pharmaceutical dosage forms by using ninhydrin	Roopa KP	Chemistry	International Journal of Pharmacy and Pharmaceutical Sciences	2015-Mar	0975-1491	Scopus	19
20	Biodegradation of cypermethrin by immobilized cells of Micrococcus sp. strain CPN 1	Veena S More	BT	Braz. J. Microbiol	2015-Mar	1678-4405	WOS	20
21	Green engineered Zno nanopowders by banyan tree and E-tirucalli plant latex: auto ignited route, photoluminescent and photocatalytic properties	K. Gurushantha	Chemistry	Mater. Res. Express	2015-Mar	20531591	Scopus	21
22	Bioinspired route for the synthesis of spherical sphae Mgo:Fe3+ nanoparticle:Structural, photoluminescence and photocatalytic investigation	K. Gurushantha	Chemistry	Spectrochimica Acta Part A:Molecular and Biomolecular Spectroscopy	2015-May	1386-1425	Scopus	
23	Purification and properties of pendimethalin nitroreductase from Bacillus circulans.	Veena S More	BT	Applied Biochemistry and Microbiology	2015-May	1608-3024	Scopus	23

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INDEX SHEET

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25	Influence of europium (Eu^{3+}) ions on the optical properties of silver lead borate glasses	K. Keshavamurthy	Physics	Bulletin of Materials Science	2015-Sep	2504707	Scopus	25
26	Banyan latex: a facile fuel for the multifunctional properties of MgO nanoparticles prepared via auto ignited combustion route	K. Gurushantha	Chemistry	Mater. Res. Expres	2015-Sep	20531591	Scopus	26
27	Modelling solubility of phenolics of mango ginger extract in supercritical carbon dioxide using equation of state and empirical models	Krishna Murthy TP	BT	Journal of Food Science and Technology	2015-Sep	00221155	Scopus	27
28	Bee-inspired routing the ultimate routing process for energy efficient MANET	Dr. Sasmita Mohapatra	EC	International Journal of Applied Engineering Research	2015-Sep	9734562	UGC Earlier	28
29	Marangoni effects on forced convection of power law fluids in thin film over a unsteady horizontal stretching surface with heat source	Kiran S	Mathematics	Indian Journal of Science and Technology	2016-Aug	0974-5645	Scopus	29
30	Influence of size and location of a thin baffle on natural convection heat transfer in a vertical annular enclosure	Pushpa B V	Mathematics	Journal of Applied Fluid Mechanics	2016-Jan	17353572	Scopus	30
31	Terephthalic acid derived ligand-stabilized palladium nanocomposite catalyst for Heck coupling reaction: without surface-modified heterogeneous catalyst	Krishna BS	Chemistry	Applied organometallic chemistry	2016-Jul	1099-0739	Scopus	31

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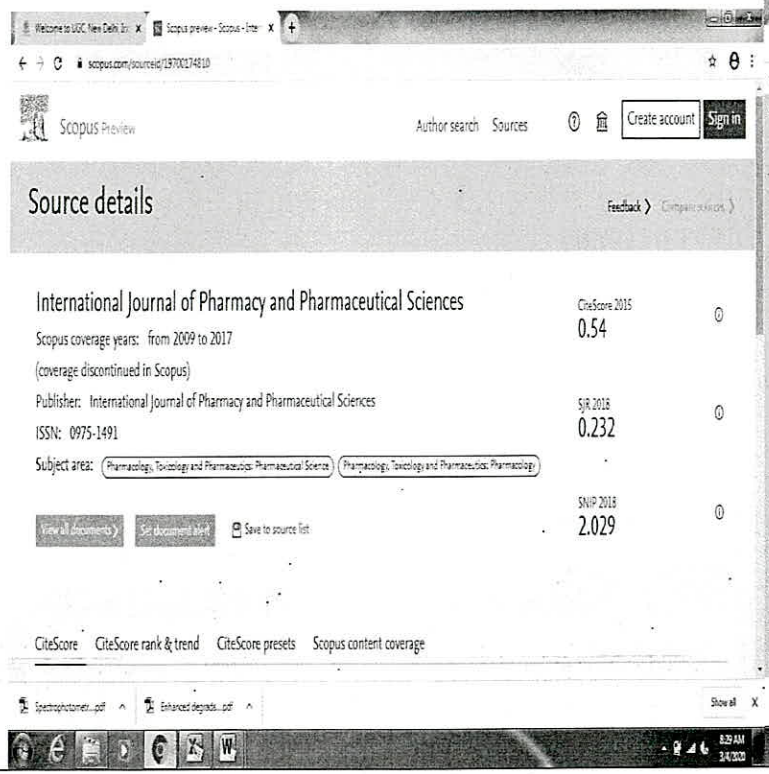
Journal Paper No -17

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Redox reaction based spectrophotometric assay of some drugs in pharmaceuticals.	Roopa KP	Chemistry	International Journal of Pharmacy and Pharmaceutical Sciences	Jun-15	0975-1491	Scopus



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Scopus coverage years: from 2009 to 2017

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Publisher: International Journal of Pharmacy and Pharmaceutical Sciences

ISSN: 0975-1491

Subject area: Pharmacology, Toxicology and Pharmaceutics: Pharmaceutical Science; Pharmacology, Toxicology and Pharmaceutics: Pharmacology

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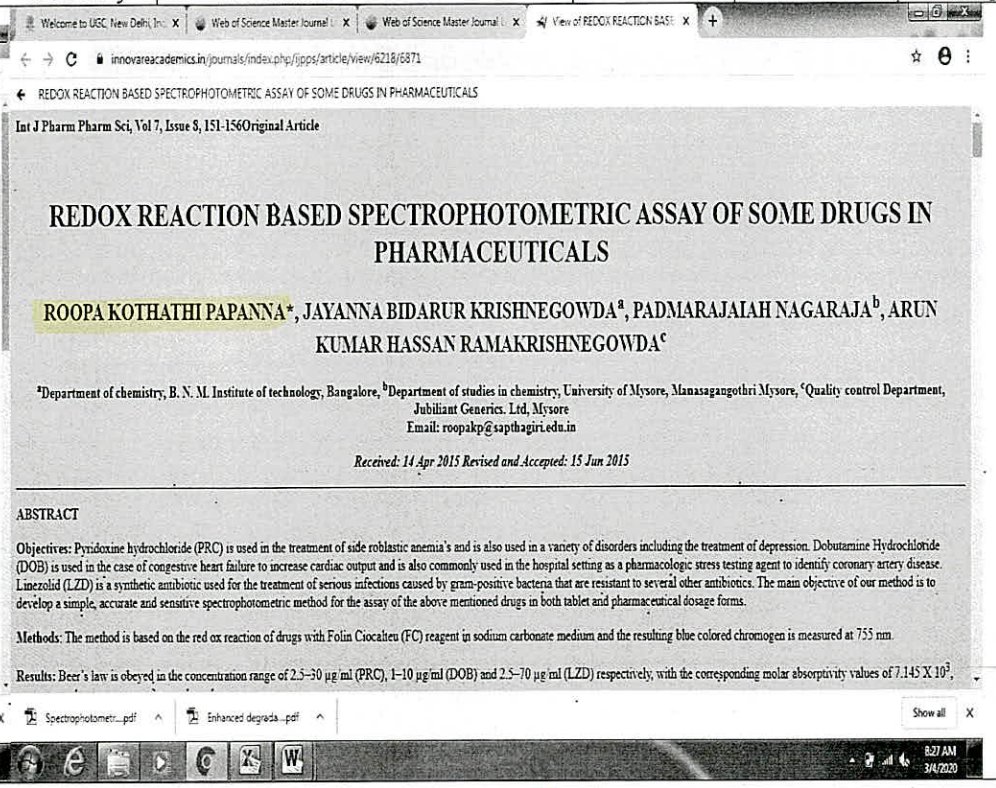

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REDOX REACTION BASED SPECTROPHOTOMETRIC ASSAY OF SOME DRUGS IN PHARMACEUTICALS

Int J Pharm Pharm Sci, Vol 7, Issue 8, 151-156Original Article

REDOX REACTION BASED SPECTROPHOTOMETRIC ASSAY OF SOME DRUGS IN PHARMACEUTICALS

ROOPA KOTHATHI PAPANNA*, JAYANNA BIDARUR KRISHNEGOWDA[a], PADMARAJAIAH NAGARAJA[b], ARUN KUMAR HASSAN RAMAKRISHNEGOWDA[c]

[a]Department of chemistry, B. N. M. Institute of technology, Bangalore, [b]Department of studies in chemistry, University of Mysore, Manasagangothri Mysore, [c]Quality control Department, Jubiliant Generics. Ltd, Mysore
Email: roopakp@sapthagiri.edu.in

Received: 14 Apr 2015 Revised and Accepted: 15 Jun 2015

ABSTRACT

Objectives: Pyridoxine hydrochloride (PRC) is used in the treatment of side roblastic anemia's and is also used in a variety of disorders including the treatment of depression. Dobutamine Hydrochloride (DOB) is used in the case of congestive heart failure to increase cardiac output and is also commonly used in the hospital setting as a pharmacologic stress testing agent to identify coronary artery disease. Linezolid (LZD) is a synthetic antibiotic used for the treatment of serious infections caused by gram-positive bacteria that are resistant to several other antibiotics. The main objective of our method is to develop a simple, accurate and sensitive spectrophotometric method for the assay of the above mentioned drugs in both tablet and pharmaceutical dosage forms.

Methods: The method is based on the red ox reaction of drugs with Folin Ciocalteu (FC) reagent in sodium carbonate medium and the resulting blue colored chromogen is measured at 755 nm.

