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Journal Paper No -75

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Situation Analysis of Load Shedding and its Effectiveness in the Area of Power System Security	G. Raghavendra	EEE	International Journal of Applied Engineering Research	May-16	0973-4562	UGC Earlier

International Journal of Applied Engineering Research ISSN 0973-4562 Volume 13, Number 20 (2018) pp. 14561-14565

Situation Analysis of Load Shedding and its Effectiveness in the Area of Power System Security

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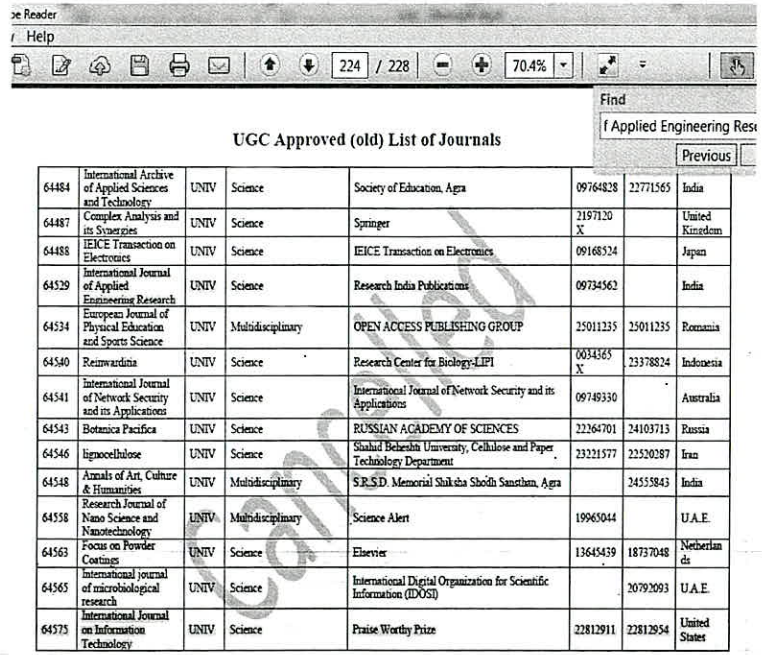
Abstract

With the hasty growth of the power system to impact increased consumer demand and with more inflexible economic and ecological boundaries, power systems become more composite and severely stressed. Subsequently, system extensive disturbances which lead to the disturbance of voltage and frequency stability which is a critical threat to the power system security. The frequency and voltage instability may lead to the blackout and severely damages the power system gadgets. This upturns the significance of instigating a protection scheme that conserves the system stability. The ultimate procedure prevents the occurrence of a system collapse incident is the functioning of a load shedding scheme. These paper emphases on the overview of the UFLS and UVLS scheme. This paper performs the situational analysis of the existing load shedding scheme. And reassessments some of the frequently adopted techniques along with the brief discussion of the existing scheme to extract the research gap in shedding are the location of load shedding, amount of shedding load, and time of load shedding. Consequently to avoid post contingency problems, detecting the location of the buses for load shedding must be determined based upon the load significance, curtailment cost and the distance of the curtailed load to the contingency location[3].

Basically, the load shedding scheme is categorized into Under frequency Load shedding (UFLS) and Under voltage load shedding (UVLS). As previously stated, when a power system distraction creates active power imbalance, consequential causes in a frequency deterioration and emergency action such as UFLS may be enforced. If system frequency decline further than the given threshold, for a short amount of time, power stations may trip off causing additional load imbalance which may lead to a power system collapse [4,5]. To prevent massive voltage collapse due to the occurrence of desperate inadequacy in reactive power reserves, power utilities designate Under voltage load shedding(UVLS) because it is an economical



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64484	International Archive of Applied Sciences and Technology	UNIV	Science	Society of Education, Agra	09764828	22771565	India
64487	Complex Analysis and its Synergies	UNIV	Science	Springer	2197120X		United Kingdom
64488	IEICE Transaction on Electronics	UNIV	Science	IEICE Transaction on Electronics	09168524		Japan
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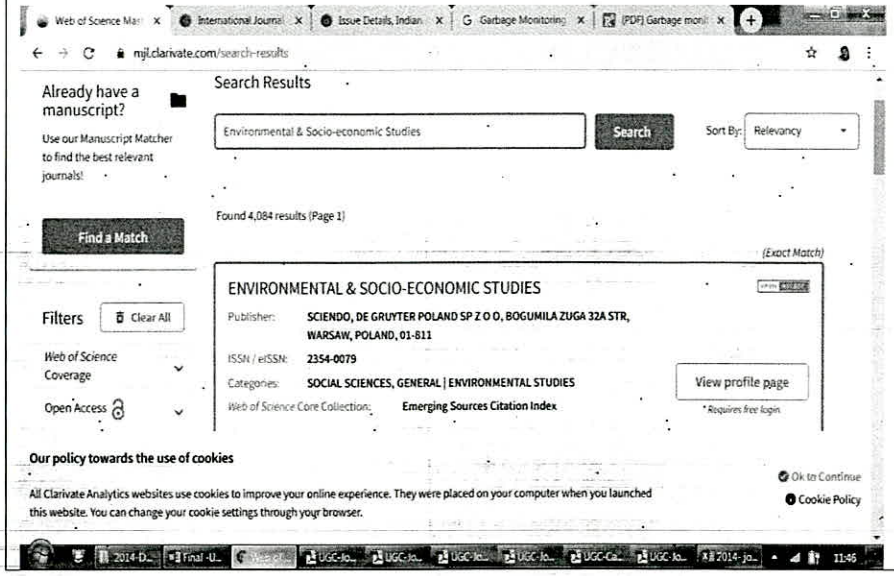
Journal Paper No -76

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
A study on the groundwater of Peenya industrial area and its related elements in Bengaluru region of Karnataka State, India	Blessy Baby Mathew	BT	Environmental & Socio-economic Studies	Jun-18	15577929	Scopus



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DOI: 10.2478/environ-2018-0009

Environ. Socio.-econ. Stud., 2018, 6, 2: 1-12

Original article

A study on the groundwater of Peenya industrial area and its related elements in Bengaluru region of Karnataka State, India

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ABSTRACT

Groundwater samples were collected from the Peenya Industrial area of Bengaluru, India to test its quality, elemental composition and inherent bacterial population. Further analysis was done using GIS Based Geostatistical techniques to study the level of groundwater and to generate various maps of lineament, digital elevation, geomorphology, soil erosion, salt affected areas and water logging in this region. Physical and chemical parameters such as Total Dissolved Solids, pH, temperature, BOD, COD, metal ions present in the water samples were studied along with predominant microbial constituents. The Total Dissolved Solids and Total Hardness were far beyond the maximum concentration levels. Further analysis of the isolated bacteria was done using staining methods and biochemical tests. The results obtained showed that the area under study had wells ranging from shallow to deep heights of 30 to 80 meters, with a wide variety of 10-400 LPM; whereas the lineament map suggested that the area was bound with parallel ridges and joints. The geographical data represented pediplain complexes, anthropogenic terrains and water bodies. The area was found to go through a seasonal water logging and the soil loss was due to sheet erosion and rill erosion. It was also observed that the groundwater was contaminated with heavy metals such as lead, chromium etc. along with a diversified bacterial population.

KEY WORDS: industrial area groundwater; GIS; heavy metals; groundwater contaminants

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1. Introduction

Groundwater contributes to about eighty percent of the drinking water requirements in rural areas, fifty percent of urban water requirements and more than fifty percent of the irrigation requirements of the nation, but due to rapid industrialization and population explosion the groundwater quality and quantity have been significantly affected and overexploited (JAISHANKAR ET AL., 2014; MATHEW ET AL., 2016). 90% of the rural and 30% of the urban population depends upon groundwater for their domestic requirements (SHAH ET AL., 2003). This has led to an overwhelming rise in the research related to groundwater statistics, composition, quality aspects, recharge–discharge relationship and its resource potential.

This study is from III and IV phase of Peenya industrial area from the state of Karnataka that is situated between 13.0308 and 13.0151 latitude besides 77.5060 and 77.5225 longitude with a total geographical area of 191791 km². Physiographically the state is divided into four regions having northern and southern plains, a western coastline and hilly areas. The elevation varies from 200 to 1900 meters above sea level and each region has a distinct climate that receives more than 250 cm of rainfall annually, but the rate of drawing water is more than that recharged each year. The groundwater condition in all four taluks of Bengaluru Urban district is deteriorating. Karnataka stands to have over-utilized 70% of its groundwater, out of which only less than 1% is fit for drinking according to the latest reports by the ministry of water resources (SHANKAR ET AL., 2008; JEROME & PIUS, 2010). The defilement of groundwater has occurred over the years and the contaminants are mainly heavy metals, microbes most commonly

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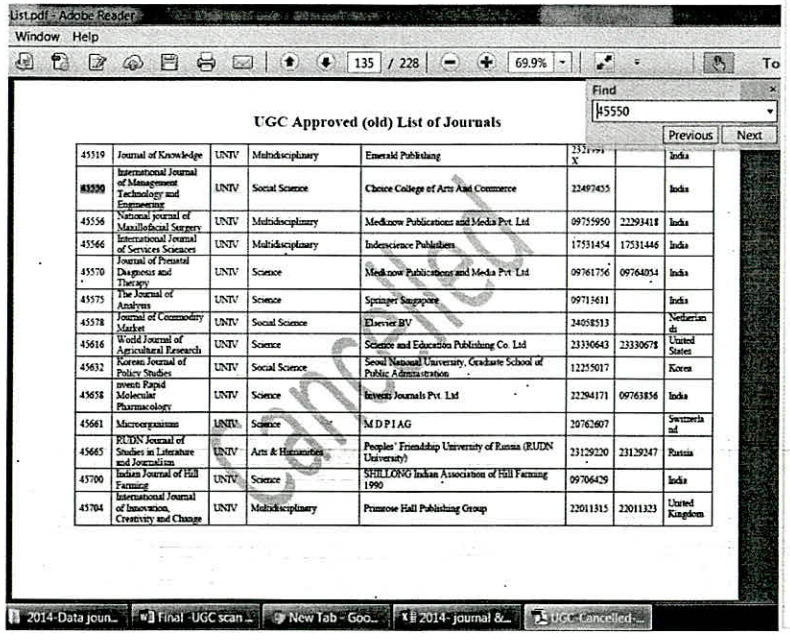
Journal Paper No -77

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Growing greens on wall structures using waste water and biofilter	Chandra S	Civil	International Journal of Management Technology and Engineering	May-17	22497455	



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45556	National journal of Maxillofacial Surgery	UNIV	Multidisciplinary	Medknow Publications and Media Pvt. Ltd	09755950	22293418	India
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45661	Microorganisms	UNIV	Science	MDPIAG	20762607		Switzerland
45665	RUDN Journal of Studies in Literature and Journalism	UNIV	Arts & Humanities	Peoples' Friendship University of Russia (RUDN University)	23129220	23129247	Russia
45700	Indian Journal of Hill Farming	UNIV	Science	SHILLONG Indian Association of Hill Farming 1990	09706429		India
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GROWING GREENS ON WALL STRUCTURES USING WASTE WATER AND BIOFILTER

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ABSTRACT

The developing and developed nations witnessing urbanization in global wides.As that results its facing many changes and many of problems can be seen in city limits as the nation's grows,the over population, drinking and domestic water supply, solid wastes, housing, food, pollution, clean fresh air, good nature etcetera.Our surrounded concrete world is really needed of some spacing gardens near to housing, but due to lack of space within or in-between in the houses it can not be possible for many people. To overcome this problem, the green walls or vertical gardens are the simple technic. The growing of greens on walls or on roofs are possible by adopting some special technical design. By adopting of this green walls we can have the many uses, like getting fresh air near to our presence, we can grow of good, organic and fresh vegetables and fruits, we can also decorate our walls and buildings by growing greens on it. Here the growing of the greens on the walls is not only the concept, rather than that growing of this greens by using the waste water of the same house. Yes, this waste water which is leaved simple to sewage are to be prevented by adopting this method. And also the main other problem like waste water which is leaving to rivers or lakes, which is made to be the water treatment is done easily as basic treatmentinfiltration pass through the planter boxes. This same water which is filtered treated water can be leave to rivers or any other place, or it can be reused for the domestic purposes, the water recycling also be done by this method. The single modulation of design can achieve the many uses by the green wall project. To over come the many problems of urbanization this will be give good results and holds good stand.

Key words:*Green walls, Biofilter, Water recycle system, planter box.*

INTRODUCTION

A 'Green Wall', also commonly referred to as a 'Vertical Garden', is a descriptive term that is used to refer to all forms of vegetated wall surfaces. In our planet plants have served humanity since the dawn of time, supplying food, clothing, building materials and a host of other goods. With the advent of the modern industrial city, now home to more than half of the world's population, planners, designers and urban advocates are once again turning to plants – green infrastructure - as a key strategy to provide cleaner air and water, while improving living environments, human health and mental well-being. The integration of the living, organic systems characterized by green walls and green roofs, with the

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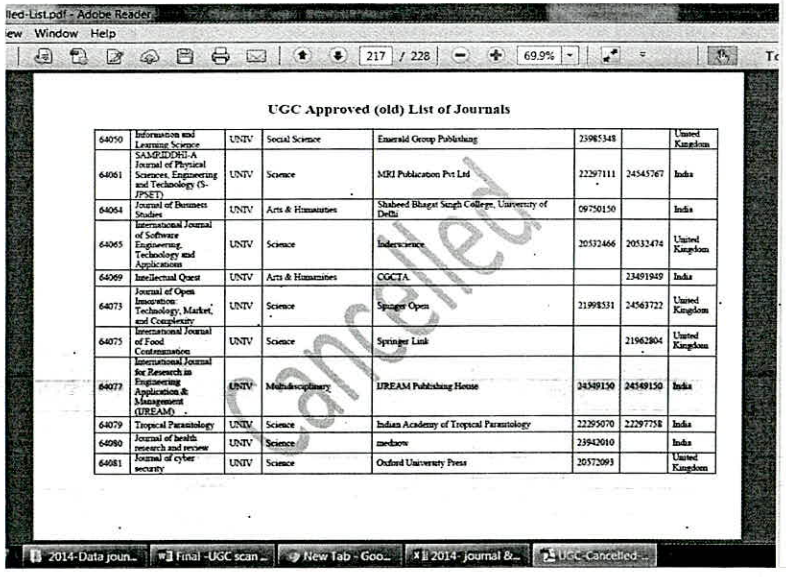
Journal Paper No -78

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Experimental investigation on dairy scum biodisel on CI DI Engine perferomance and pollutant characteristics at different injection pressures	Tilak SR	ME	International Journal for Research in Engineering Application & Management (IJREAM)	Oct-18	24549150	



64050	Information and Learning Science	UNIV	Social Science	Emerald Group Publishing	25985348		United Kingdom
64061	SAMRIDDHI-A Journal of Physical Sciences, Engineering and Technology (S-JPSET)	UNIV	Science	MKI Publication Pvt Ltd	22297111	24545767	India
64064	Journal of Business Studies	UNIV	Arts & Humanities	Shaheed Bhagat Singh College, University of Delhi	09750150		India
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64075	International Journal of Food Contamination	UNIV	Science	Springer Link		21962804	United Kingdom
64077	International Journal for Research in Engineering Application & Management (IJREAM)	UNIV	Multidisciplinary	IJREAM Publishing House	24549150	24549150	India
64079	Tropical Parasitology	UNIV	Science	Indian Academy of Tropical Parasitology	22295070	22297758	India
64080	Journal of health research and review	UNIV	Science	medknow	23942010		India
64081	Journal of cyber security	UNIV	Science	Oxford University Press	20572093		United Kingdom

International Journal for Research in Engineering Application & Management (IJREAM)
ISSN : 2454-9150 Volume-04, Issue-07, Oct-2018

Experimental investigation on dairy scum biodiesel on CI DI Engine Performance and pollutant Characteristics at different injection pressures

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S V Channapattana, Professor, D Y Patil College of Engineering, Ambi, Talegaon Dabhade, Pune, India, shylesha@gmail.com.

Abstract - The aim of the present investigation is to extract the biodiesel from dairy scum oil and to evaluate the performance and emission parameters with standard diesel fuel. Dairy scum oil is treated with an adequate measure of CH3OH which required and quantity of sodium hydroxide as a catalyst which is accessible in bio-chemical laboratories. Transesterification process was adopted to produce biodiesel under an optimized reaction temperature of 60 °C , the reaction time of 85 minutes, the quantity of methanol to oil ratio (1:3), the concentration of sodium hydroxide (0.6% v/v). Experimental investigation were conducted in CI DI engine to check the performance and pollutant characteristics of methyl esters of dairy scum oil by varying the injection pressures as 160 bar, 180 bar, and 200 bar. The essential performance parameters such as specific fuel consumption, BTE and emission parameters such as CO, CO_2, HC, NOx are found out and contrasted the results of biodiesel with the regular diesel fuel. The dairy scum biodiesel can be used as an alternative fuel and the properties obtained were within the ASTM standards.

Keywords: *Biodiesel, Dairy scum oil, Diesel engine , Emission, Performance, Transesterification.*

I. INTRODUCTION

The trends in global energy consumption surveys depict that a main chunk of overall energy consumed is obtained from combustion of fossil fuels. Predominantly among fossil fuels, liquid petroleum-based fuels contribute significantly due to their distinct physico-chemical and combustion properties. But, the major concern here is liquid fuel reserves are limited and may exhaust any time, and their economic utilization is the fact bothering all researchers [1, 2]. Biodiesel is a renewable fuel obtained from animal fat or vegetable oil through a complex chemical process and can be employed as any direct substitute, extender or as an improver to fossil diesel fuel in CI engines [3]. The important factor is that biodiesel fuel could be directly used in existing automobile engines with a minute or no hardware modifications in engine design. These biodiesels are produced through a chemical reaction of animal fat or vegetable oils with methanol/ethanol in the occurrence of a catalytic agent to make glycerol as a main byproduct [4-8]. Biodiesel chemical name is methyl or ethyl ester. Sivakumar et al. [9] used dairy scum oil with an alkali-catalyzed transesterification process to produce biodiesel of waste dairy scum oil by using gas chromatography, test and obtained maximum biodiesel yield of 96.7% by using 6:1 molar ratio, KOH of 1.2% wt at a stirring speed of 350 rpm, 30minutes of reaction time and a reaction temperature of 75 °C.The measured physicochemical properties are within the ASTM standards.Banapurmath et al. [10] BTE for methyl esters of pongamia oil, sesame oil jatropha oil, and conventional diesel fuel was 29.51%, 30.4% and 29% and 31.25%.Emissions for HC and CO were more than that of traditional diesel fuel. Canakci et al. [11] by using the methyl esters of canola oil and waste palm oil, the brake power lowered by 4% to 5%, BSFC increased by 9% to 10%. Emissions such as THC 17% to 26% depressed, CO2 reduced by 5% to 8%, smoke opacity reduced by fifty-six to sixty-three percentage, NOx increased by eleven to twenty-two percentage over conventional diesel fuel. Buyukkaya et al. [12] concluded that by using rapeseed biodiesel blends there was a reduction in peak pressure by 55 bar, maximum HRR reduction by 14%, IDT (ignition delay time) found to be a

 DOI : 10.18231/2454-9150.2018.0989

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Journal Paper No -79

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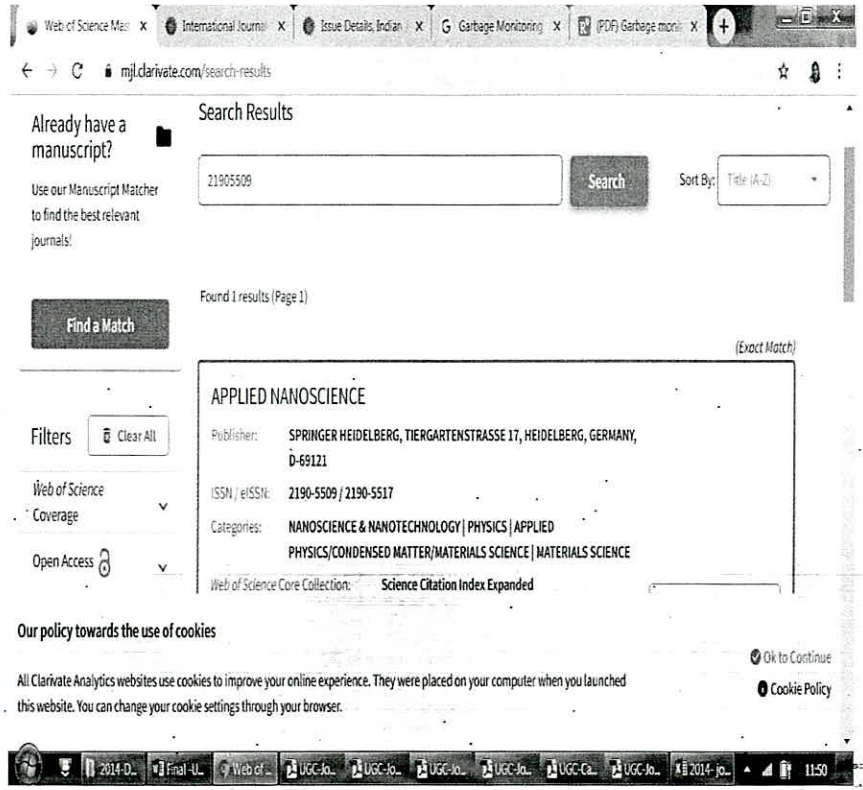
Accumulation of lead (Pb II) metal ions by Bacillus toyonensis SCE1 species, innate to industrial-area ground water and nanoparticle synthesis	Blessy Baby Mathew	BT	Applied nanoscience	Feb-19	21905509	Scopus



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Accumulation of lead (Pb II) metal ions by *Bacillus toyonensis* SCE1 species, innate to industrial-area ground water and nanoparticle synthesis

Applied Nanoscience

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- Vinni George Biju (2)
- Krishnamurthy Nideghatta Beeregowda (1)

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Original Article
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Abstract

Groundwater samples were collected from Peenya Industrial area of Bengaluru, India to check its inherent bacterial population. After the isolates were grown in lead-induced media, the bacteria that could resist lead were further isolated, identified, and grown. The isolated bacterium was identified as *Bacillus toyonensis* SCE1 species, and the maximum amount of lead taken up by it to sustain itself as a live biomass was 8 ppm. Lead accumulation was studied based on different factors such as pH; concentration, and time. Bacterial characterization through scanning electron microscopy showed there was lead sorption on the bacterial cells. Transmission electron microscopy revealed that accumulated lead ions inside the bacteria were in the range of 180–190 nm, this was found to correlate with the data obtained by the particle size analyzer. The optimum pH for highest lead accumulation was 7.2, for a time period of 160 min. It was observed that the stable production of homogenous nanoparticles using biomass could be achieved by optimizing factors such as incubation period, agitation, pH, temperature, and contact time.

Keywords

Bioaccumulation Lead toxicity *Bacillus toyonensis* Industrial ground water

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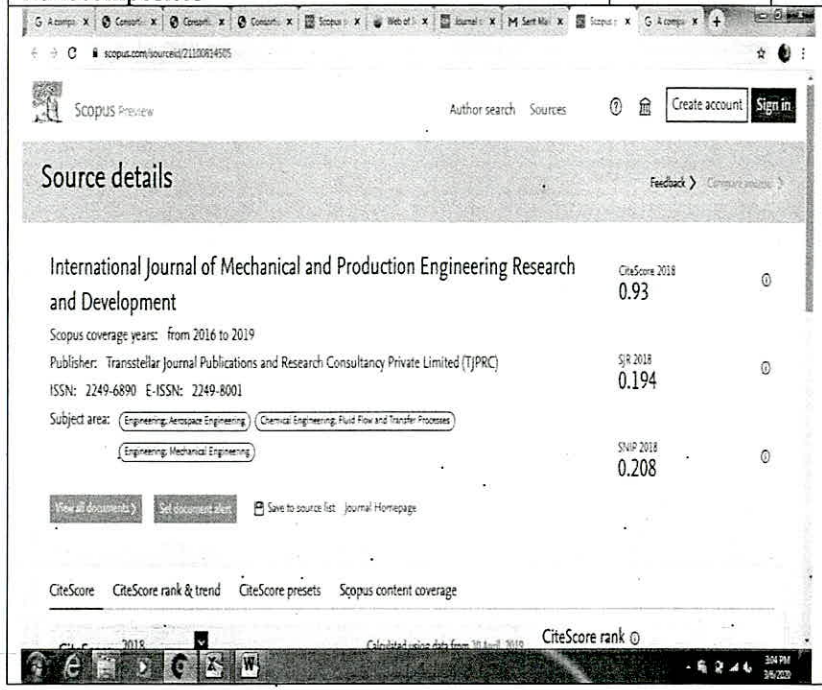
Journal Paper No -80

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
A comparative study on hardness and compressive properties of Nickel oxide Nanoparticles reinforced in epoxy based Nanocomposites	Basavaraju. S	ME	International Journal of Mechanical and Production Engineering Research and Development	Oct-18	2249-6890	Scopus



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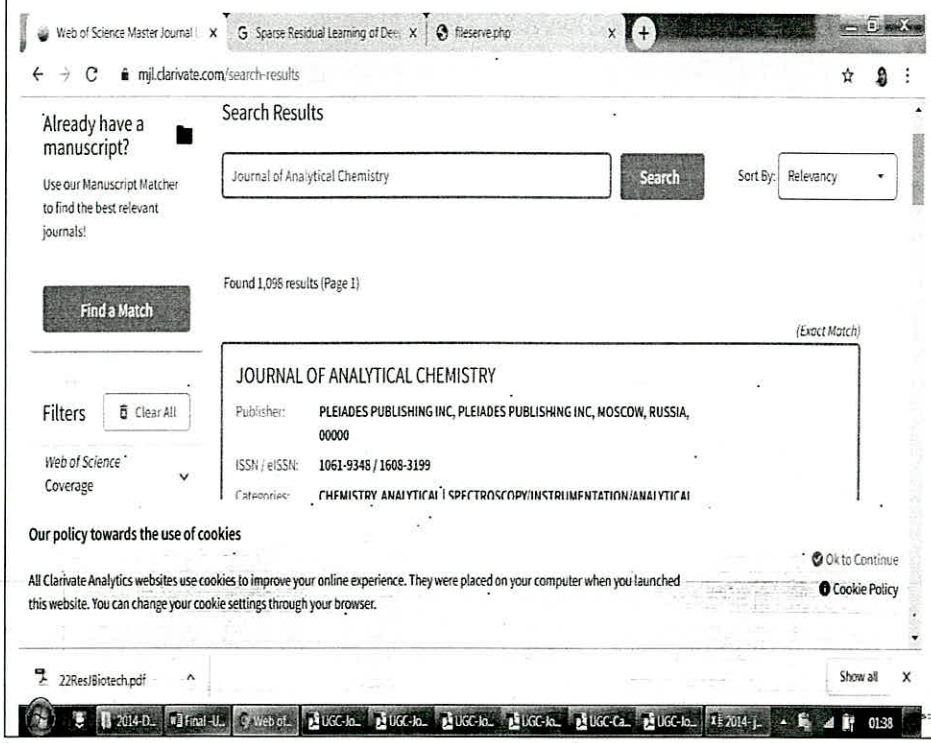
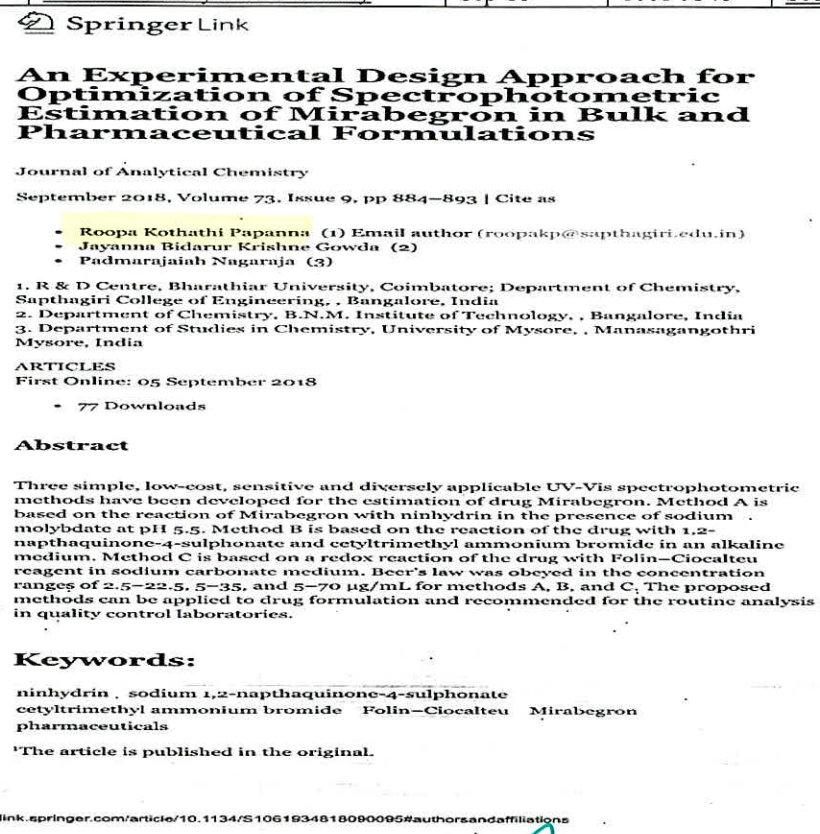
Journal Paper No -81

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
An experimental design approach for optimization of spectrophotometric estimation of Mirabegron in bulk and pharmaceutical formulations.	Roopa K. P	Chemistry	Journal of Analytical Chemistry	Sep-18	1061-9348	Scopus





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An Experimental Design Approach for Optimization of Spectrophotometric Estimation of Mirabegron in Bulk and Pharmaceutical Formulations

Journal of Analytical Chemistry

September 2018, Volume 73, Issue 9, pp 884–893 | Cite as

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Abstract

Three simple, low-cost, sensitive and diversely applicable UV-Vis spectrophotometric methods have been developed for the estimation of drug Mirabegron. Method A is based on the reaction of Mirabegron with ninhydrin in the presence of sodium molybdate at pH 5.5. Method B is based on the reaction of the drug with 1,2-napthaquinone-4-sulphonate and cetyltrimethyl ammonium bromide in an alkaline medium. Method C is based on a redox reaction of the drug with Folin–Ciocalteu reagent in sodium carbonate medium. Beer's law was obeyed in the concentration ranges of 2.5–22.5, 5–35, and 5–70 μg/mL for methods A, B, and C. The proposed methods can be applied to drug formulation and recommended for the routine analysis in quality control laboratories.