Results: Beer's law is obeyed in the concentration range of 2.5–30 µg/ml (PRC), 1–10 µg/ml (DOB) and 2.5–70 µg/ml (LZD) respectively, with the corresponding molar absorptivity values of 7.145 X 10^3,

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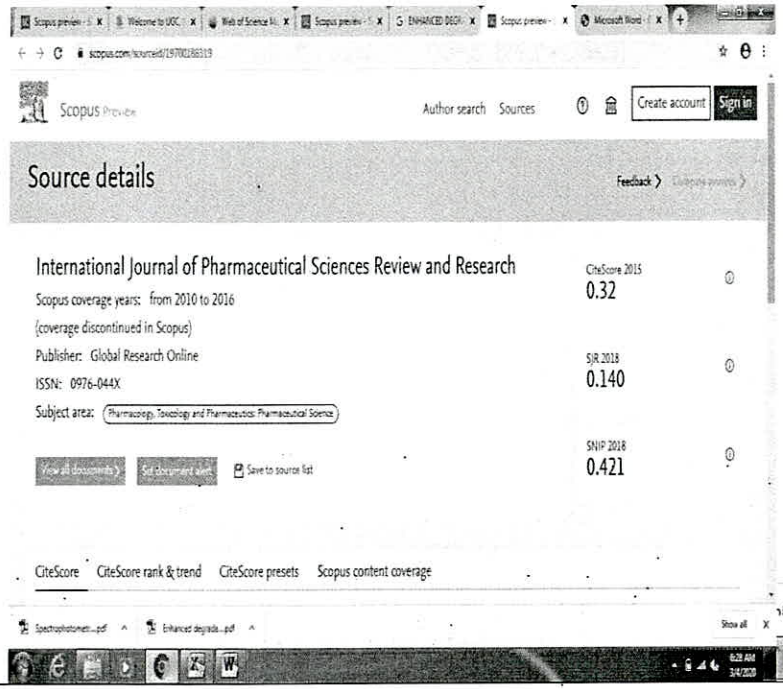
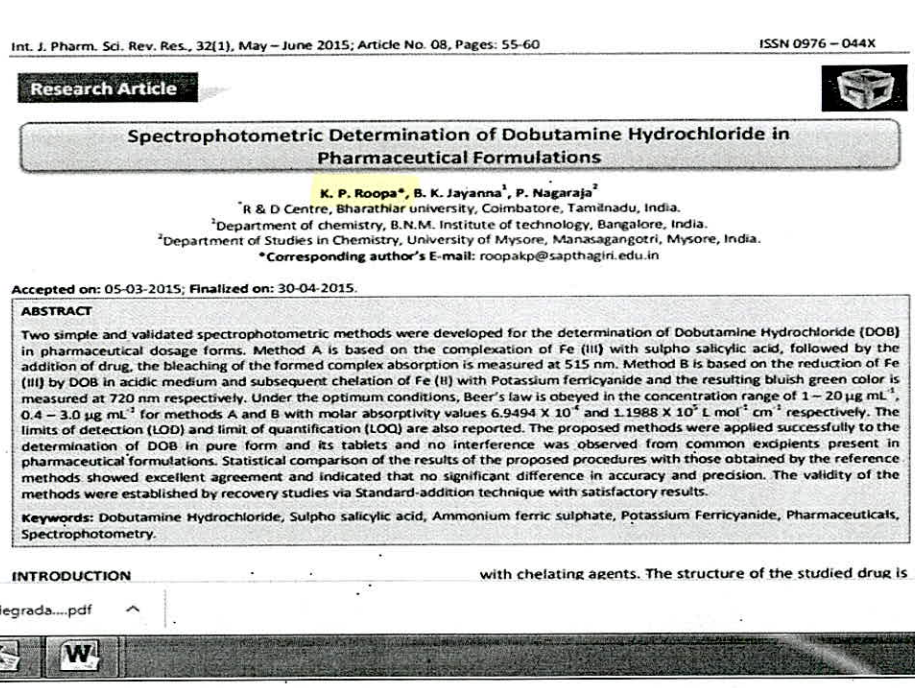
Journal Paper No -18

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Spectrophotometric determination of Dobutamine Hydrochloride in pharmaceutical formulations.	Roopa KP	Chemistry	Int. J. Pharm. Sci. Rev. Res.	Mar-15	0976044X	Scopus





Int. J. Pharm. Sci. Rev. Res., 32(1), May – June 2015; Article No. 08, Pages: 55-60 ISSN 0976 – 044X

Research Article

Spectrophotometric Determination of Dobutamine Hydrochloride in Pharmaceutical Formulations

K. P. Roopa*, B. K. Jayanna[1], P. Nagaraja[2]

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[1]Department of chemistry, B.N.M. Institute of technology, Bangalore, India.
[2]Department of Studies in Chemistry, University of Mysore, Manasagangotri, Mysore, India.
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Accepted on: 05-03-2015; **Finalized on:** 30-04-2015.

ABSTRACT

Two simple and validated spectrophotometric methods were developed for the determination of Dobutamine Hydrochloride (DOB) in pharmaceutical dosage forms. Method A is based on the complexation of Fe (III) with sulpho salicylic acid, followed by the addition of drug, the bleaching of the formed complex absorption is measured at 515 nm. Method B is based on the reduction of Fe (III) by DOB in acidic medium and subsequent chelation of Fe (II) with Potassium ferricyanide and the resulting bluish green color is measured at 720 nm respectively. Under the optimum conditions, Beer's law is obeyed in the concentration range of 1 – 20 µg mL^{-1}, 0.4 – 3.0 µg mL^{-1} for methods A and B with molar absorptivity values 6.9494 X 10^{4} and 1.1988 X 10^{5} L mol^{-1} cm^{-1} respectively. The limits of detection (LOD) and limit of quantification (LOQ) are also reported. The proposed methods were applied successfully to the determination of DOB in pure form and its tablets and no interference was observed from common excipients present in pharmaceutical formulations. Statistical comparison of the results of the proposed procedures with those obtained by the reference methods showed excellent agreement and indicated that no significant difference in accuracy and precision. The validity of the methods were established by recovery studies via Standard-addition technique with satisfactory results.

Keywords: Dobutamine Hydrochloride, Sulpho salicylic acid, Ammonium ferric sulphate, Potassium Ferricyanide, Pharmaceuticals, Spectrophotometry.

INTRODUCTION

with chelating agents. The structure of the studied drug is

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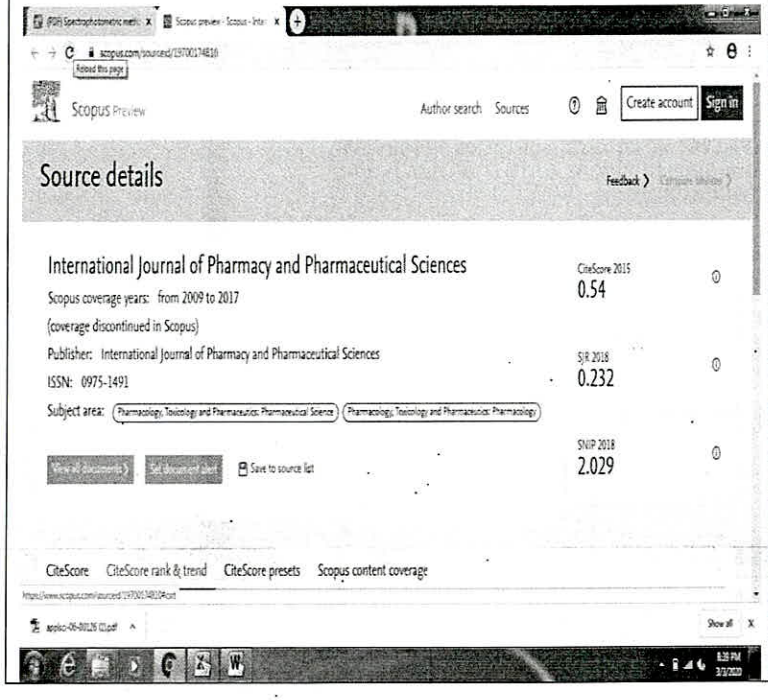
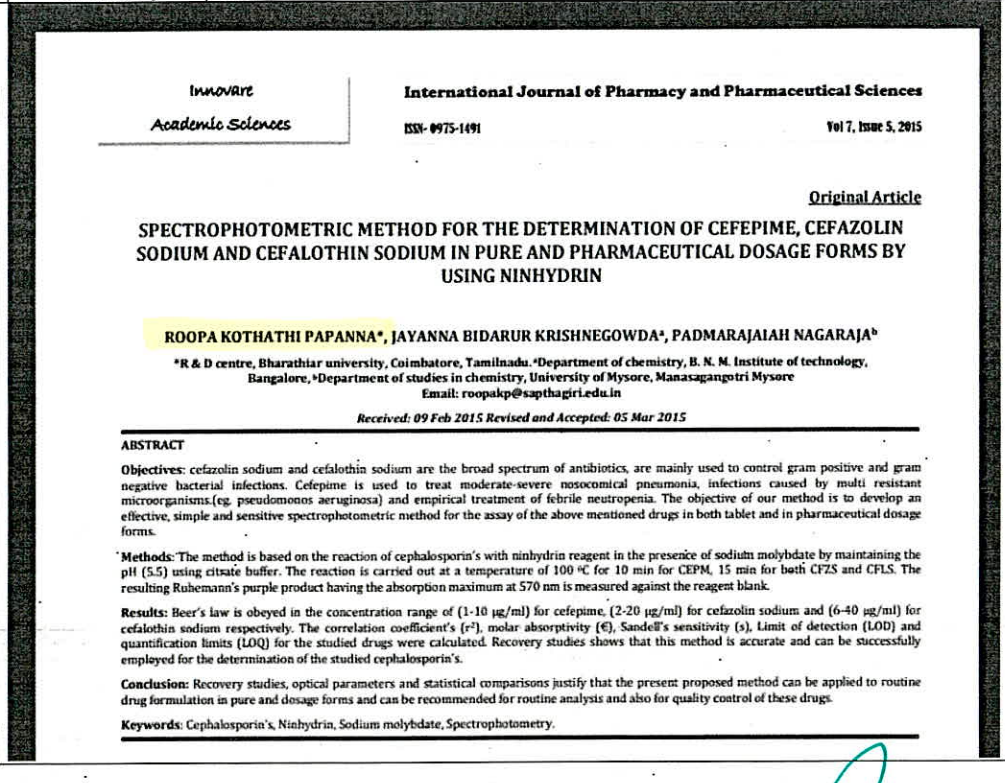
Journal Paper No -19

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Spectrophotometric method for the determination of cefepime, cefazolin sodium and cefalothin sodium in pure and pharmaceutical dosage forms by using ninhydrin	Roopa KP	Chemistry	International Journal of Pharmacy and Pharmaceutical Sciences	Jul-14	0975-1491	Scopus





Innovare Academic Sciences

International Journal of Pharmacy and Pharmaceutical Sciences

ISSN- 0975-1491 Vol 7, Issue 5, 2015

Original Article

SPECTROPHOTOMETRIC METHOD FOR THE DETERMINATION OF CEFEPIME, CEFAZOLIN SODIUM AND CEFALOTHIN SODIUM IN PURE AND PHARMACEUTICAL DOSAGE FORMS BY USING NINHYDRIN

ROOPA KOTHATHI PAPANNA*, JAYANNA BIDARUR KRISHNEGOWDA[a], PADMARAJAIAH NAGARAJA[b]

*R & D centre, Bharathiar university, Coimbatore, Tamilnadu. [a]Department of chemistry, B. N. M. Institute of technology, Bangalore, [b]Department of studies in chemistry, University of Mysore, Manasagangotri Mysore

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Received: 09 Feb 2015 Revised and Accepted: 05 Mar 2015

ABSTRACT

Objectives: cefazolin sodium and cefalothin sodium are the broad spectrum of antibiotics, are mainly used to control gram positive and gram negative bacterial infections. Cefepime is used to treat moderate-severe nosocomical pneumonia, infections caused by multi resistant microorganisms.(eg. pseudomonos aeruginosa) and empirical treatment of febrile neutropenia. The objective of our method is to develop an effective, simple and sensitive spectrophotometric method for the assay of the above mentioned drugs in both tablet and in pharmaceutical dosage forms.

Methods: The method is based on the reaction of cephalosporin's with ninhydrin reagent in the presence of sodium molybdate by maintaining the pH (5.5) using citrate buffer. The reaction is carried out at a temperature of 100 °C for 10 min for CEPM, 15 min for both CFZS and CFLS. The resulting Ruhemann's purple product having the absorption maximum at 570 nm is measured against the reagent blank.

Results: Beer's law is obeyed in the concentration range of (1-10 µg/ml) for cefepime, (2-20 µg/ml) for cefazolin sodium and (6-40 µg/ml) for cefalothin sodium respectively. The correlation coefficient's (r^2), molar absorptivity (€), Sandell's sensitivity (s), Limit of detection (LOD) and quantification limits (LOQ) for the studied drugs were calculated. Recovery studies shows that this method is accurate and can be successfully employed for the determination of the studied cephalosporin's.

Conclusion: Recovery studies, optical parameters and statistical comparisons justify that the present proposed method can be applied to routine drug formulation in pure and dosage forms and can be recommended for routine analysis and also for quality control of these drugs.

Keywords: Cephalosporin's, Ninhydrin, Sodium molybdate, Spectrophotometry.

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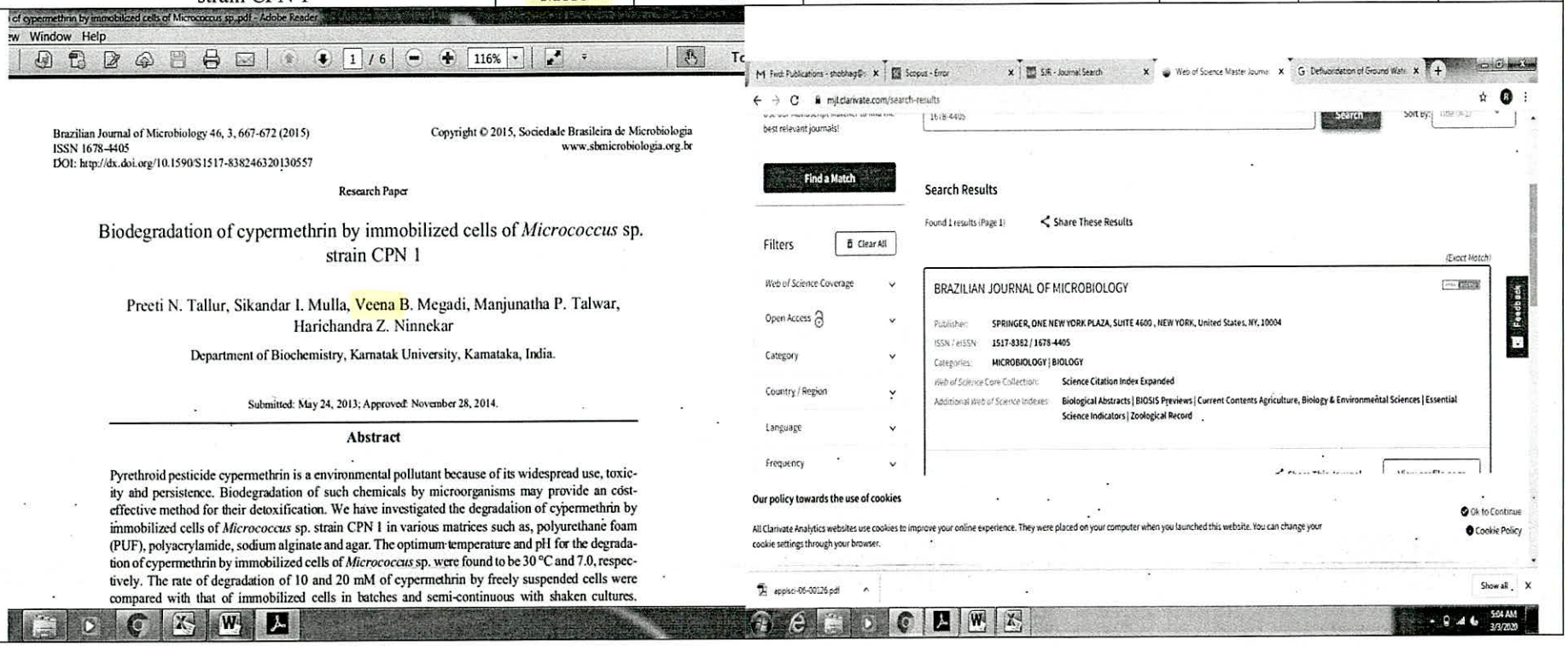
Journal Paper No -20

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Biodegradation of cypermethrin by immobilized cells of Micrococcus sp. strain CPN 1	Veena S More	BT	Braz. J. Microbiol	Mar-15	1678-4405	WOS



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Research Paper

Biodegradation of cypermethrin by immobilized cells of *Micrococcus* sp. strain CPN 1

Preeti N. Tallur, Sikandar I. Mulla, Veena B. Megadi, Manjunatha P. Talwar, Harichandra Z. Ninnekar

Department of Biochemistry, Karnatak University, Karnataka, India.

Submitted: May 24, 2013; Approved: November 28, 2014.

Abstract

Pyrethroid pesticide cypermethrin is a environmental pollutant because of its widespread use, toxicity and persistence. Biodegradation of such chemicals by microorganisms may provide an cost-effective method for their detoxification. We have investigated the degradation of cypermethrin by immobilized cells of *Micrococcus* sp. strain CPN 1 in various matrices such as, polyurethane foam (PUF), polyacrylamide, sodium alginate and agar. The optimum temperature and pH for the degradation of cypermethrin by immobilized cells of *Micrococcus* sp. were found to be 30 °C and 7.0, respectively. The rate of degradation of 10 and 20 mM of cypermethrin by freely suspended cells were compared with that of immobilized cells in batches and semi-continuous with shaken cultures.

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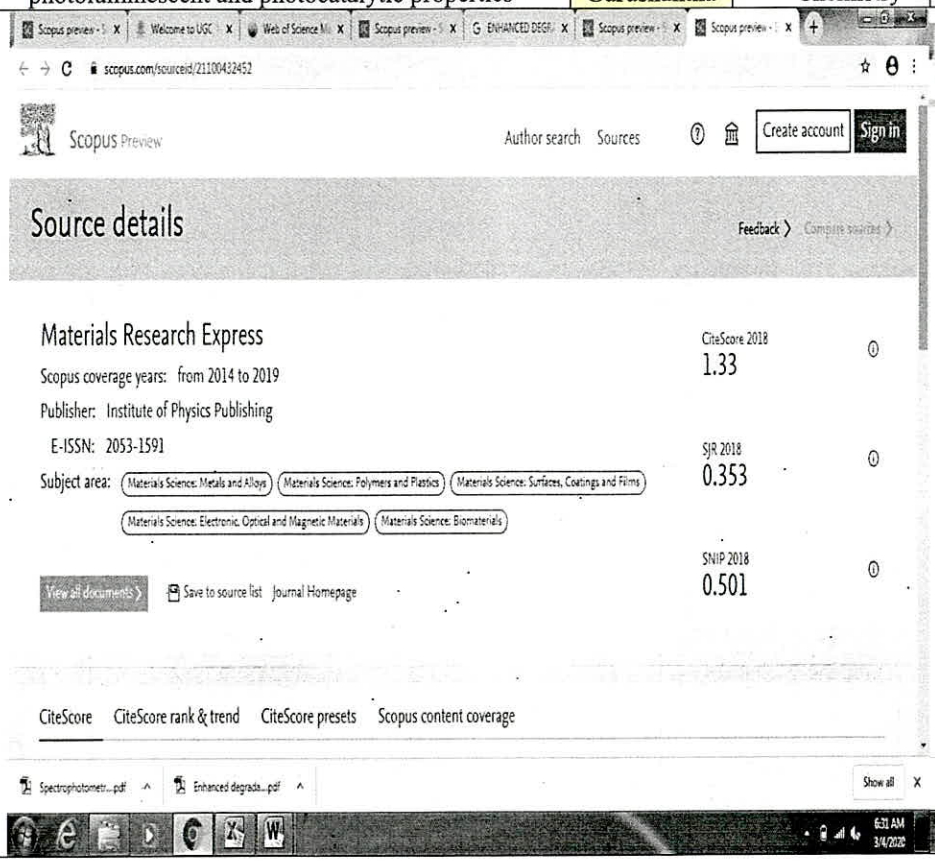
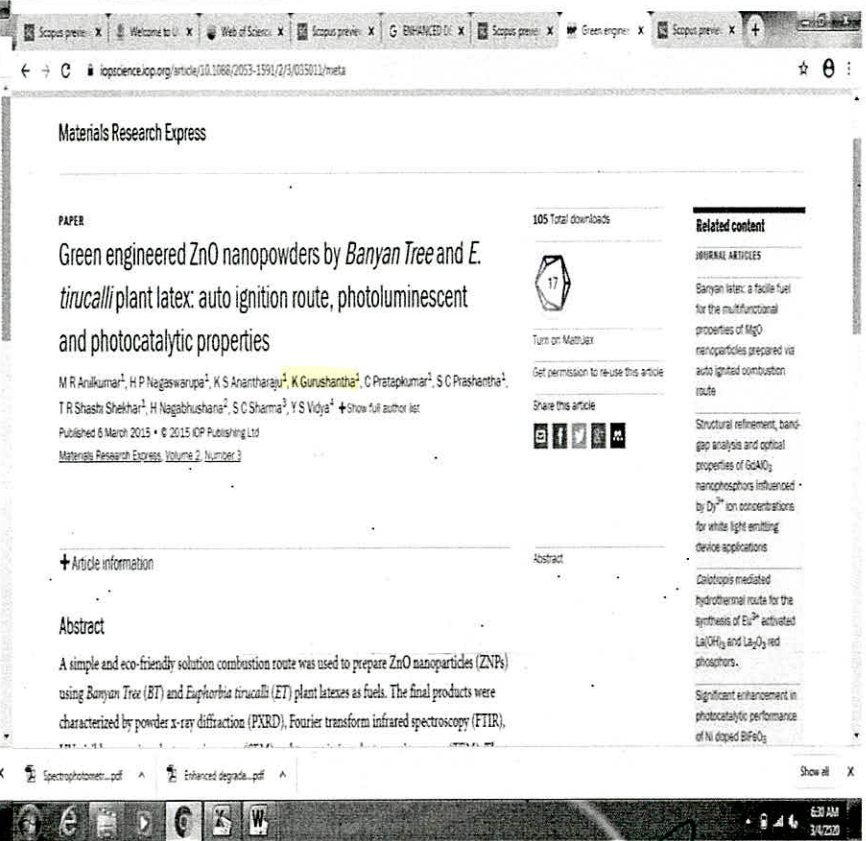
Journal Paper No -21