Keywords:

ninhydrin , sodium 1,2-napthaquinone-4-sulphonate cetyltrimethyl ammonium bromide Folin–Ciocalteu Mirabegron pharmaceuticals

[1]The article is published in the original.

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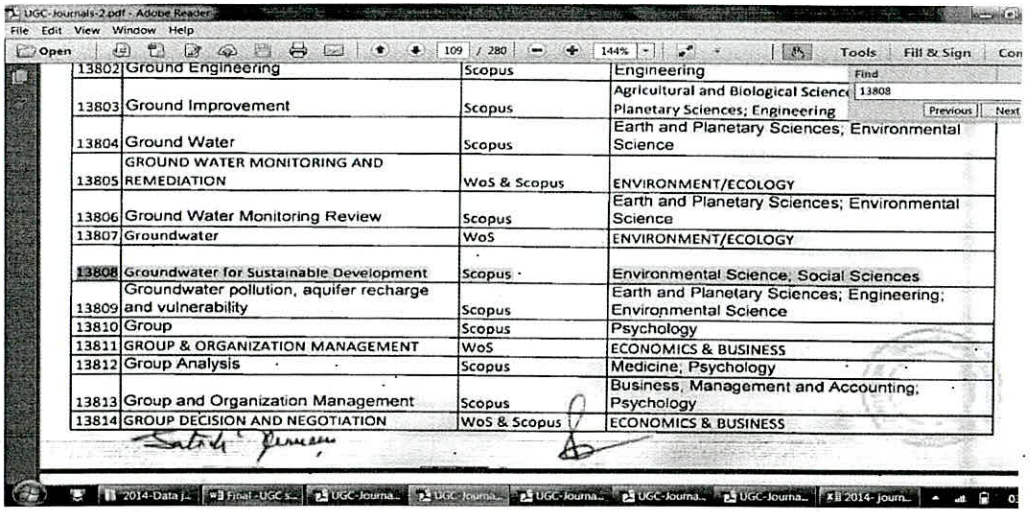
Journal Paper No -82

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Screening and identification of bacteria isolated from industrial area groundwater to study lead sorption: Kinetics and statistical optimization of biosorption parameters	Blessy Baby Mathew	BT	Groundwater for Sustainable Development	Sep-18	2352801X	Scopus



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Groundwater for Sustainable Development
Volume 7, September 2018, Pages 313-327

Research paper

Screening and identification of bacteria isolated from industrial area groundwater to study lead sorption: Kinetics and statistical optimization of biosorption parameters

Blessy Baby Mathew, Nideghatta Beeregowda Krishnamurthy

Department of Biotechnology, Sapthagiri College of Engineering, 14/5 Chikkasandra, Hesarghatta main road, Bangalore 560057, Karnataka, India

Received 10 February 2018, Revised 16 June 2018, Accepted 30 July 2018, Available online 8 August 2018.

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Highlights

- Bio-sorption is as a potential eco-friendly alternative to the conventional methods of contaminant treatment.
- FTIR analysis proposed that the H-, N-, and O functional groups present on the biomass are probably involved in lead sorption.
- The biosorption kinetics was investigated for the isolates and the results indicated that the biosorption charted pseudo-second order kinetic model.
- The intra-particle diffusion kinetic model provided good correlation of the experimental data, which means it influences the lead adsorption on the biomass.

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Journal Paper No -83

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Design Implementation and Analysis of non linear system based power quality using LabVIEW.	Nagaraja B S	EEE	International Journal of Scientific Research and Review	Apr-19	2279-543X	UGC Earlier-64650

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64653	Malaya Journal of Matematik	UNIV	Science	Malaya Journal of Matematik	23215666		Malaysia
64663	Journal of Water Research	UNIV	Science	Netherlands Publisher: Elsevier	00431356		Netherlands
64664	Journal of Current Science	UNIV	Science	Indian academy of Science	9726001X		India
64666	Indian Journal of Gynecologic Oncology	UNIV	Science	Springer	23638397		India
64667	karbala international journal of modern science	UNIV	Science	Elsevier	2405609X		Iraq
64669	Asia Pacific Language Variation	UNIV	Arts & Humanities	John Benjamins, New York/ Amsterdam	22151354		United States
64671	Global Journal of Business Research	UNIV	Social Science	Institute for Business and Finance Research, LLC.	19310277	21570191	United States
64673	Land	UNIV	Science	MDPI AG, Switzerland	2073445X		Switzerland
64677	Journal of South Asian Languages	UNIV	Arts & Humanities	De Gruyter Mouton USA	21960771		United States
64680	Journal of Language of Contact	UNIV	Arts & Humanities	Brill: Germany	18774091		Germany
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International Journal of Scientific Research and Review ISSN No.: 2279-543X
Volume 07, Issue 04, April 2019 UGC Journal No.: 64650

Design Implementation and Analysis of non linear system based power quality using LabVIEW.

Nandan N[1], A M Nagaraj[2], Nagaraja B S[3]

[1,2,3] Assistant Professor, Department of Electrical & Electronics Engineering, DSCE

Abstract:
In the present scenario the increasing existence of nonlinear loads and the increasing number of distributed generation power systems in electrical grids change the characteristics of voltage and current waveforms, which differ from pure sinusoidal wave. Poor power qualities affect functioning of utilities, different industrial units, productions, customer services and other system performance and operating costs. Monitoring of power quality is essential to maintain proper functioning of utilities, customer services and equipment's. The target here is to design measuring systems and display the system parameters under distorted system conditions. Harmonics are measured and displayed using LabVIEW. The voltage and current are sensed using sensors for various loads, which are then interfaced with the PC using DAQ (Data Acquisition) card and displayed using LabVIEW. The Hardware implementation includes setting up of test systems such as diode bridge rectifier and thyristor-based converter with various loads.

Key word: DAQ, LabVIEW, Power qualities, Harmonics.

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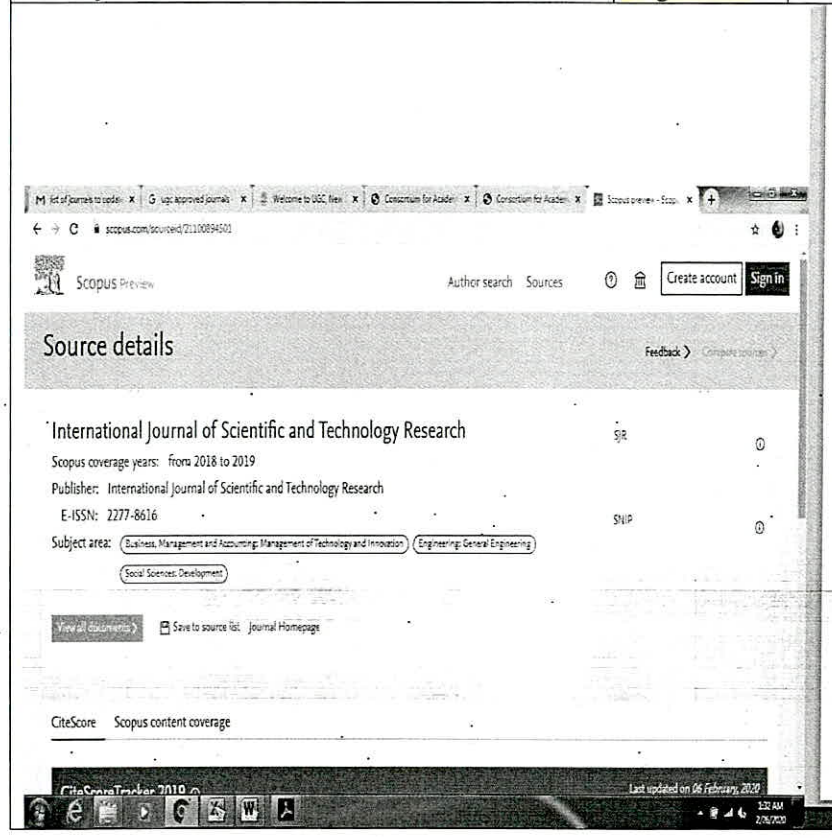
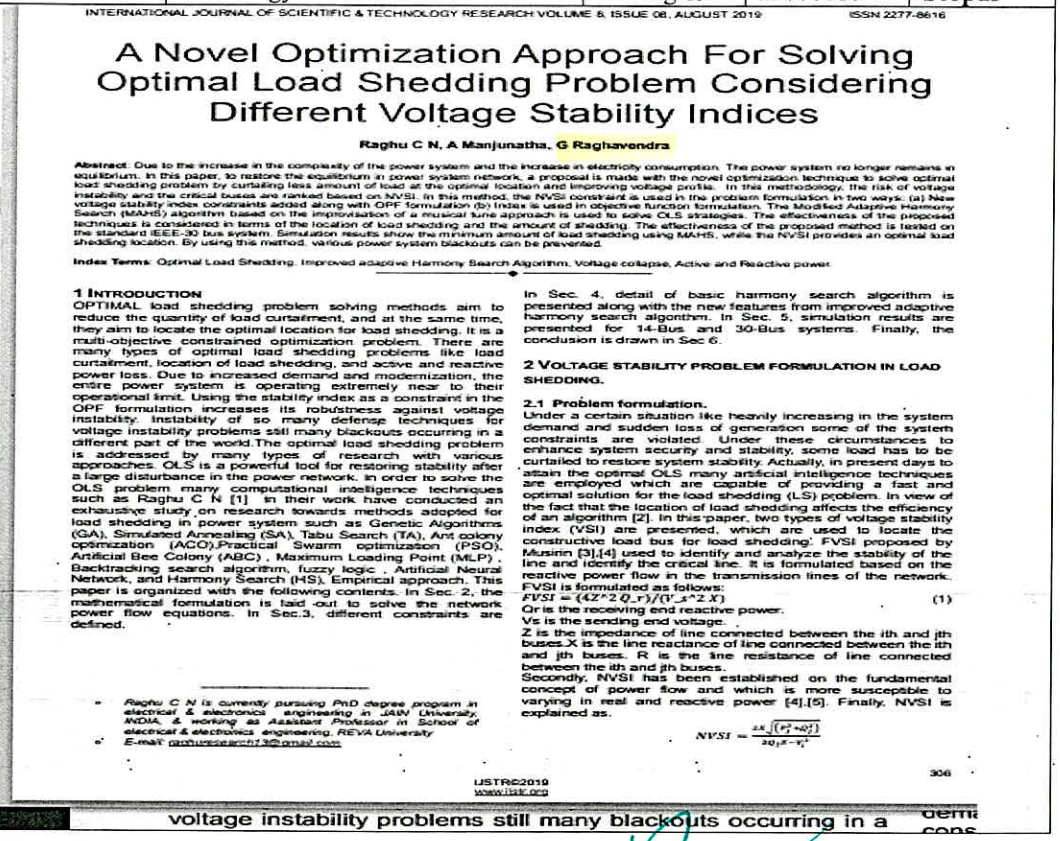
Journal Paper No -84

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
A novel optimization approach for solving optimal load shedding problem considering different voltage stability indices	Ragavendra	EEE	International journal of scentific and technology research	Aug-19	22778616	Scopus





INTERNATIONAL JOURNAL OF SCIENTIFIC & TECHNOLOGY RESEARCH VOLUME 8, ISSUE 08, AUGUST 2019 ISSN 2277-8616

A Novel Optimization Approach For Solving Optimal Load Shedding Problem Considering Different Voltage Stability Indices

Raghu C N, A Manjunatha, G Raghavendra

Abstract: Due to the increase in the complexity of the power system and the increase in electricity consumption. The power system no longer remains in equilibrium. In this paper, to restore the equilibrium in power system network, a proposal is made with the novel optimization technique to solve optimal load shedding problem by curtailing less amount of load at the optimal location and improving voltage profile. In this methodology, the risk of voltage instability and the critical buses are ranked based on NVSI. In this method, the NVSI constraint is used in the problem formulation in two ways: (a) New voltage stability index constraints added along with OPF formulation (b) Index is used in objective function formulation. The Modified Adaptive Harmony Search (MAHS) algorithm based on the implementation of a musical tune approach is used to solve OLS strategies. The effectiveness of the proposed techniques is considered in terms of the location of load shedding and the amount of shedding. The effectiveness of the proposed method is tested on the standard IEEE-30 bus system. Simulation results show the minimum amount of load shedding using MAHS, while the NVSI provides an optimal load shedding location. By using this method, various power system blackouts can be prevented.

Index Terms: Optimal Load Shedding, Improved adaptive Harmony Search Algorithm, Voltage collapse, Active and Reactive power.

1 Introduction

OPTIMAL load shedding problem solving methods aim to reduce the quantity of load curtailment, and at the same time, they aim to locate the optimal location for load shedding. It is a multi-objective constrained optimization problem. There are many types of optimal load shedding problems like load curtailment, location of load shedding, and active and reactive power loss. Due to increased demand and modernization, the entire power system is operating extremely near to their operational limit. Using the stability index as a constraint in the OPF formulation increases its robustness against voltage instability. Instability of so many defense techniques for voltage instability problems still many blackouts occurring in a different part of the world.The optimal load shedding problem is addressed by many types of research with various approaches. OLS is a powerful tool for restoring stability after a large disturbance in the power network. In order to solve the OLS problem many computational intelligence techniques such as Raghu C N [1] in their work have conducted an exhaustive study on research towards methods adopted for load shedding in power system such as Genetic Algorithms (GA), Simulated Annealing (SA), Tabu Search (TA), Ant colony optimization (ACO),Practical Swarm optimization (PSO), Artificial Bee Colony (ABC) , Maximum Loading Point (MLP) , Backtracking search algorithm, fuzzy logic , Artificial Neural Network, and Harmony Search (HS). Empirical approach. This paper is organized with the following contents. In Sec. 2, the mathematical formulation is laid out to solve the network power flow equations. In Sec.3, different constraints are defined.

In Sec. 4, detail of basic harmony search algorithm is presented along with the new features from improved adaptive harmony search algorithm. In Sec. 5, simulation results are presented for 14-Bus and 30-Bus systems. Finally, the conclusion is drawn in Sec 6.