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Green engineered Zno nanopowders by banyan tree and E-tirucalli plant latex: auto ignited route, photoluminescent and photocatalytic properties	K. Gurushantha	Chemistry	Mater. Res. Express	Mar-15	20531591	Scopus





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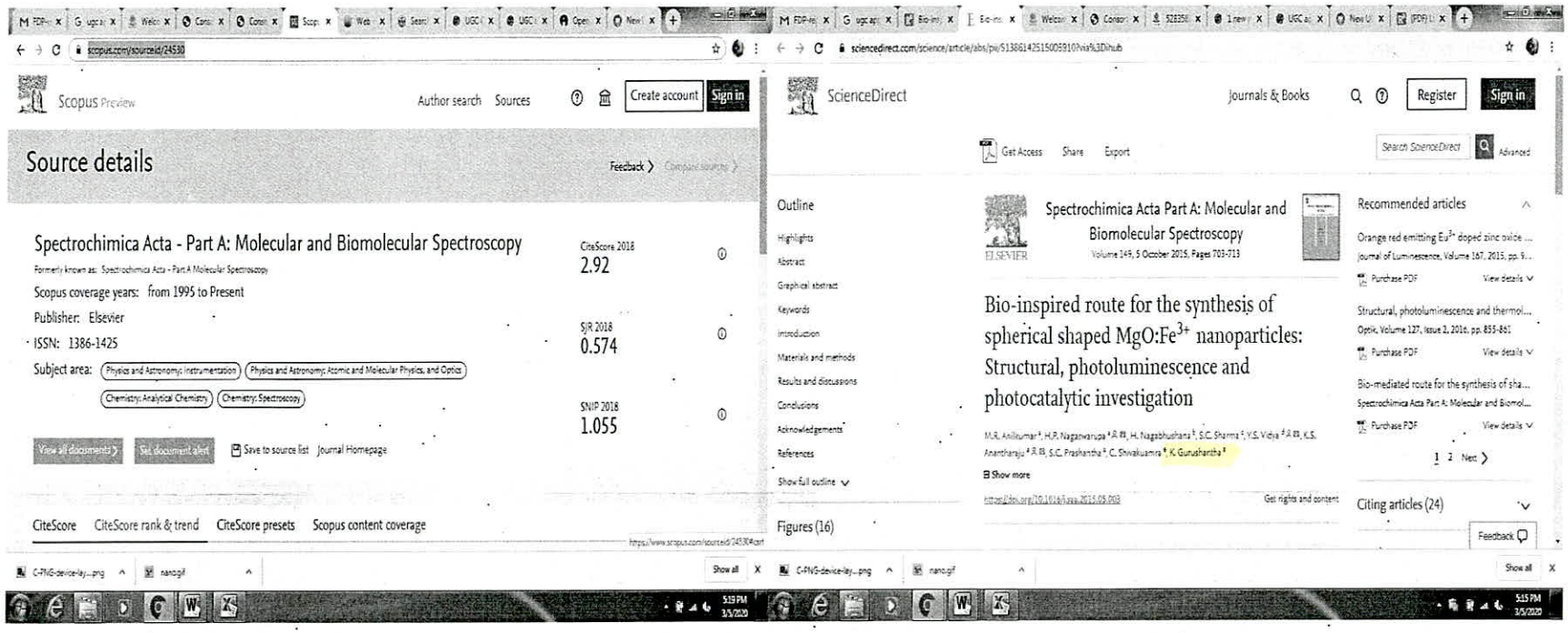
Journal Paper No -22

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Bioinspired route for the synthesis of spherical sphae Mgo:Fe3+ nanoparticle:Structural, photoluminescence and photocatalytic investigation	K. Gurushantha	Chemistry	Spectrochimica Acta Part A:Molecular and Biomolecular Spectroscopy	May-15	1386-1425	Scopus



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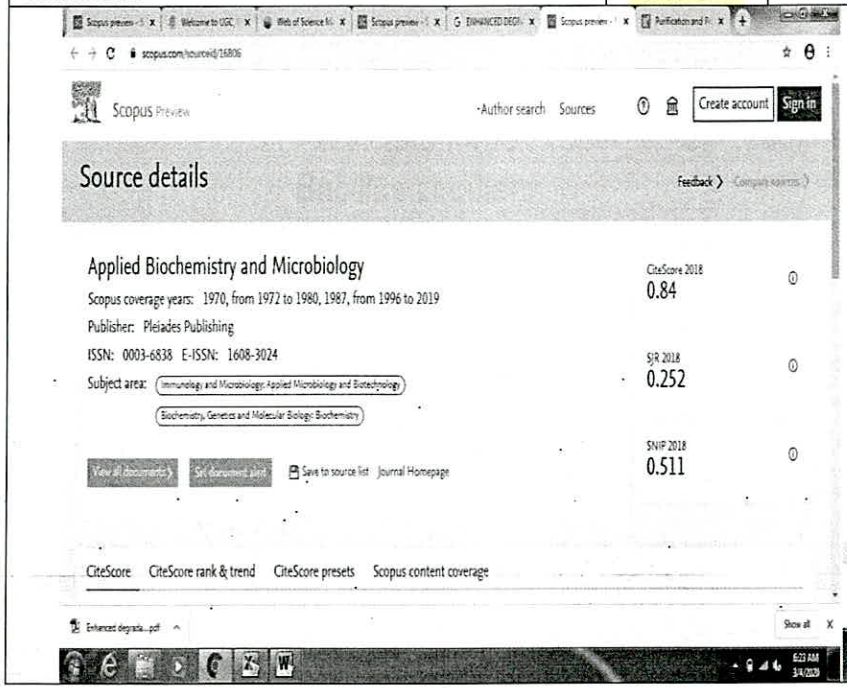
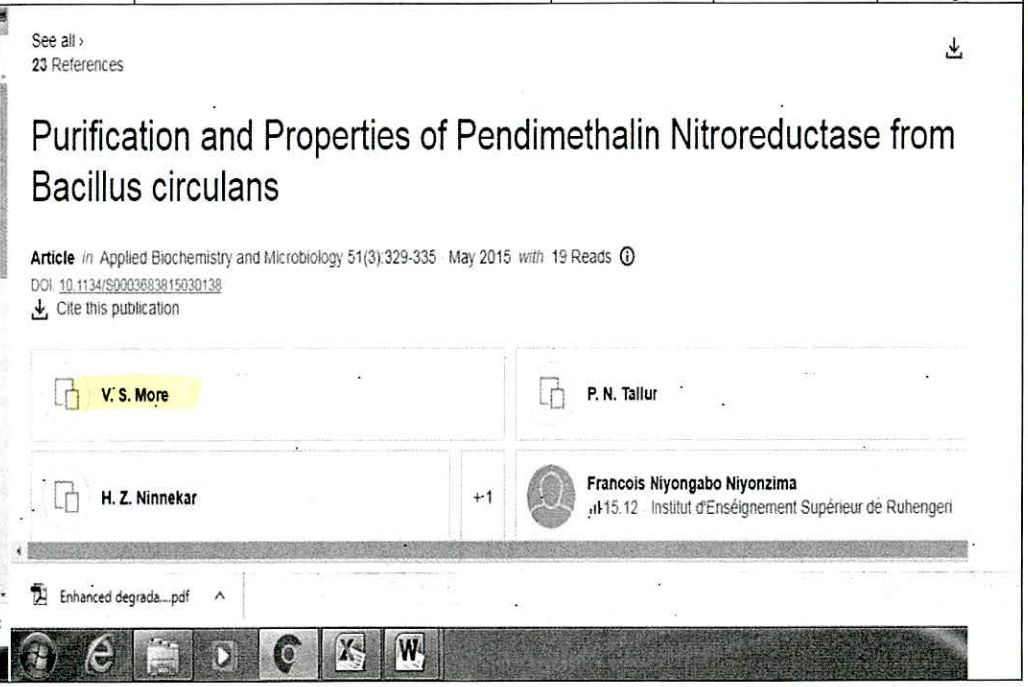
Journal Paper No -23

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Purification and properties of pendimethalin nitroreductase from Bacillus circulans.	Veena S More	BT	Applied Biochemistry and Microbiology	Mar-15	1608-3024	Scopus