2 Voltage stability problem formulation in load shedding.

2.1 Problem formulation.

Under a certain situation like heavily increasing in the system demand and sudden loss of generation some of the system constraints are violated. Under these circumstances to enhance system security and stability, some load has to be curtailed to restore system stability. Actually, in present days to attain the optimal OLS many artificial intelligence techniques are employed which are capable of providing a fast and optimal solution for the load shedding (LS) problem. In view of the fact that the location of load shedding affects the efficiency of an algorithm [2]. In this paper, two types of voltage stability index (VSI) are presented, which are used to locate the constructive load bus for load shedding. FVSI proposed by Musirin [3],[4] used to identify and analyze the stability of the line and identify the critical line. It is formulated based on the reactive power flow in the transmission lines of the network. FVSI is formulated as follows:

$$FVSI = \frac{4Z^2 Q_r}{V_s^2 X} \quad (1)$$

Qr is the receiving end reactive power.
Vs is the sending end voltage.
Z is the impedance of line connected between the ith and jth buses.X is the line reactance of line connected between the ith and jth buses. R is the line resistance of line connected between the ith and jth buses.
Secondly, NVSI has been established on the fundamental concept of power flow and which is more susceptible to varying in real and reactive power [4],[5]. Finally, NVSI is explained as.

$$NVSI = \frac{2X\sqrt{(P_j^2+Q_j^2)}}{V_j^2 - Y^2}$$

- Raghu C N is currently pursuing PhD degree program in electrical & electronics engineering in JAIN University, INDIA, & working as Assistant Professor in School of elecrical & electronics engineering, REVA University
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voltage instability problems still many blackouts occurring in a

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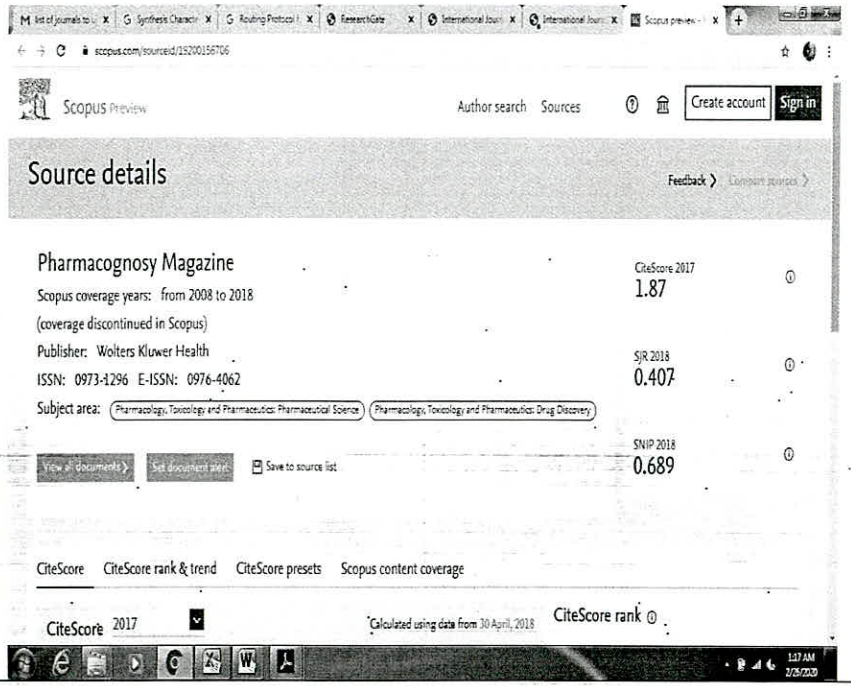
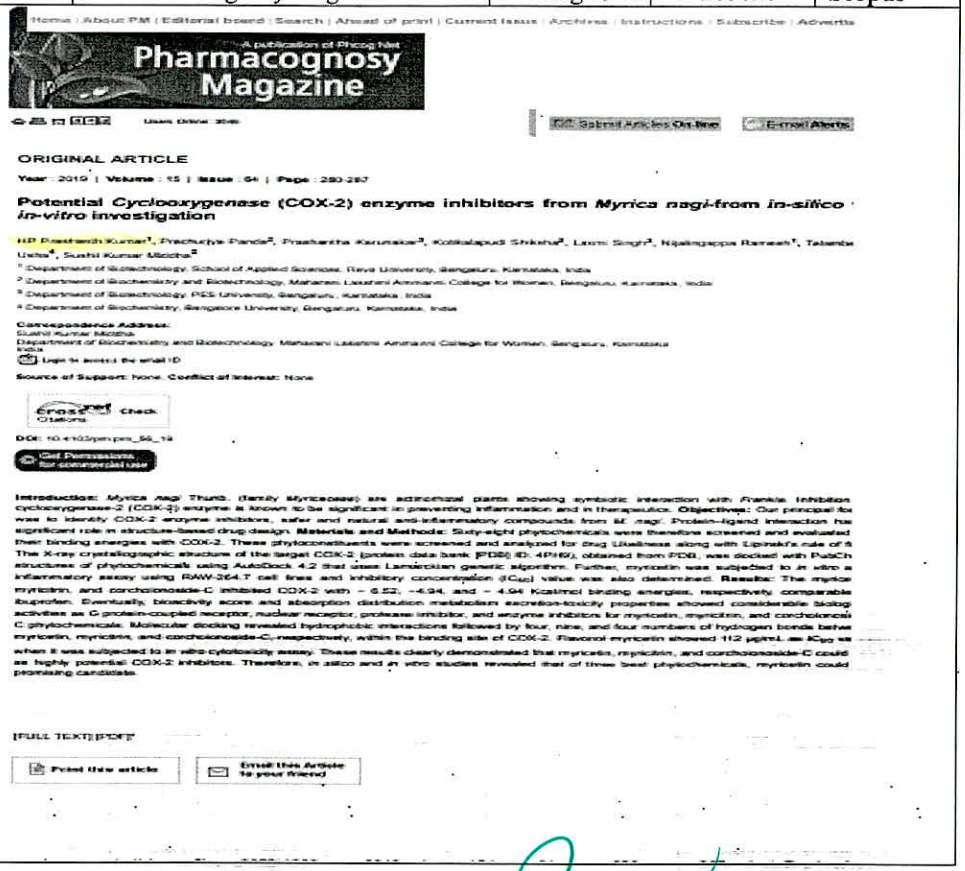
Journal Paper No -85

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Potential cyclooxygenase enzyme inhibitors from Mycrica nagi from in-silico to in-vitro investigation	Prashanth Kumar HP	BT	Pharmacognosy Magazine	Aug-19	265020	Scopus





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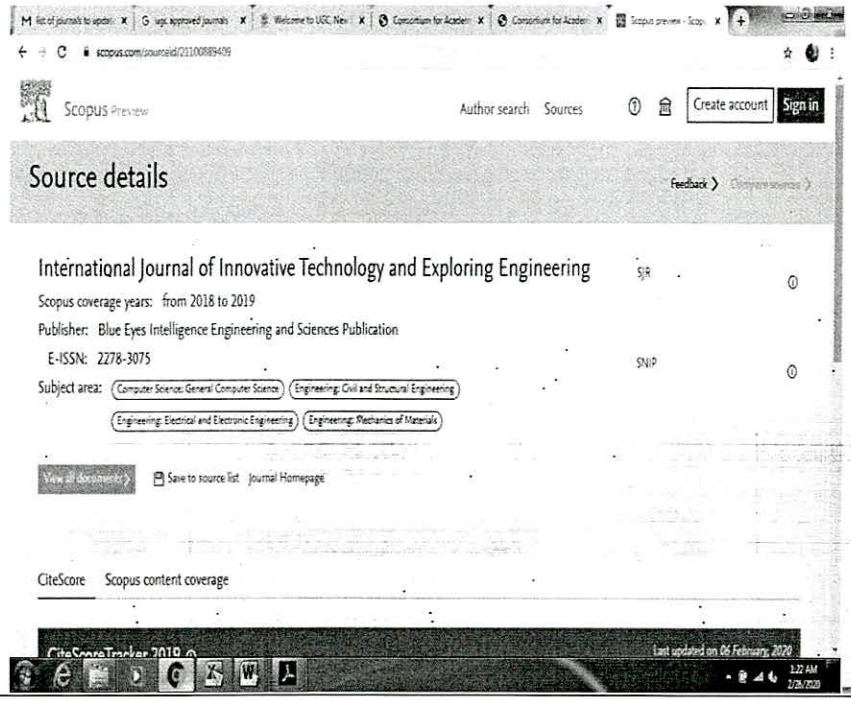
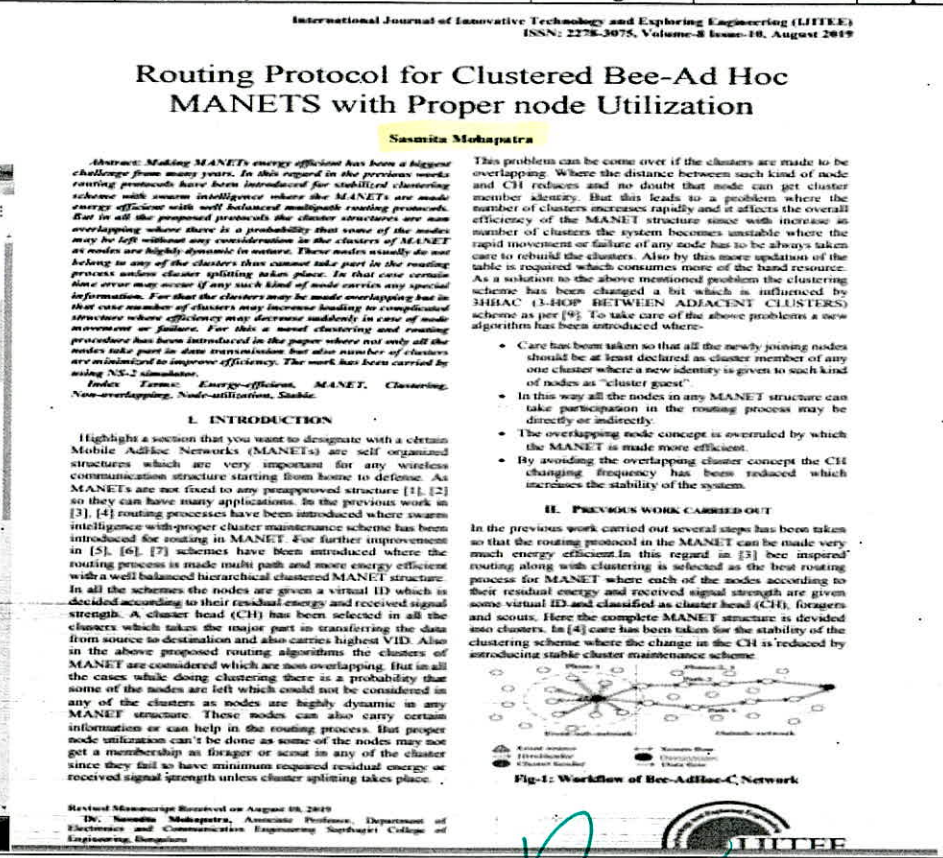
Journal Paper No -86

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Routing Protocol for Clustered Bee-Ad Hoc MANETS with Proper node Utilization	Sasmita Mohapatra	EC	International Journal of Innovative Technology and Exploring Engineering	Aug-19	22783075	Scopus





International Journal of Innovative Technology and Exploring Engineering (IJITEE)
ISSN: 2278-3075, Volume-8 Issue-10, August 2019

Routing Protocol for Clustered Bee-Ad Hoc MANETS with Proper node Utilization

Sasmita Mohapatra

Abstract: *Making MANETs energy efficient has been a biggest challenge from many years. In this regard in the previous works routing protocols have been introduced for stabilized clustering scheme with swarm intelligence where the MANETs are made energy efficient with well balanced multipath routing protocols. But in all the proposed protocols the cluster structures are non overlapping where there is a probability that some of the nodes may be left without any consideration in the clusters of MANET as nodes are highly dynamic in nature. These nodes usually do not belong to any of the clusters thus cannot take part in the routing process unless cluster splitting takes place. In that case certain data error may occur if any such kind of node carries any special information. For that the clusters may be made overlapping but in that case number of clusters may increase leading to complicated structure where efficiency may decrease suddenly in case of node movement or failure. For this a novel clustering and routing procedure has been introduced in the paper where not only all the nodes take part in data transmission but also number of clusters are minimized to improve efficiency. The work has been carried by using NS-2 simulator.*

Index Terms: *Energy-efficient, MANET, Clustering, Non-overlapping, Node-utilization, Stable.*

I. INTRODUCTION

Highlight a section that you want to designate with a certain Mobile Adhoc Networks (MANETs) are self organized structures which are very important for any wireless communication structure starting from home to defense. As MANETs are not fixed to any preapproved structure [1], [2] so they can have many applications. In the previous work in [3], [4] routing processes have been introduced where swarm intelligence with proper cluster maintenance scheme has been introduced for routing in MANET. For further improvement in [5], [6], [7] schemes have been introduced where the routing process is made multi path and more energy efficient with a well balanced hierarchical clustered MANET structure. In all the schemes the nodes are given a virtual ID which is decided according to their residual energy and received signal strength. A cluster head (CH) has been selected in all the clusters which takes the major part in transferring the data from source to destination and also carries highest VID. Also in the above proposed routing algorithms the clusters of MANET are considered which are non overlapping. But in all the cases while doing clustering there is a probability that some of the nodes are left which could not be considered in any of the clusters as nodes are highly dynamic in any MANET structure. These nodes can also carry certain information or can help in the routing process. But proper node utilization can't be done as some of the nodes may not get a membership as forager or scout in any of the cluster since they fail to have minimum required residual energy or received signal strength unless cluster splitting takes place.

This problem can be come over if the clusters are made to be overlapping. Where the distance between such kind of node and CH reduces and no doubt that node can get cluster member identity. But this leads to a problem where the number of clusters increases rapidly and it affects the overall efficiency of the MANET structure since with increase in number of clusters the system becomes unstable where the rapid movement or failure of any node has to be always taken care to rebuild the clusters. Also by this more updation of the table is required which consumes more of the band resource. As a solution to the above mentioned problem the clustering scheme has been changed a bit which is influenced by 3HHAC (3-HOP BETWEEN ADJACENT CLUSTERS) scheme as per [9]. To take care of the above problems a new algorithm has been introduced where-

- Care has been taken so that all the newly joining nodes should be at least declared as cluster member of any one cluster where a new identity is given to such kind of nodes as "cluster guest"
- In this way all the nodes in any MANET structure can take participation in the routing process may be directly or indirectly.
- The overlapping node concept is overruled by which the MANET is made more efficient.
- By avoiding the overlapping cluster concept the CH changing frequency has been reduced which increases the stability of the system.

II. PREVIOUS WORK CARRIED OUT

In the previous work carried out several steps has been taken so that the routing protocol in the MANET can be made very much energy efficient.In this regard in [3] bee inspired routing along with clustering is selected as the best routing process for MANET where each of the nodes according to their residual energy and received signal strength are given some virtual ID and classified as cluster head (CH), foragers and scouts. Here the complete MANET structure is devided into clusters. In [4] care has been taken for the stability of the clustering scheme where the change in the CH is reduced by introducing stable cluster maintenance scheme.

Fig-1: Workflow of Bee-Adhoc-C Network

Revised Manuscript Received on August 08, 2019

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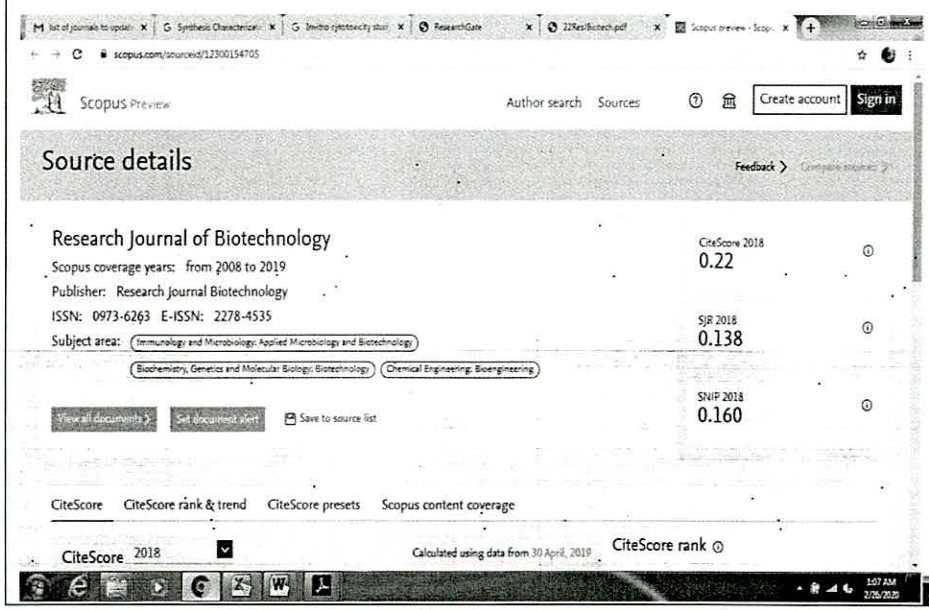
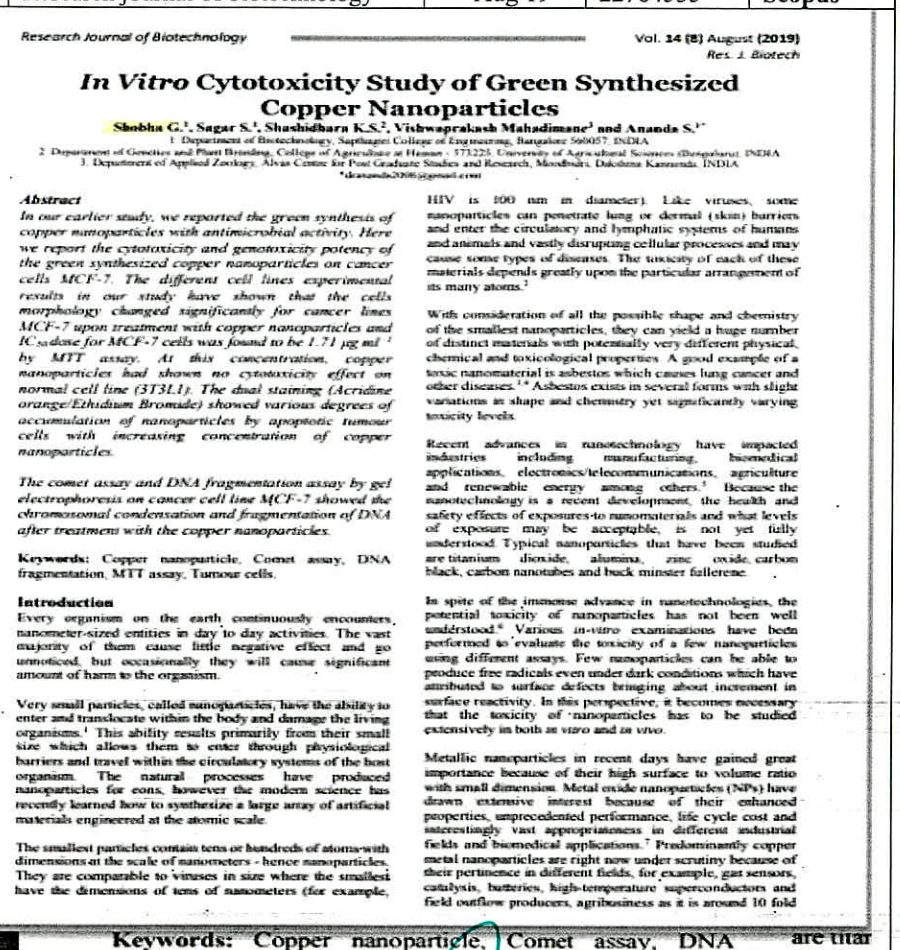
Journal Paper No -87

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Invitro cytotoxicity study of green synthesized copper nanoparticles	Shobha G	BT	Research journal of biotechnology	Aug-19	22784535	Scopus





Research Journal of Biotechnology Vol. 14 (8) August (2019)
Res. J. Biotech

In Vitro Cytotoxicity Study of Green Synthesized Copper Nanoparticles

Shobha G.[1], Sagar S.[1], Shashidhara K.S.[2], Vishwaprakash Mahadimane[3] and Ananda S.[1]*

1. Department of Biotechnology, Sapthagiri College of Engineering, Bangalore 560057, INDIA
2. Department of Genetics and Plant Breeding, College of Agriculture at Hassan - 573225, University of Agricultural Sciences (Bangalore), INDIA
3. Department of Applied Zoology, Alvas Centre for Post Graduate Studies and Research, Moodbidri, Dakshina Kannada, INDIA

Abstract

In our earlier study, we reported the green synthesis of copper nanoparticles with antimicrobial activity. Here we report the cytotoxicity and genotoxicity potency of the green synthesized copper nanoparticles on cancer cells MCF-7. The different cell lines experimental results in our study have shown that the cells morphology changed significantly for cancer lines MCF-7 upon treatment with copper nanoparticles and IC_{50}dose for MCF-7 cells was found to be 1.71 µg ml^{-1} by MTT assay. At this concentration, copper nanoparticles had shown no cytotoxicity effect on normal cell line (3T3L1). The dual staining (Acridine orange/Ethidium Bromide) showed various degrees of accumulation of nanoparticles by apoptotic tumour cells with increasing concentration of copper nanoparticles.

The comet assay and DNA fragmentation assay by gel electrophoresis on cancer cell line MCF-7 showed the chromosomal condensation and fragmentation of DNA after treatment with the copper nanoparticles.

Keywords: Copper nanoparticle, Comet assay, DNA fragmentation, MTT assay, Tumour cells.

Introduction

Every organism on the earth continuously encounters nanometer-sized entities in day to day activities. The vast majority of them cause little negative effect and go unnoticed, but occasionally they will cause significant amount of harm to the organism.

Very small particles, called nanoparticles, have the ability to enter and translocate within the body and damage the living organisms.[1] This ability results primarily from their small size which allows them to enter through physiological barriers and travel within the circulatory systems of the host organism. The natural processes have produced nanoparticles for eons, however the modern science has recently learned how to synthesize a large array of artificial materials engineered at the atomic scale.

The smallest particles contain tens or hundreds of atoms with dimensions at the scale of nanometers - hence nanoparticles. They are comparable to viruses in size where the smallest have the dimensions of tens of nanometers (for example, HIV is 100 nm in diameter). Like viruses, some nanoparticles can penetrate lung or dermal (skin) barriers and enter the circulatory and lymphatic systems of humans and animals and vastly disrupting cellular processes and may cause some types of diseases. The toxicity of each of these materials depends greatly upon the particular arrangement of its many atoms.[2]

With consideration of all the possible shape and chemistry of the smallest nanoparticles, they can yield a huge number of distinct materials with potentially very different physical, chemical and toxicological properties. A good example of a toxic nanomaterial is asbestos which causes lung cancer and other diseases.[3,4] Asbestos exists in several forms with slight variations in shape and chemistry yet significantly varying toxicity levels.

Recent advances in nanotechnology have impacted industries including manufacturing, biomedical applications, electronics/telecommunications, agriculture and renewable energy among others.[5] Because the nanotechnology is a recent development, the health and safety effects of exposures to nanomaterials and what levels of exposure may be acceptable, is not yet fully understood. Typical nanoparticles that have been studied are titanium dioxide, alumina, zinc oxide, carbon black, carbon nanotubes and buck minster fullerene.

In spite of the immense advance in nanotechnologies, the potential toxicity of nanoparticles has not been well understood.[6] Various *in-vitro* examinations have been performed to evaluate the toxicity of a few nanoparticles using different assays. Few nanoparticles can be able to produce free radicals even under dark conditions which have attributed to surface defects bringing about increment in surface reactivity. In this perspective, it becomes necessary that the toxicity of nanoparticles has to be studied extensively in both *in vitro* and *in vivo*.

Metallic nanoparticles in recent days have gained great importance because of their high surface to volume ratio with small dimension. Metal oxide nanoparticles (NPs) have drawn extensive interest because of their enhanced properties, unprecedented performance, life cycle cost and interestingly vast appropriateness in different industrial fields and biomedical applications.[7] Predominantly copper metal nanoparticles are right now under scrutiny because of their pertinence in different fields, for example, gas sensors, catalysis, batteries, high-temperature superconductors and field outflow producers, agribusiness as it is around 10 fold

Keywords: Copper nanoparticle, Comet assay, DNA

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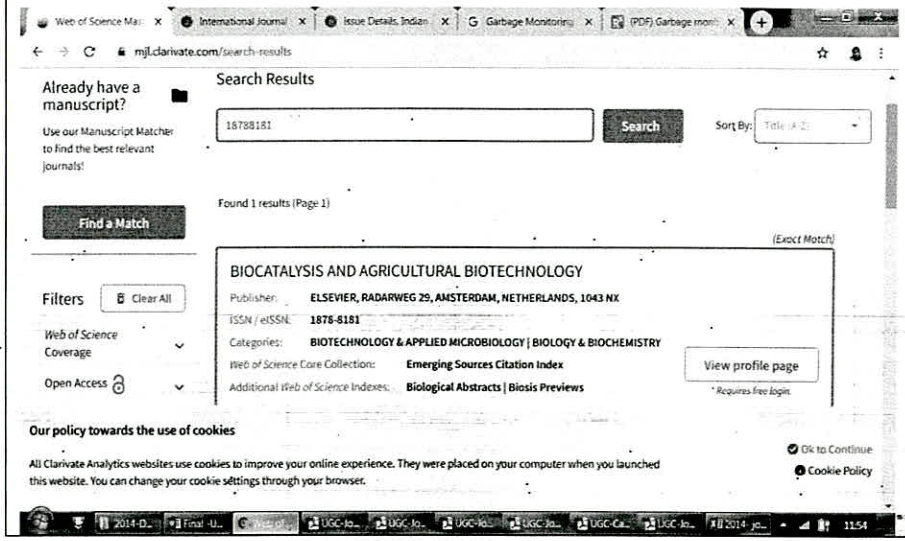
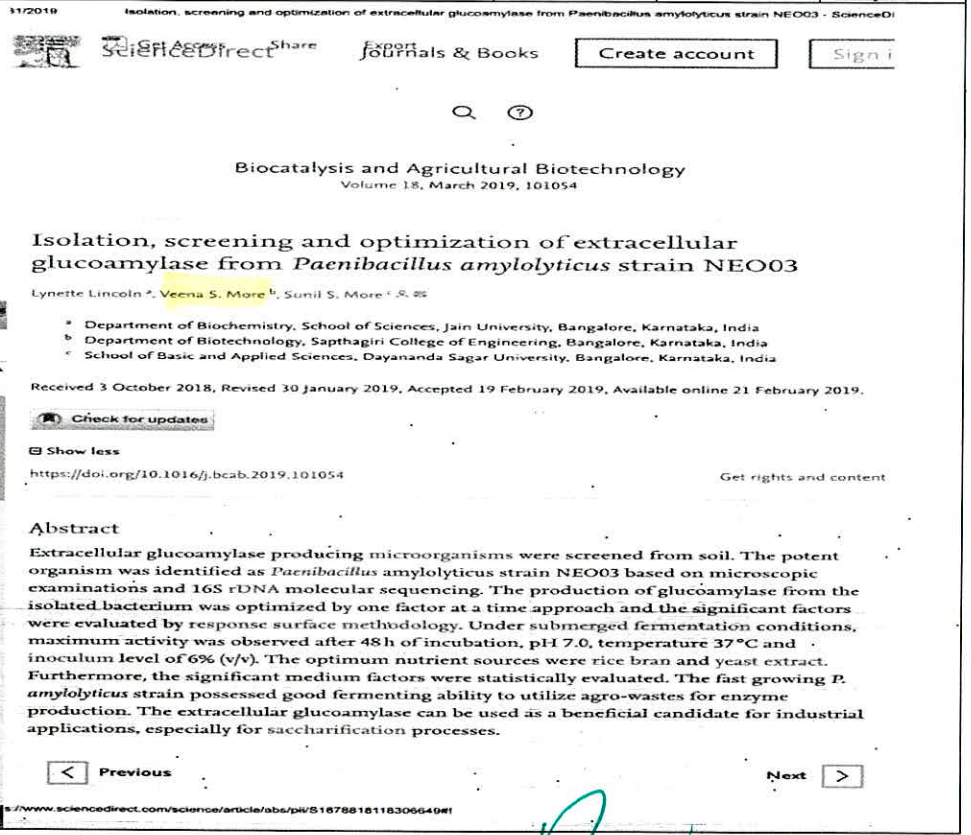
Journal Paper No -88

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Isolation, screening and optimization of extracellular glucoamylase from Paenibacillus amylolyticus strain NEO03	Veena More	BT	Biocatalysis and Agricultural Biotechnology	Feb-19	18788181	Scopus





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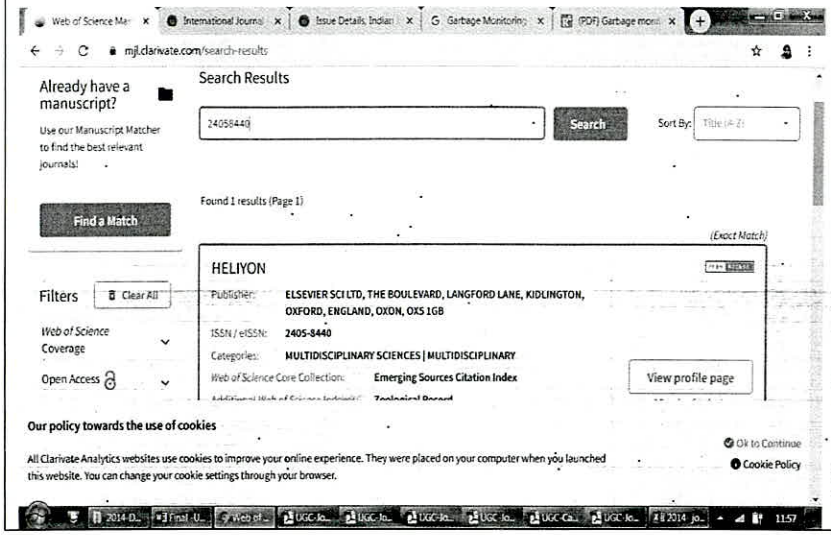
Journal Paper No -89

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Bungarus caeruleus venom neutralization activity of azima tetracantha lam. extract	Veena S More	BT	Heliyon	Jul-19	24058440	Scopus



Heliyon 5 (2019) e02163

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Bungarus caeruleus venom neutralization activity of *Azima tetracantha* Lam. Extract

Bhavya Janardhan [a], Vineetha M. Shrikanth [a], Veena S. More [b], Govindappa Melappa [c], Farhan Zameer [d], Sunil S. More [d,*]

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ARTICLE INFO

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ABSTRACT

Azima tetracantha Lam. is native to Africa and India. The plant and its parts are used for treating various ailments including snake bites. The different concentrations of ethyl acetate leaf extract of *A. tetracantha* were used to neutralize the toxic effect of venom through dose dependent enzyme studies and *in vivo* studies. The extract was able to neutralize the 5' nucleotidase, phospholipase A_2, Phosphodiesterae, phosphomonoesterase, acetylcholinesterase and hyaluronidase in a dose dependent manner with concentrations ranging from 43.98 –340.1 μg/mL of extract. The extract could retain the lysis of fibrinogen at the concentration of 1:10 (venom: extract, w/w) and also the lysis of lecithin was reduced at a concentration of 1:25 (venom: extract, w/w). The extract was able to neutralize the LD_{50} of venom in both mice and embryo and also reduce the myotoxic and edema properties of the venom in mice models. The venom did not show any procoagulant and hemorrhagic effect. The leaf extract possess adequate compounds/phytochemicals that could neutralize the toxic properties/activity of the *B. caeruleus* venom.