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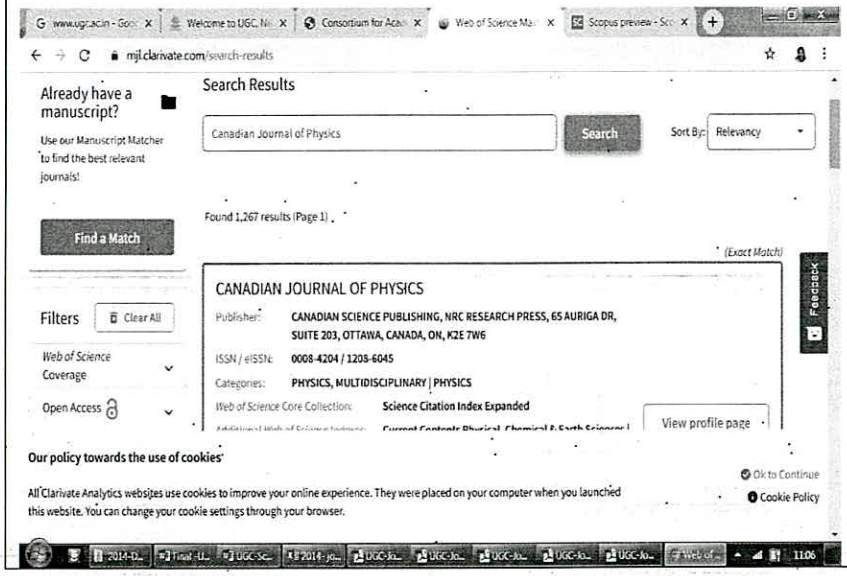
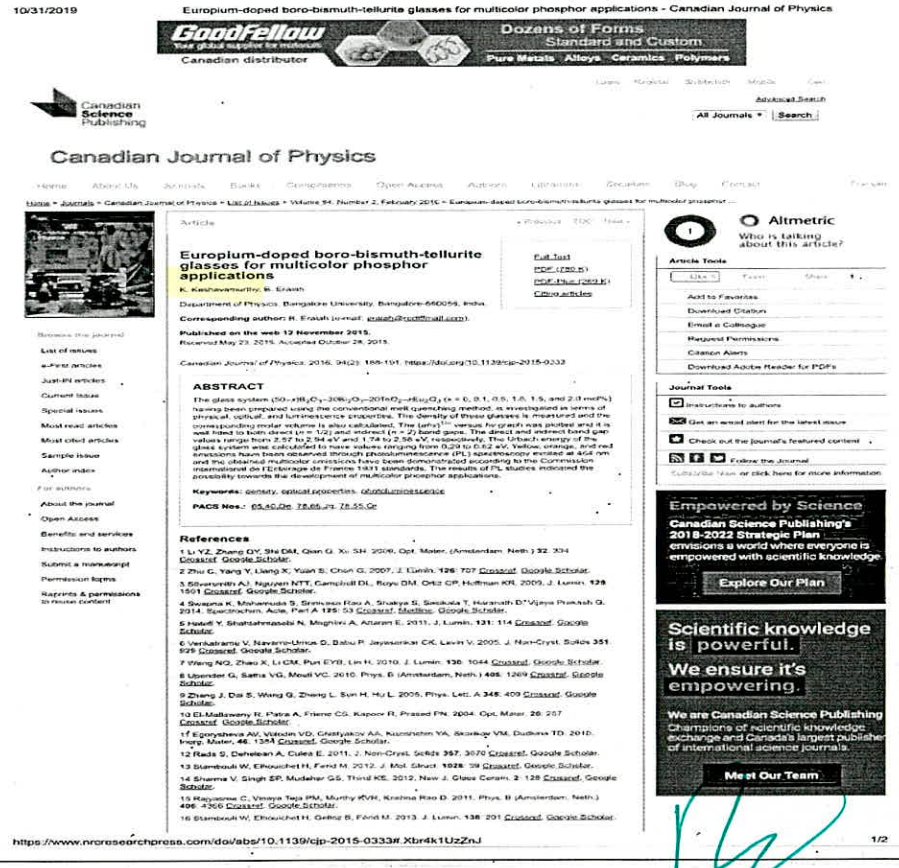
Journal Paper No -24

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Europium doped boro-bismuth-tellurite glasses for multicolor phosphor applications	Keshavamurthy K	Physics	Canadian Journal of Physics	Feb-16	0008-4204	Scopus





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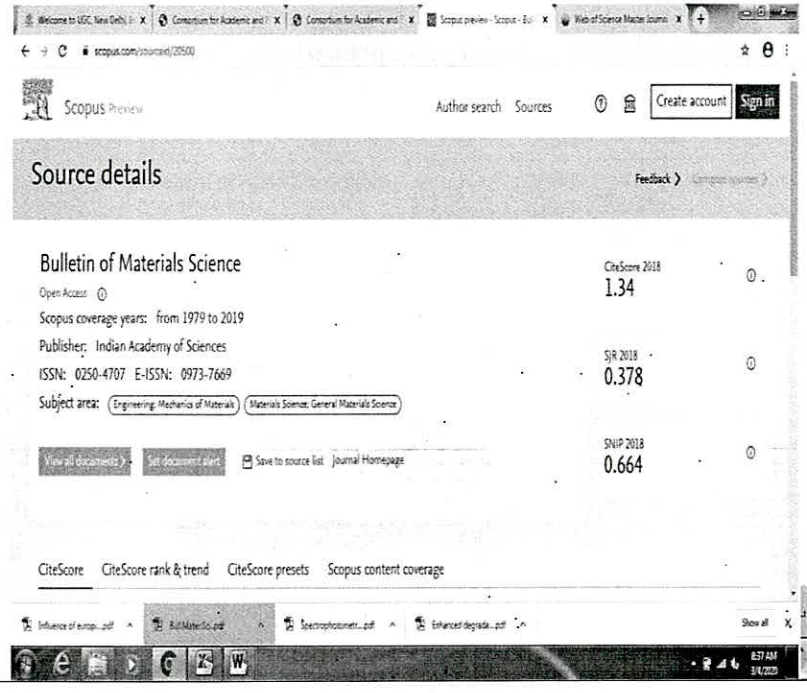
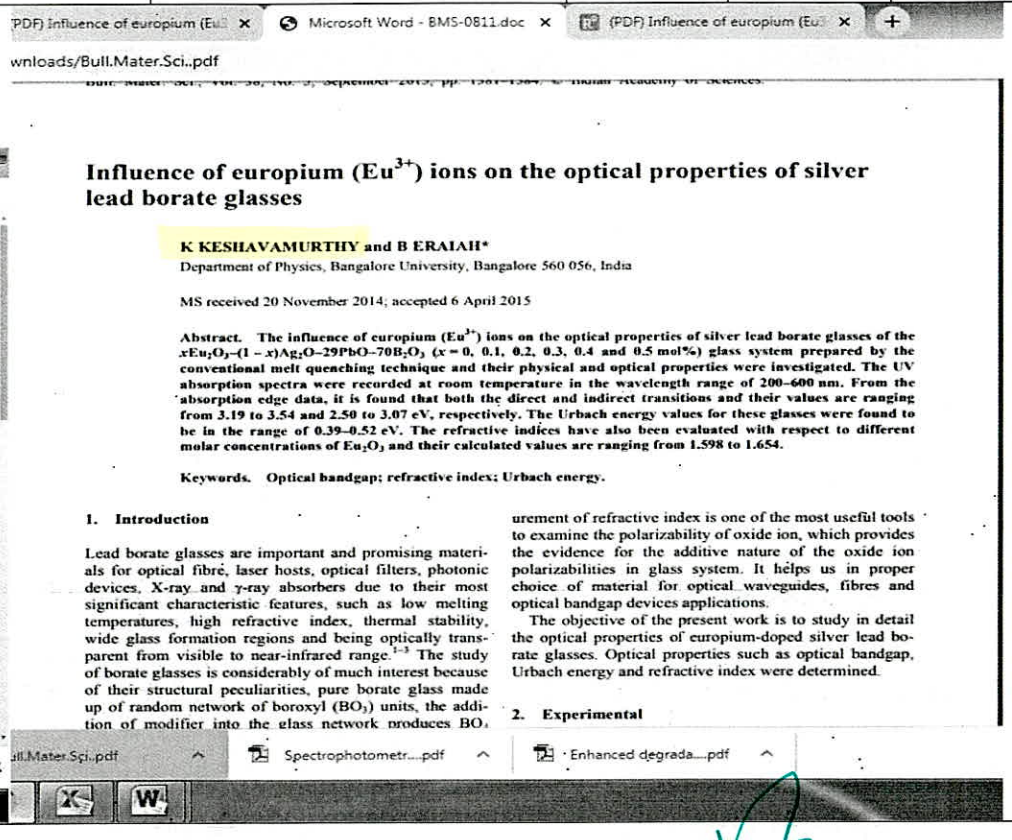
Journal Paper No -25

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Influence of europium (Eu^{3+}) ions on the optical properties of silver lead borate glasses	K. Keshavamurthy	Physics	Bulletin of Materials Science	Sep-15	2504707	WOS





Influence of europium (Eu^{3+}) ions on the optical properties of silver lead borate glasses

K KESHAVAMURTHY and B ERAIAH*

Department of Physics, Bangalore University, Bangalore 560 056, India

MS received 20 November 2014; accepted 6 April 2015

Abstract. The influence of europium (Eu^{3+}) ions on the optical properties of silver lead borate glasses of the xEu_2O_3–$(1-x)Ag_2O$–$29PbO$–$70B_2O_3$ (x = 0, 0.1, 0.2, 0.3, 0.4 and 0.5 mol%) glass system prepared by the conventional melt quenching technique and their physical and optical properties were investigated. The UV absorption spectra were recorded at room temperature in the wavelength range of 200–600 nm. From the absorption edge data, it is found that both the direct and indirect transitions and their values are ranging from 3.19 to 3.54 and 2.50 to 3.07 eV, respectively. The Urbach energy values for these glasses were found to be in the range of 0.39–0.52 eV. The refractive indices have also been evaluated with respect to different molar concentrations of Eu_2O_3 and their calculated values are ranging from 1.598 to 1.654.