1. Introduction

Snakebite envenoming is a global public health problem that deserves far more attention from national and regional health authorities than it has been given up until now. The agricultural workers and their family are the most affected by this environmental and occupational disease in some of the rural areas of developing countries in Africa, Asia, Latin America and Oceania [1]. It affects the poor and low-income population of the tropical countries [2]. Antiserum, the only effective therapeutic treatment available and is derived from animal immunoglobulins. The production of antivenom is time consuming, expensive and often is associated with side effects [3]. Numerous plant species are used as folk medicine in many parts of the world where venomous snakes occur. Plant species or their extracts are either used as decoctions or applied directly to the bite area.

Many studies have been carried out to prove the effectiveness of plants and their plant constituents on snake venom neutralization. Aristolochic acid from *Aristolochia radix* was reported to inhibit the enzymatic and pharmacological activities of PLA_2 induced by *Vipera russelli* venom [4, 5]. Antihyaluronidase activity was reported with *Mimosa pudica* against *Naja naja*, *Vipera russelii* and *Echis carinatus* venoms [6]. Lupeol acetate from roots of *Hemidesmus indicus* significantly neutralized PLA_2 activity induced by Russell's viper [7]. Inhibition of enzymatic activity has been reported with extracts of *Casearia sylvestris* in experimental animals, injected with lethal doses of Bothropic venoms [8]. The *Rauvolfia serpentina aqueous* plant extract neutralized the *in vitro* activities namely procoagulant, direct and indirect haemolytic activities of *Daboia russelli* venom [9]. The *Ophiorrhiza mungos* aqueous root extract neutralized the *Vipera russelli* venom induced lethality and hemorrhage in fertile Chick Embryos [10].

Azima tetracantha Lam. (Family: Salvadoraceae) locally known as "*Mulsangi*", is a spinous shrub flowering throughout the year found in Peninsular India, West Bengal, Orissa, African Countries and extends through Arabia to tropical Asia. The common names of the plant are Uppimullu, Mulchangan, Needle bush, Yasanku and Kundali in Ayurvedic medicine. In East Africa the powdered roots of *Azima tetracantha* Lam. are applied directly to snake bites and an infusion is taken orally as a treatment. In India and Sri Lanka the root, root bark and leaves are added

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Journal Paper No -90

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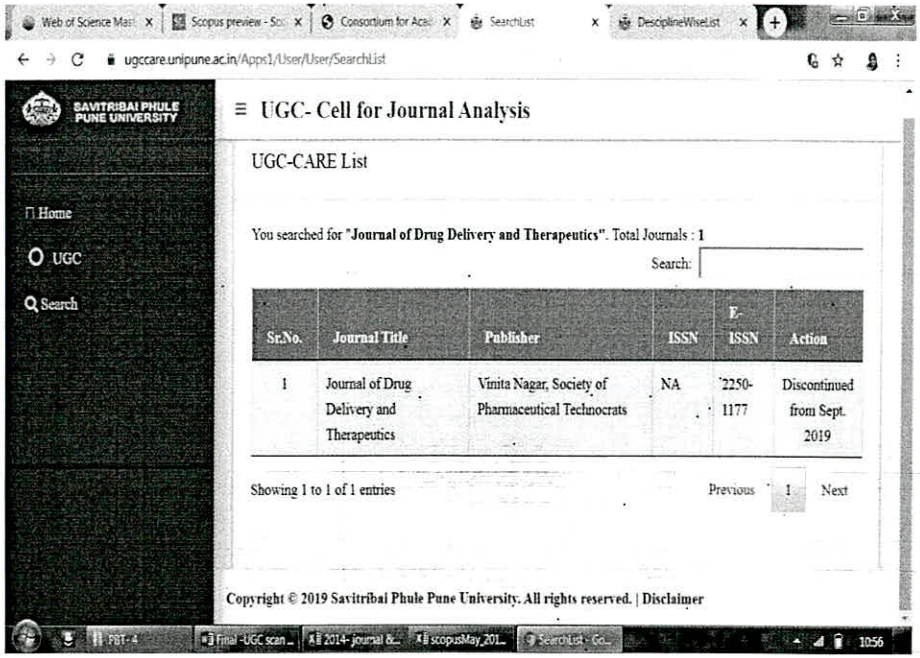
Assessment of pathogenicity in helminthosporium maydis causing southern corn leaf blight disease in the region of karnataka	Sowmya C	BT	Journal of Drug Delivery and Therapeutics	Jul-19	2250177	UGC CARE



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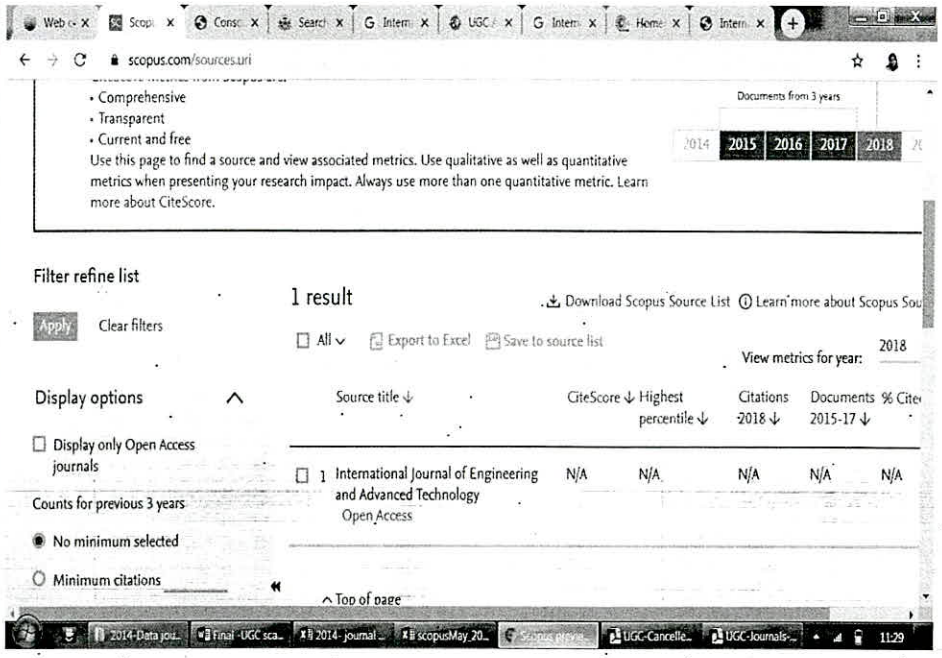
Journal Paper No -91

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
A penalty based self-adaptive harmony search algorithm for optimal load shedding	Raghavendra G	EEE	International journal of engineering and advanced technology	Jun-19	22498958	Scopus



International Journal of Engineering and Advanced Technology (IJEAT)
ISSN: 2249-8958, Volume-8 Issue-5, June 2019

A Penalty based Self Adaptive Harmony Search Algorithm for Optimal Load Shedding

Raghu C N, A. Manjunatha, G Raghavendra

Abstract: In this paper, a novel method is introduced to avoid the blackout of a power system when there is a loss of generation. A new load shed scheme is introduced with the priority based choice to decide the amount of load to be shed at each bus in the system. The priorities are assigned based on the voltage drop after the generation loss. The priority assigned, an improved self adaptive harmony search algorithm (IS4HS) is triggered to determine the optimal amounts of the load to be shed. The MATPOWER solver is used to solve the power flow equation. The simulations are conducted and the performance of the proposed method is analyzed on IEEE-14. In IEEE-14 bus system total active and reactive power shedding is 193.47MW and 51.89MVAR respectively which are less than the existing methods. The amount of load shedding obtained using proposed method gives better results compared to the existing. The range of bus voltage swing achieved in IEEE-14 is 1.01pu to 1.062pu. The active and reactive power supplied before and after the generation loss, is compared for each case. The losses incurred in the bus system are also computed. The improvement in the bus voltages is presented after designing the new load using IS4HS. The results obtained with proposed method are compared with the three existing methods. Convergence characteristics also show the efficiency of the proposed method.

Index Terms: Optimal Load Shedding, Improved adaptive Harmony Search Algorithm, Voltage collapse, Active and Reactive power.

I. INTRODUCTION

Power system security is one of the important factors to be maintained during the bperation of a network. It is ability of the system to operate within the limits without actually reaching the state of emergency. However, in the actual scenario, it is not possible to operate within the limit always as there will be certain situations where there may be loss of generation, increase in load demand. In such a situation, the system constraints are violated, and the system goes out of the operational limits. During this disturbance to bring the system back into the stable state, there has to be the mechanism to adjust the factors driving the security of the network. Generally, the networks are equipped with the mechanism to deal with such contingency situations or disturbances to control the security and stability of the system. But it is not always possible to achieve this with the built-in mechanism and it may lead to cascaded tripping and the complete blackout in the system. In the view of avoiding complete black out , optimal load shedding is used as the last option and may be considered as the emergency option. Load shedding involves removal or reduction of certain amount of load from the connected load so that power system returns to the balanced stable state. The key aim of optimal load shedding is to curtail or reduction of the load in such a way that difference between the supplied active(real) and reactive power and connected active(real) and reactive power is reduced.When formulating the network behaviour with a mathematical model, the active and reactive powers are modelled as the dependent variables. These dependent variables are expressed as a function of the bus voltage. Basically, the load shedding scheme is categorized into Under frequency Load shedding (UFLS) and Under voltage load shedding (UVLS). When the power system experiences the generator loss or contingency issues, the voltages and frequencies in the busses drop. The new loads that are required to be adjusted to bring the power system back into the balanced state can be designed by measuring the voltage drop or frequency drop. The load shedding mechanism is triggered in a power system when the bus voltages or the frequencies fall below certain threshold values.

Raghu (2017) in their work have conducted an exhaustive study on research towards methods adopted for load shedding in power system such as Genetic Algorithms (GA), Simulated Annealing (SA), Tabu Search (TA), Ant colony optimization (ACO), Artificial Neural, Practical Swarm optimization (PSO), Artificial Bee Colony (ABC) , Maximum Loading Point (MLP) , Backtracking search algorithm, fuzzy logic , Artificial Neural Network, Shuffled frog leaping algorithm (SFLA) and Harmony Search (HS), Empirical approach. In this paper, ISAHS is implemented in order to achieve the optimal load shedding.

In 2001 Geem first implemented Harmony Search algorithm [2]. HS is similar to the PSO in the sense that it also focuses on the music improvisation process. A musician generates a tone and if the tone generated is better than the previous one, then it is stored. During the Jazz improvisation in way the musician keeps on searching for the better state of harmony in finding the best musically, pleasing harmony, which is considered as a perfect state. This is almost like to obtaining the global solution that satisfies the objective function. The artistic quality is determined by the pitch of every musical instrument similarly as like objective function is estimated by a set of design values of active and reactive load . Advantage of using HS over other heuristic algorithms is as follows [3]: There is no inevitability to initialize the values for the decision variables. The mathematical formulation is simple, and it uses stochastic searches. There are no computations of derivatives in the search algorithm. Compared to GA, which generates a new vector considering only two parent vectors, HS considers all the existing vectors. HS produces the solutions much faster than other heuristic algorithms as this is very key to prevent the back

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Journal Paper No -92

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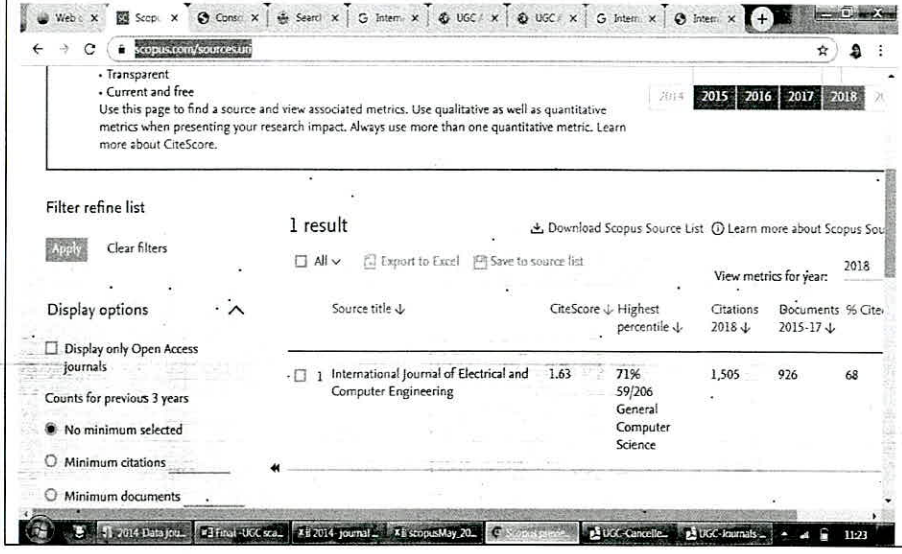
Relevance vector machine based facult classification in wind energy conversion system	Rekha SN	EEE	International Journal of Electrical and Computer Engineering	Jun-19	20888708	Scopus



International Journal of Electrical and Computer Engineering (IJECE)
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Relevance vector machine based fault classification in wind energy conversion system

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System
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ABSTRACT

This Paper is an attempt to develop the multiclass classification in the Benchmark fault model applied on wind energy conversion system using the relevance vector machine (RVM). The RVM could apply a structural risk minimization by introducing a proper kernel for training and testing. The Gaussian Kernel is used for this purpose. The classification of sensor, process and actuators faults are observed and classified in the implementation. Training different fault condition and testing is carried out using the RVM implementation carried out using Matlab on the Wind Energy Conversion System (WECS). The training time becomes important while the training is carried out in a bigger WECS, and the hardware feasibility is prime while the testing is carried out on an online fault detection scenario. Matlab based implementation is carried out on the benchmark model for the fault detection in the WECS. The results are compared with the previously implemented fault detection technique and found to be performing better in terms of training time and hardware feasibility.

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1. INTRODUCTION

The fault detection in the WECS is an important aspect in the working of the wind power generation system, as the faults occurring in the system would increase the maintenance cost. Development of the overall fault detection including the turbine, generator, converter, pitch and the drive train becomes important considering the cost involved in the maintenance of the WECS. The benchmark model wind turbine for fault identification, which includes the sensor, process and actuator fault condition, is developed [1]. A 4.8 MW WECS model is developed in order to observe the faults in the system. SVM based fault detection is carried out in Wind turbines and compared with the ANN for the accuracy, training and tuning times [2]. The linear SVM performed better in comparison with the ANN. The classification using RVM performed better than the SVM while the training time is said to be higher [3]. Wind generator bearing fault are sensed by the sound and vibration in the tower using empirical mode decomposition method [4]. A nine turbine based wind farm challenge to detect the wind turbine faults in the individual turbine are carried out [5]. A state estimation set membership approach based implementation is found in fault detection of benchmark model with noise [6]. A multi-objective optimization framework for large scale wind turbine system is developed using the H_- / H_- observer to detect the sensor and actuator fault [7]. Especially fault detection is a classification between two classes; normal state or fault and for the classification, support vector machine (SVM) is a useful machine learning method [7], [8], [9] and applications to fault detections are reported [10].