Keywords. Optical bandgap; refractive index; Urbach energy.

1. Introduction

Lead borate glasses are important and promising materials for optical fibré, laser hosts, optical filters, photonic devices, X-ray and γ-ray absorbers due to their most significant characteristic features, such as low melting temperatures, high refractive index, thermal stability, wide glass formation regions and being optically transparent from visible to near-infrared range.[1–3] The study of borate glasses is considerably of much interest because of their structural peculiarities, pure borate glass made up of random network of boroxyl (BO_3) units, the addition of modifier into the glass network produces BO_4 urement of refractive index is one of the most useful tools to examine the polarizability of oxide ion, which provides the evidence for the additive nature of the oxide ion polarizabilities in glass system. It helps us in proper choice of material for optical waveguides, fibres and optical bandgap devices applications.

The objective of the present work is to study in detail the optical properties of europium-doped silver lead borate glasses. Optical properties such as optical bandgap, Urbach energy and refractive index were determined.

2. Experimental

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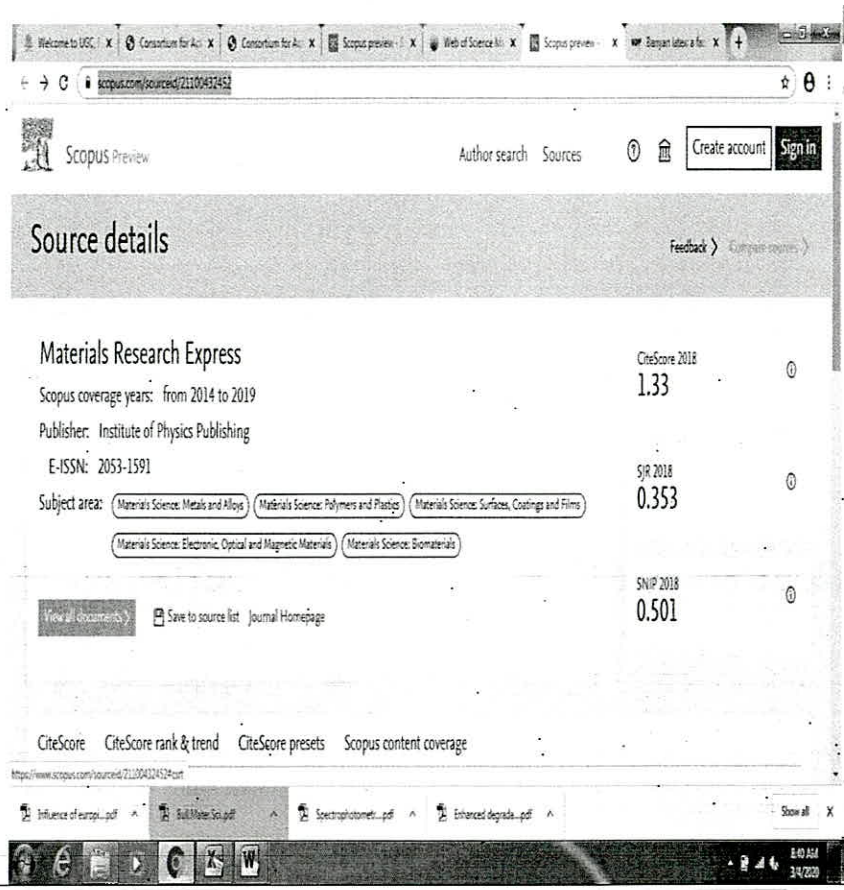
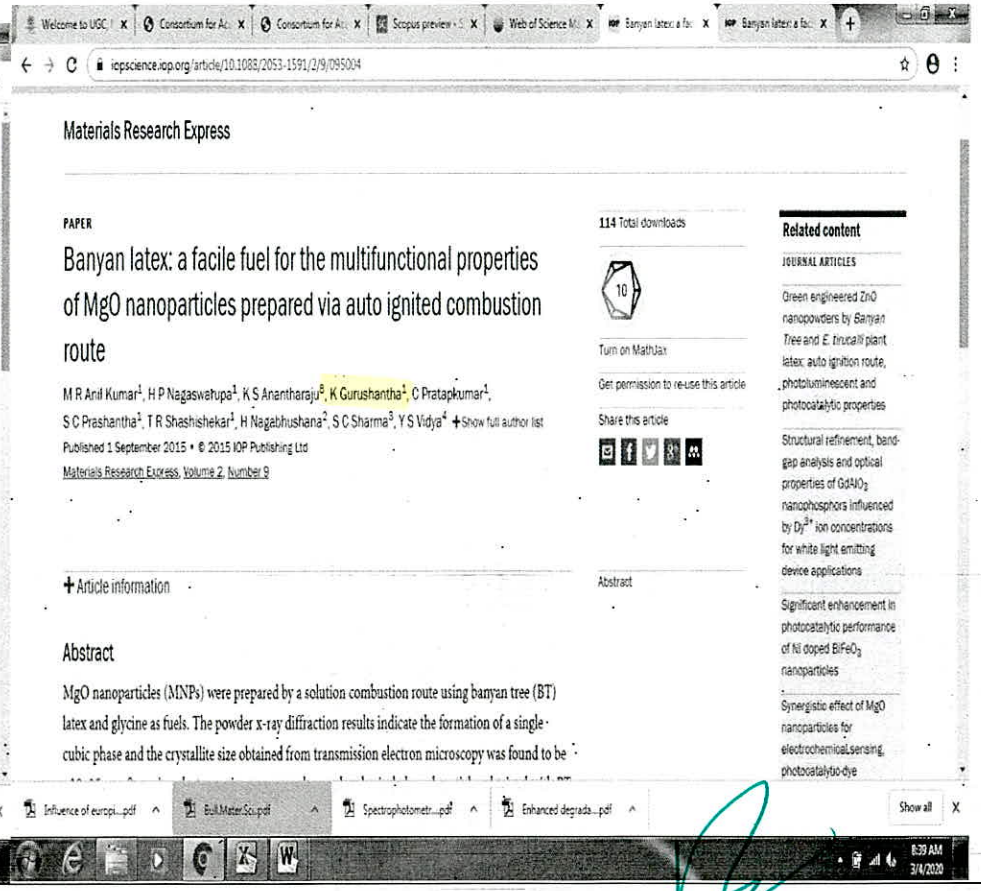
Journal Paper No -26

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Banyan latex: a facile fuel for the multifunctional properties of MgO nanoparticles prepared via auto ignited combustion route	K. Gurushantha	Chemistry	Mater. Res. Expres	Sep-15	20531591	Scopus





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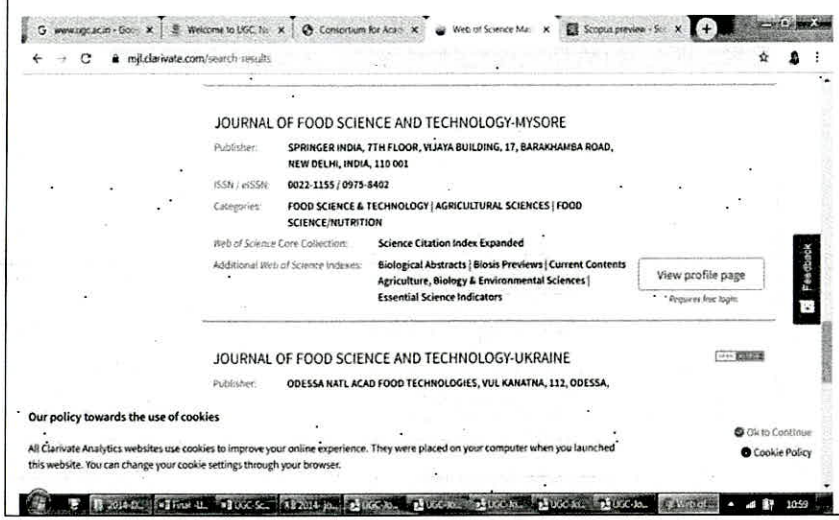
Journal Paper No -27

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Modelling solubility of phenolics of mango ginger extract in supercritical carbon dioxide using equation of state and empirical models	Krishna Murthy TP	BT	Journal of Food Science and Technology	Sep-15	00221155	Scopus



J Food Sci Technol (September 2015) 52(9):5557–5567
DOI 10.1007/s13197-014-1667-1

ORIGINAL ARTICLE

Modelling solubility of phenolics of mango ginger extract in supercritical carbon dioxide using equation of state and empirical models

Thirupathihalli Pandurangappa Krishna Murthy · Balaraman Manohar

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Abstract Solubility of phenolics of mango ginger extract in supercritical carbon dioxide was studied at 40–60 °C and 100–350 bar. Critical temperature, critical pressure and critical volume of caffeic acid, the principal component of the extract were calculated using group contribution methods and compared with the values obtained by CHEMDRAW®. Vapor pressure of caffeic acid was predicted by Reidel method. Solubility prediction in supercritical carbon dioxide was studied using two different equation of states (EOS) models and eight empirical models. Peng-Robinson EOS predicted the solubility very well with average deviation of 0.68 % from the experimental solubility. Empirical equations based on the simple error minimization using non-linear regression method which do not require complex physiochemical properties was also found suitable to predict the solubility at different extraction conditions. Jouyban et al. model showed very less deviation (2.25 %) for predicted solubility values from the experiment.

Keywords Mango ginger · Solubility · Supercritical CO_2 · Equation of state · Empirical models

Introduction

Curcuma amada Roxb popularly known as mango ginger belongs to the family Zingiberaceae. The plant is widely cultivated in India apart from Malaysia, China, Bangladesh, Myanmar, Thailand, Japan and Australia (Sasikumar 2005). It is a unique spice morphologically similar to ginger but imparts mango flavor (Policegoudra et al. 2011). They are widely used in the preparation of culinary items such as pickles, sauces etc. in Indian subcontinent because of its exotic aroma. Nearly, sixty-eight compounds were identified from the steam distilled volatile oil of the rhizome (Rao et al. 1989). In the Indian system medicine, Ayurveda, the plant is given importance as appetizer, alexiteric, antipyretic, aphrodisiac and laxative properties (CSIR Council of Scientific and Industrial Research 1950). The extract of rhizome exhibited antimicrobial, antifungal and anthelmintic activity against tape worms. It is also rich major components including starch, phenolic acids, volatile oils, curcuminoids and terpenoids like difurocumenonol, amadannulen and amadaldehyde (Policegoudra et al. 2011). Many aspects of processing like drying (Krishna Murthy and Manohar 2013a), grinding (Krishna Murthy and Manohar 2013b) and extraction (Krishna Murthy and Manohar 2014) of mango ginger have been studied by the authors. Extraction of mango ginger for its bioactives on a commercial scale is not in practice and such extraction shall result in value-added products.

Supercritical carbon dioxide ($SC\text{-}CO_2$) is a highly promising solvent due to its relatively low critical temperature and pressure, high solvent power, high diffusivity, low viscosity and low surface tension. $SC\text{-}CO_2$ has an added advantage of being non-toxic and non-flammable as compared to many organic solvents that are reported to be carcinogenic (Yeoh et al. 2013). $SC\text{-}CO_2$ can be removed and recovered from the extracts after processing by simple condensation at room temperature. The extraction efficiency and selectivity can be

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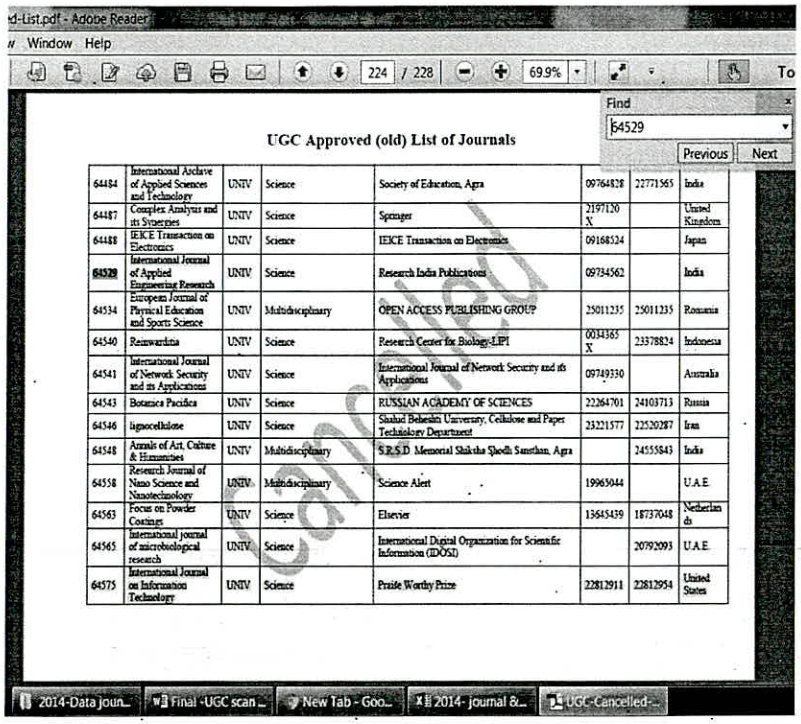
Journal Paper No -28

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Bee-inspired routing the ultimate routing process for energy efficient MANET	Dr. Sasmita Mohapatra	EC	International Journal of Applied Engineering Research	Sep-15	9734562	



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Bee-Inspired Routing the ultimate routing process for Energy Efficient MANET

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Abstract
Mobile ad hoc network (MANET) is one of the most important and unique network in wireless network which has brought maximum mobility and scalability. High efficient routing is an important issue in the design of limited energy resource MANETs. In the last few decades many research work have been conducted by the researchers in the field of routing protocols for MANETs. Nowadays the main area of concern is based on routing protocols utilizing the concept of swarm intelligence in which bee inspired routing and ant inspired routing are suggested. But among these two Bee inspired routing has been accepted widely for energy efficient and scalable multipath routing protocol based on dynamic cluster and foraging behavior of a bee swarm. Here in this paper the advantages of Bee inspired routing have been discussed with respect to its architecture and working for choosing the intermediate nodes and different paths by comparing different parameters of all the algorithms from the ant colony optimization and bee colony optimization for energy efficient MANETs where the performance of Bee-AdHoc-C is found to be best.

Keywords— MANET;Energy Efficiency;Bee Inspired Protocols; Scouting; Foraging; Bee-AdHoc-C

I. Introduction

MANET is self-organizing, rapidly deployable which does not require any fixed infrastructure. Mobile nodes self-organize to form a network over radio links. The goal of MANETs is to broaden mobility into the area of autonomous, mobile and wireless domains, where a set of nodes form the network routing infrastructure in an ad-hoc manner. The main characteristics of a MANET are:

- Packets may need to be forwarded by several nodes to reach the destination.
- Dynamic topology due to the nodes' mobility or nodes leaving/joining the network, which causes packet loss and route change.
- Resource constrains: wireless medium bandwidth, device's battery, processing speed and memory.

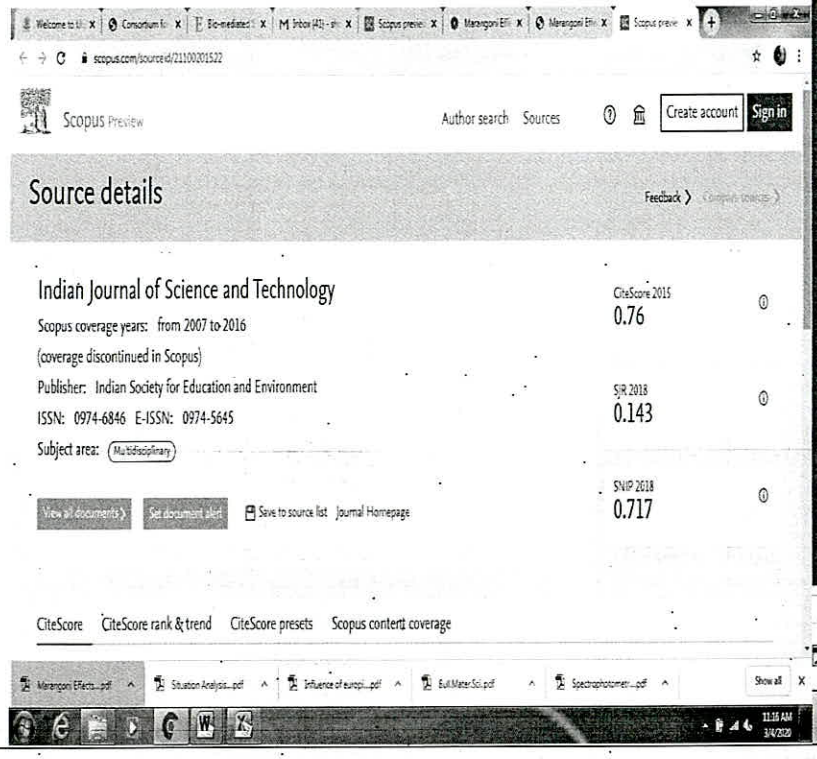
As the nodes in the MANET are battery operated so there are possibilities that some of the nodes may fail for communication in between for which care has been taken to make the MANETs energy efficient. In this purpose the swarm intelligence concept is considered as one of the best way. Swarm intelligence (SI) is the collective behavior of decentralized, self-organized systems, natural or artificial. Ants, Bees, flock of birds or Termites show impressive collective problem-solving capabilities. Properties associated with their group behavior like self-organization, robustness and flexibility are best characteristics for optimization of artificial systems, control or task execution. Swarm Intelligence mainly consists on Particle Swarm Optimization (PSO), Ant Colony Optimization (ACO) and Honeybees paradigms. A swarm is defined as a set of (mobile) agents that collectively solve problems. In the nature animals form into swarms to search food, build nests, to hunt and avoid being hunted etc. Each individual of the swarm has simple rule of action and access to a limited amount of information via its immediate neighbors or local environment. Due to the nature, architecture, topology and functionality of ad hoc and wireless networks, Swarm Intelligence approaches are most suitable for the routing and energy resources optimization related issues in MANETs. Bio inspired, Swarm Intelligence approaches are more promising for ad hoc and wireless Ad hoc networks due to

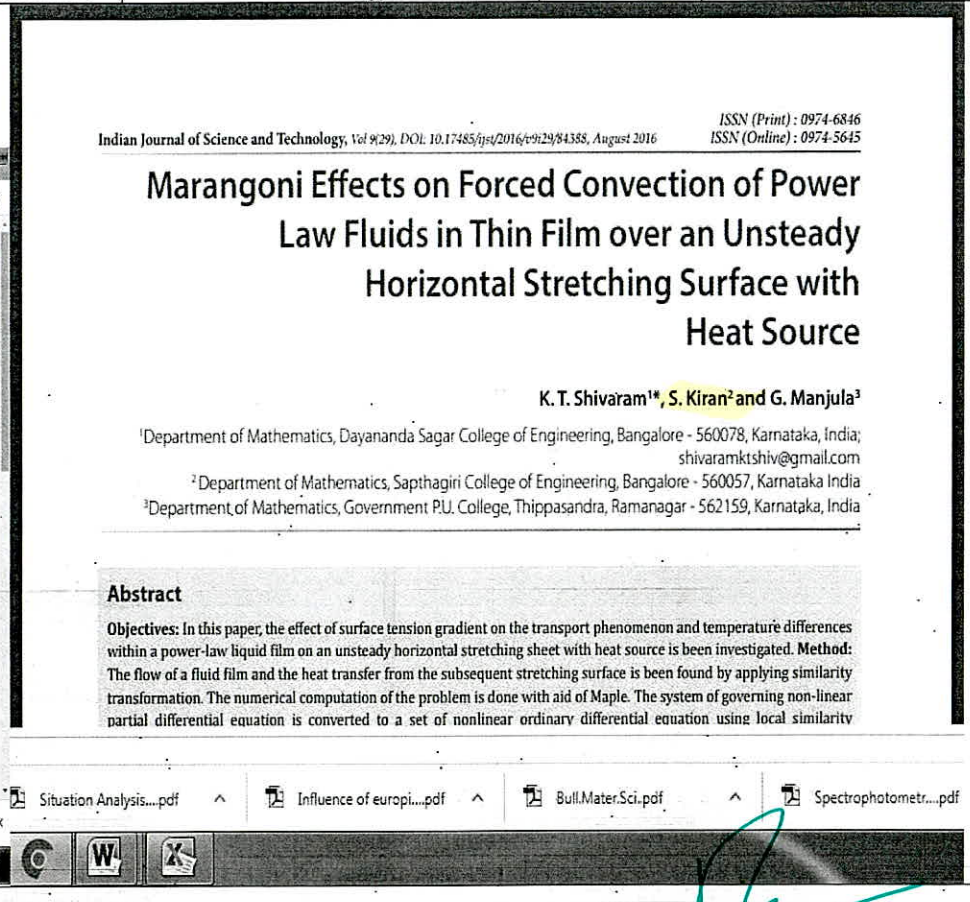
i) Locality of interactions
ii) Availability of multiple paths,
iii) Self-organizing behaviors
iv) Failure backup,
v) Ability to adapt in a quick and robust way to topological and traffic changes and 'component failures,
vi) Scalable performance robustness to failures,
vii) Losses internal to the protocol,
viii) Easiness of design and tuning.