This paper takes up the implementation from the benchmark model and implement the RVM on the benchmark model for the wind fault identification problem. The overall faults like the sensor, process and

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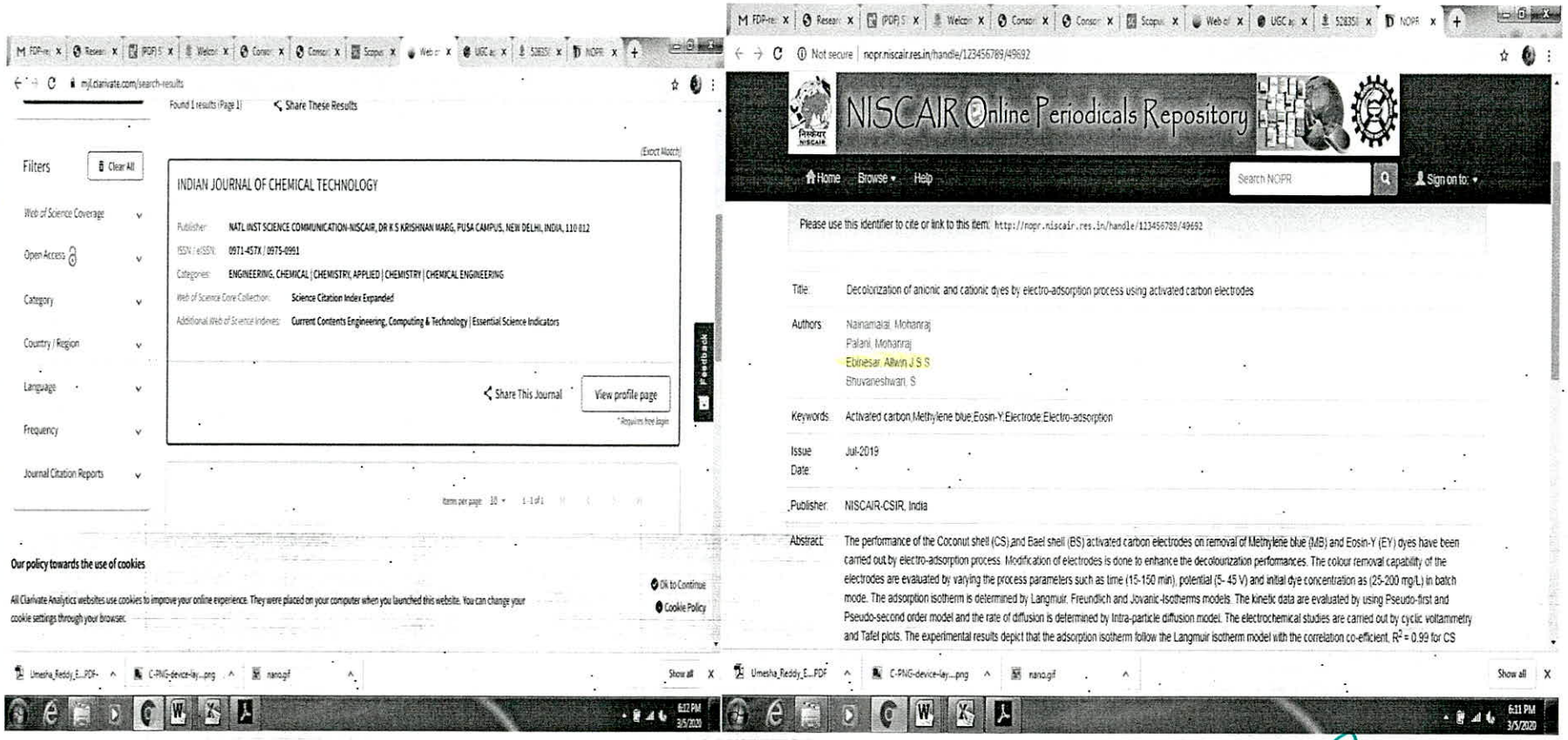
Journal Paper No -93

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
De-colorization of anionic and cationic dyes by electro-adsorption process using activated carbon electrodes	ISS Allwin Ebinesar	BT	Indian Journal of Chemical Technology	Jul-19	0975-0991	UGC-WOS



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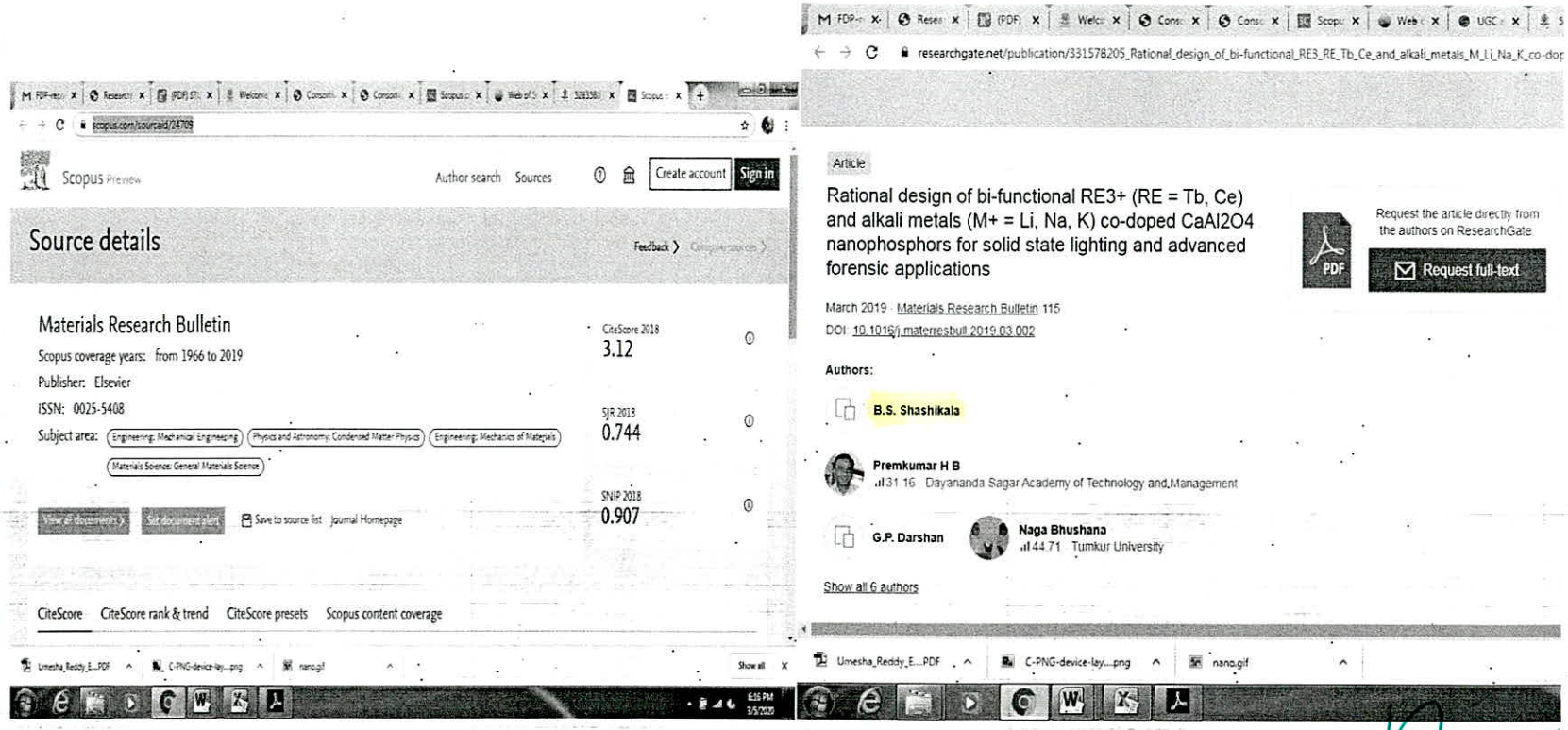
Journal Paper No -94

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Rational design of bi-functional RE^{3+} (RE = Tb, Ce) and alkali metals (M^{+}=Li, Na, K) co doped $CaAl_2O_4$ nano phosphors for solid state lighting and advanced forensic applications	B. S. Shashikala,	Physics	Material Research Bulletin	Mar-19	0025-5408	Scopus



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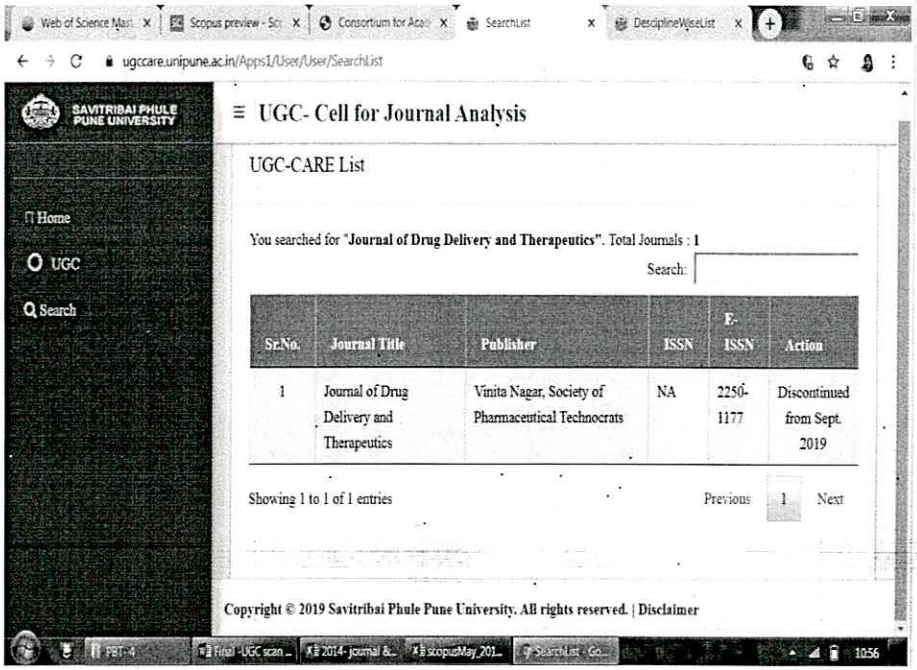
Journal Paper No -95

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Nano-cuprous oxide enhances seed germination and seedling growth in Lycopersicum esculentum plants	Ananda S	BT	Journal of Drug Delivery and Therapeutics	Mar-19	22501177	UGC CARE



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Open Access — Research Article

Nano-cuprous oxide enhances seed germination and seedling growth in *Lycopersicum esculentum* plants

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3 Department of Bioscience, University of Mysore, Hemagangotri, Hassan 573220, Karnataka, India

ABSTRACT

This study was carried out to determine the influence of cuprous oxide nanoparticles (Cu_2O NPs) biosynthesised from leaf extracts of *Flacourtia montana* on the tomato *Lycopersicum esculentum* seed germination, seedling growth and vigour index. Here we examined the promotory and phytotoxic effect of Cu_2O NPs (0-160ppm) on tomato seeds resulted in dosage dependent response. The highest germination percentage (95%) was observed at 20ppm Cu_2O NPs, however, above 20ppm Cu_2O NPs, there is a reduction in the seed germination. The tomato seedlings showed increased root and shoot elongation up to 20ppm Cu_2O NPs concentration, further increase in NPs concentration caused the negative effect on plants growth and development. The leaf pigments showed increasing trend in tomato plants after treatment with Cu_2O NPs up to 20ppm as compared to control. Phytotoxicity of Cu_2O NPs in tomato seedlings demonstrated by lower contents of chlorophyll a, b and carotenoid pigments. The study of effect on antioxidant enzymes showed increases in activity with increase in Cu_2O NPs concentration for two enzymes, Super oxide dismutase (SOD) and Glutathione Peroxidase (GPX) out of five enzymes treated. High antioxidant activity of enzymes is followed by the increased lipid peroxidation and decrease in free radical scavenging activity by the DPPH. The activity of Catalase, Phenyl Alanine Aminolyase and Poly Phenol Oxidase enzymes were found to increase up to 20ppm as compared to control and above this, all three enzymes showed decrease in activity. Uptake of Cu_2O NPs nanoparticle by tomato seedlings was confirmed by atomic absorption spectroscopy.

Keywords: Nano-Cuprous Oxide, *Flacourtia montana*, Tomato, antioxidant enzymes, lipid peroxidation

Article Info: Received 06 Feb 2019; Review Completed 09 March 2019; Accepted 12 March 2019; Available online 15 March 2019

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http://dx.doi.org/10.22270/jddt.v9i2.2554

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INTRODUCTION

Nanomaterials have many applications in agriculture in terms of plant protection and nutrition due to their size-dependent ,qualities, high surface-to-volume ratio and unique optical properties[1]. Research and development in this field growing rapidly. Hence it pave way for wide advances in agricultural research, transfer of agricultural and food wastes to energy and other useful by-products through enzymatic nanobio processing, disease prevention, and treatment in plants using various nanocides[2].

Nanoparticles in agriculture can act as potential candidates for modulating the redox status thereby changing the development of the plants. It is reported that ionic silver (Ag^+) released from AgNPs inhibits respiratory enzymes and induces oxidative stress by generation of reactive oxygen species (ROS) [3, 4,5,6,7]. The interaction mechanisms at the molecular level between nanoparticles and biological systems are largely unknown[8].

Choosing an appropriate technique to increase seed tolerance to adverse environmental conditions will enhance the seed germination percentage. Nanoparticles of many metal oxides by absorbing water, oxygen and nutrients and having the antimicrobial properties can affect the seed germination %, improve growth and plant metabolism[9]

NPs closely interact with their surrounding environment and plants are essential base component of all ecosystem, There is considerable concern about the potentially harmful effects of these NPs and they can have significant negative effects on many organisms[10], especially plants. NPs will inevitably interact with plant and these interactions such as uptake and accumulation in plant biomass will greatly affect their fate and transport in the environment[11].