In this paper we have discussed regarding different algorithms for ant colony and bee colony optimization required for energy efficient MANETs and have discussed the advantages of bee colony optimization with respect to its architecture and working principle for packet transfer between the nodes. Lastly we have done comparative analysis of different algorithms for ant and bee colony with respect to different parameters.

Journal Paper No -29

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Marangoni effects on forced convection of power law fluids in thin film over a unsteady horizontal stretching surface with heat source	Kiran S	Mathematics	Indian Journal of Science and Technology	Aug-16	0974-5645	Scopus





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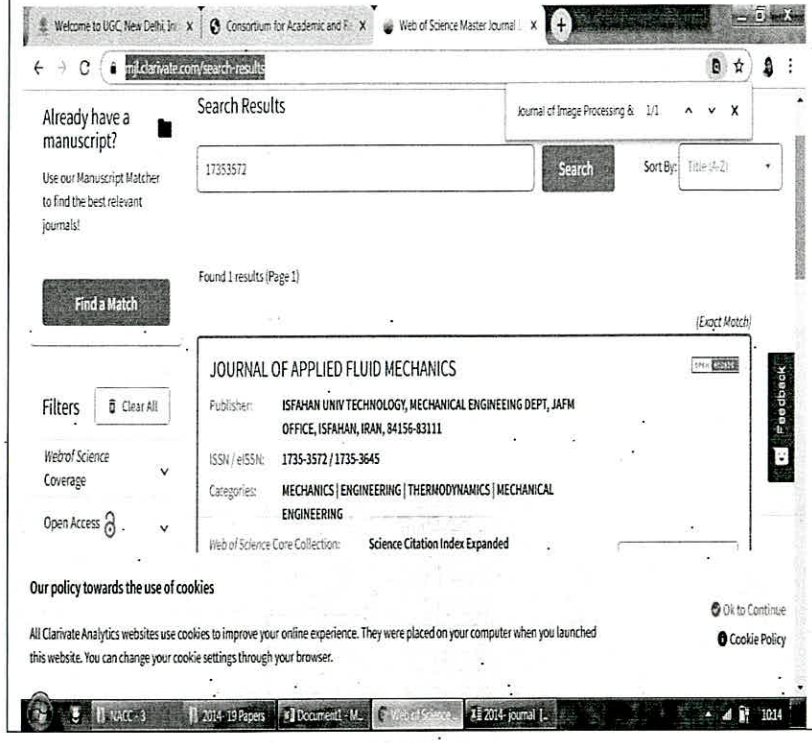
Journal Paper No -30

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Influence of size and location of a thin baffle on natural convection heat transfer in a vertical annular enclosure	Pushpa B V	Mathematics	Journal of Applied Fluid Mechanics	Jan-16	17353572	Scopus



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Influence of Size and Location of a Thin Baffle on Natural Convection in a Vertical Annular Enclosure

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ABSTRACT

This article reports the numerical study of natural convection in a differentially heated cylindrical annular enclosure with a thin baffle attached to inner wall. The inner and outer walls of the annulus are respectively maintained at higher and lower temperatures, whereas the top and bottom walls are thermally insulated. Using an implicit finite difference technique, the effects of baffle size and location on natural convection has been investigated for different Rayleigh numbers and radius ratios by fixing the Prandtl number at 0.707. Through the detailed numerical simulations, we have successfully captured the important effects of baffle size and location on the flow pattern and heat transfer rate. It has been found that the size and location of baffle modify the flow pattern and heat transfer rate in a completely different conducts. The numerical results corroborates that the average heat transfer rate increases with the Rayleigh number, radius ratio, baffle position; but decreases with baffle length. Further, it has been observed that it is possible to enhance or suppress the flow circulation and heat transfer rates by a proper choice of baffle size and location, and Rayleigh number.

Keywords: Convection; Baffle; Annulus; Finite difference method.

NOMENCLATURE

A	aspect ratio	(r_i, r_o)	radius of inner and outer cylinders
D	width of the annulus	(r, z)	dimensional radial and axial co-ordinates
g	acceleration due to gravity		
H	height of the annulus	(R, Z)	dimensionless radial and axial co-ordinates
h	dimensional position of baffle		
k	thermal conductivity	(u, w)	dimensional velocity in (r, z) directions
l	dimensional length of baffle		
L	dimensionless position of baffle		
Nu_L	local Nusselt number at inner wall	α	thermal diffusivity
		β	volume expansion coefficient
Nu_R	local Nusselt number at outer wall	ε	dimensionless length of baffle
		ζ	dimensionless vorticity
$\overline{Nu}$	average Nusselt number	θ	dimensionless temperature
p	fluid pressure	λ	radius ratio
Pr	Prandtl number	υ	kinematic viscosity
Ra	Rayleigh number	ρ	fluid density
T	dimensionless temperature	ψ	dimensionless stream function
t^*	dimensional time		
t	dimensionless time	**Subscripts**	
(U, W)	dimensionless velocity in (R, Z) directions	c	cold wall
		h	hot wall

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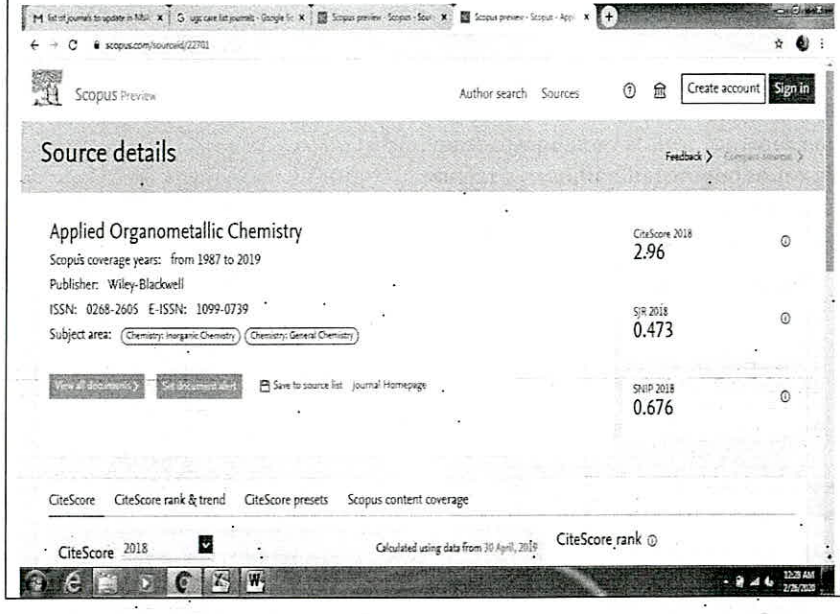
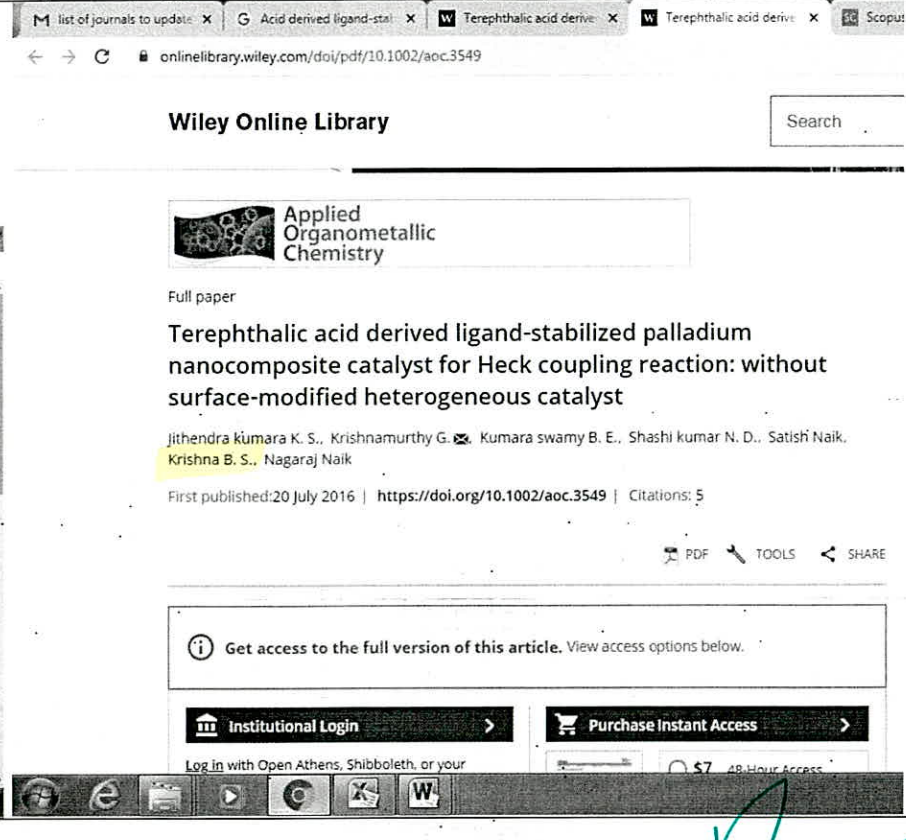
Journal Paper No -31

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Trephthalic acid Derived ligand stabilized palladium nanocomposite catalyst for heck coupling reaction without surface modified heterogenous catalyst	Krishna B.S	Chemistry	Applied organometallic chemistry	Jun-16	1099-0739	Scopus





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