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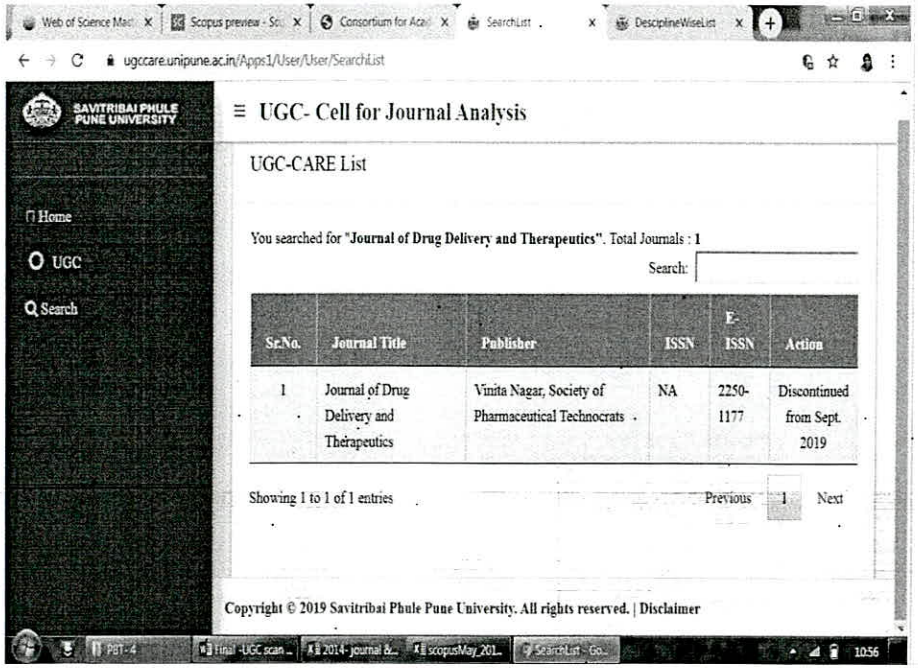
Nano-cuprous oxide enhances seed germination and seedling growth in Lycopersicum esculentum plants	Ananda S	BT	Journal of Drug Delivery and Therapeutics	Mar-19	22501177	UGC CARE



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Open Access Research Article

Nano-cuprous oxide enhances seed germination and seedling growth in *Lycopersicum esculentum* plants

Ananda S [1]*, Shobha G [1], Shashidhara KS [2] and Vishwaprakash Mahadimane [3]

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Nanoparticles in agriculture can act as potential candidates for modulating the redox status thereby changing the development of the plants. It is reported that ionic silver (Ag^+) released from AgNPs inhibits respiratory enzymes and induces oxidative stress by generation of reactive oxygen species (ROS) [3, 4567]. The interaction mechanisms at the molecular level between nanoparticles and biological systems are largely unknown[6].

Choosing an appropriate technique to increase seed tolerance to adverse environmental conditions will enhance the seed germination percentage. Nanoparticles of many metal oxides by absorbing water, oxygen and nutrients and having the antimicrobial properties can affect the seed germination %, improve growth and plant metabolism[8].

NPs closely interact with their surrounding environment and plants are essential base component of all ecosystem. There is considerable concern about the potentially harmful effects of these NPs and they can have significant negative effects on many organisms[10], especially plants. NPs will inevitably interact with plant and these interactions such as uptake and accumulation in plant biomass will greatly affect their fate and transport in the environment[11].

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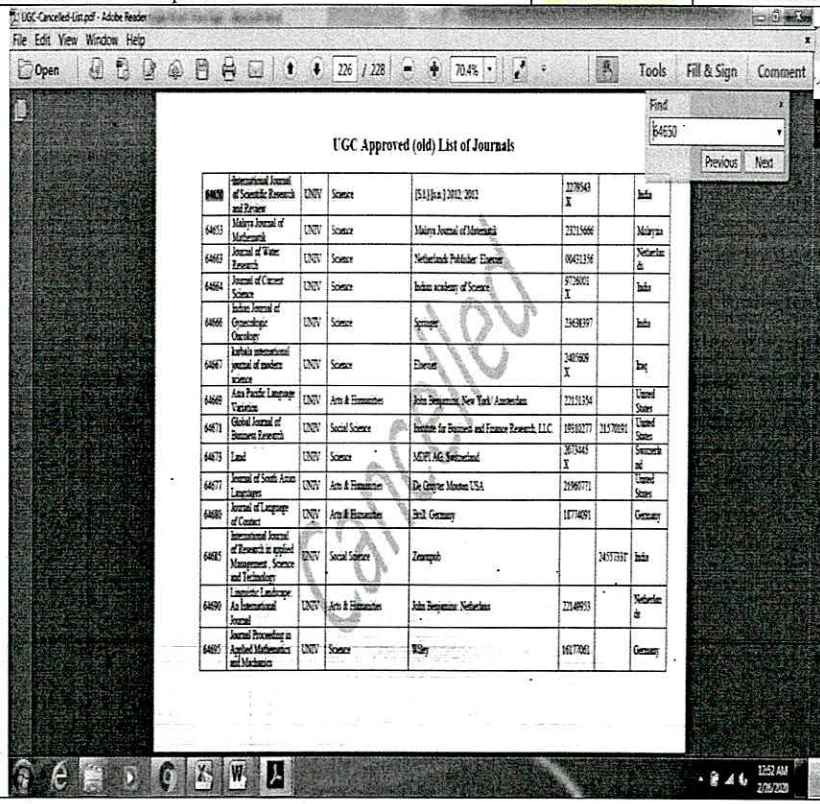
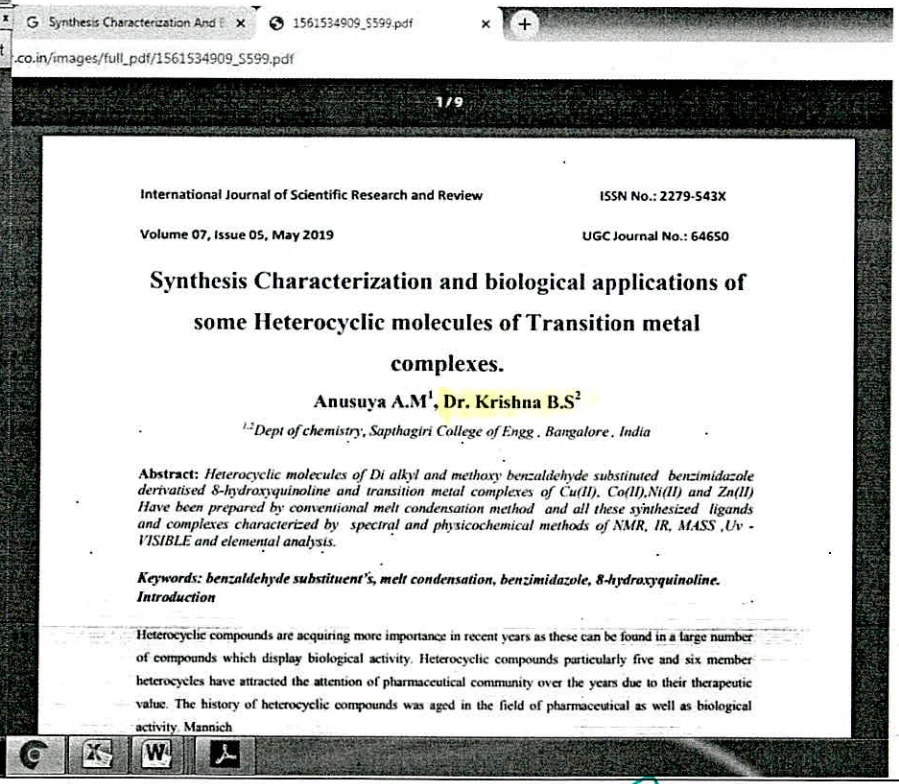
Journal Paper No -97

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Synthesis Characterization And Biological Applications Of Some Heterocyclic Molecules Of Transition Metal Complexes	Krishana BS	Chemistry	International Journal of Scientific Research and Review	May-19	2279-543X	UGC Earlier-64650





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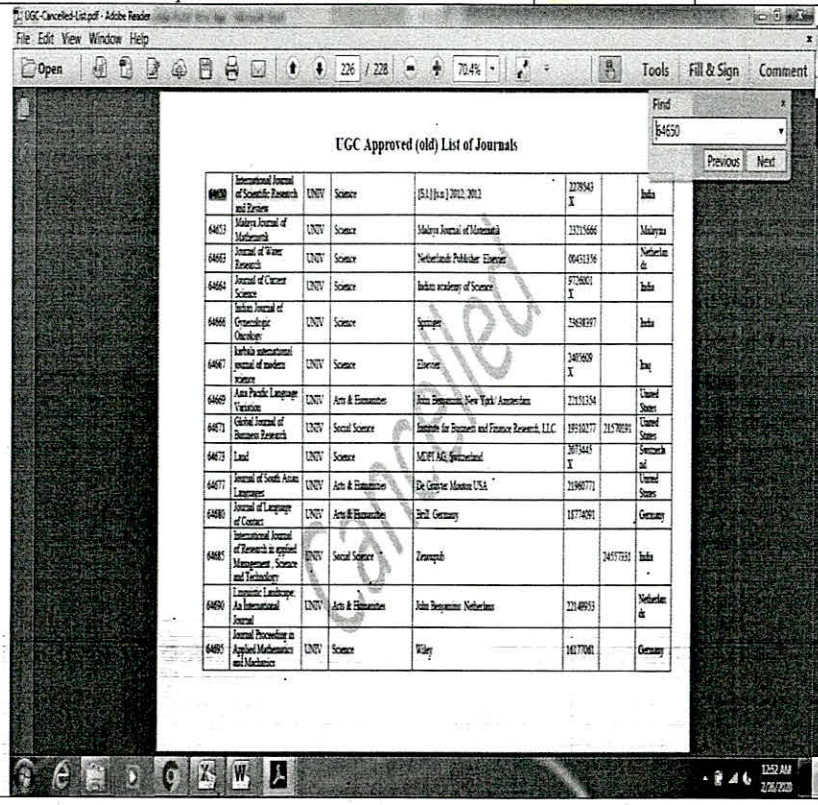
Journal Paper No -98

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Synthesis Characterization And Biological Applications Of Some Heterocyclic Molecules Of Transition Metal Complexes	Anusuya AM	Chemistry	International Journal of Scientific Research and Review	May-19	2279-543X	UGC Earlier-64650



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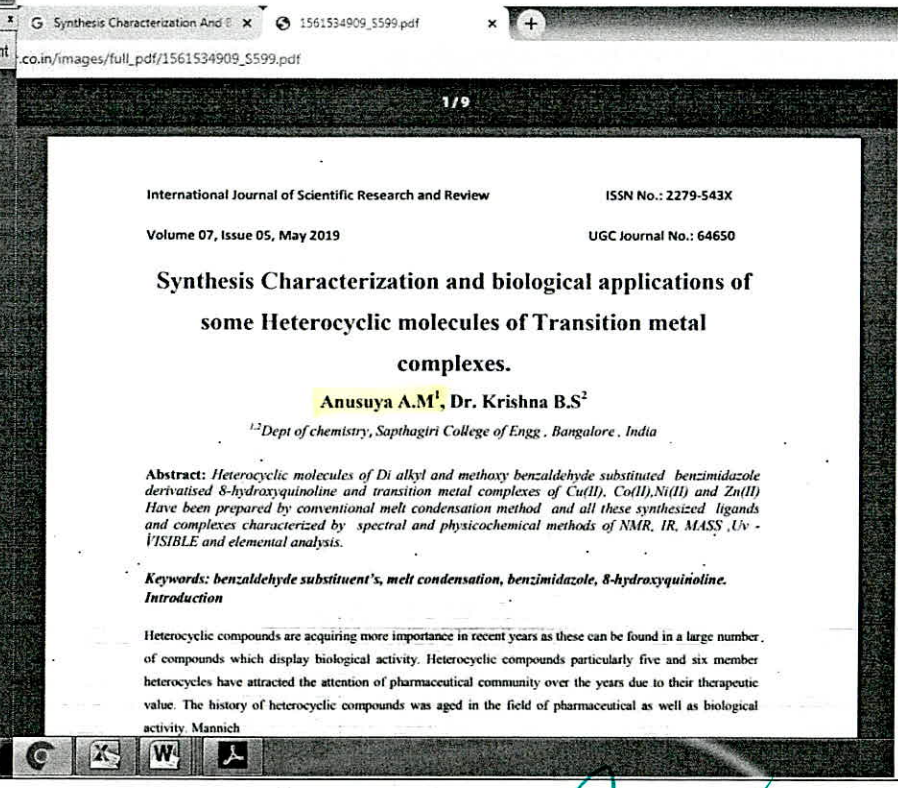

International Journal of Scientific Research and Review ISSN No.: 2279-543X

Volume 07, Issue 05, May 2019 UGC Journal No.: 64650

Synthesis Characterization and biological applications of some Heterocyclic molecules of Transition metal complexes.

Anusuya A.M[1], Dr. Krishna B.S[2]

[1,2]Dept of chemistry, Sapthagiri College of Engg . Bangalore . India

Abstract: *Heterocyclic molecules of Di alkyl and methoxy benzaldehyde substituted benzimidazole derivatised 8-hydroxyquinoline and transition metal complexes of Cu(II), Co(II),Ni(II) and Zn(II) Have been prepared by conventional melt condensation method and all these synthesized ligands and complexes characterized by spectral and physicochemical methods of NMR, IR, MASS ,Uv - VISIBLE and elemental analysis.*

Keywords: benzaldehyde substituent's, melt condensation, benzimidazole, 8-hydroxyquinoline.

Introduction

Heterocyclic compounds are acquiring more importance in recent years as these can be found in a large number of compounds which display biological activity. Heterocyclic compounds particularly five and six member heterocycles have attracted the attention of pharmaceutical community over the years due to their therapeutic value. The history of heterocyclic compounds was aged in the field of pharmaceutical as well as biological activity. Mannich

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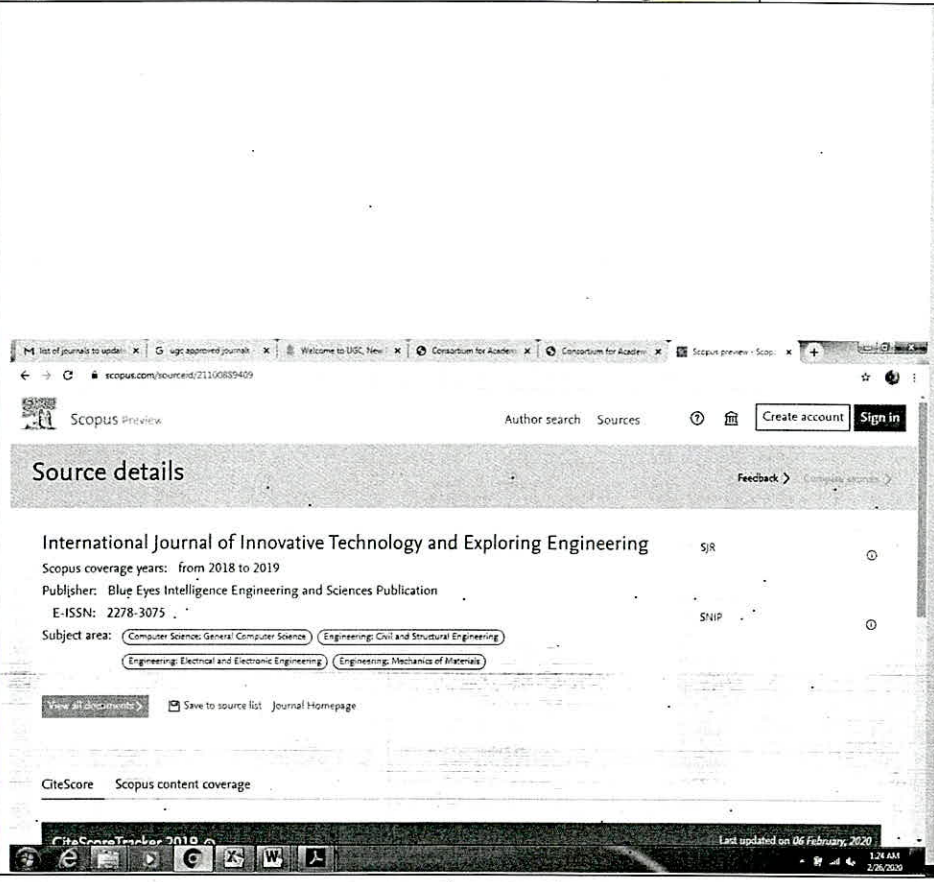
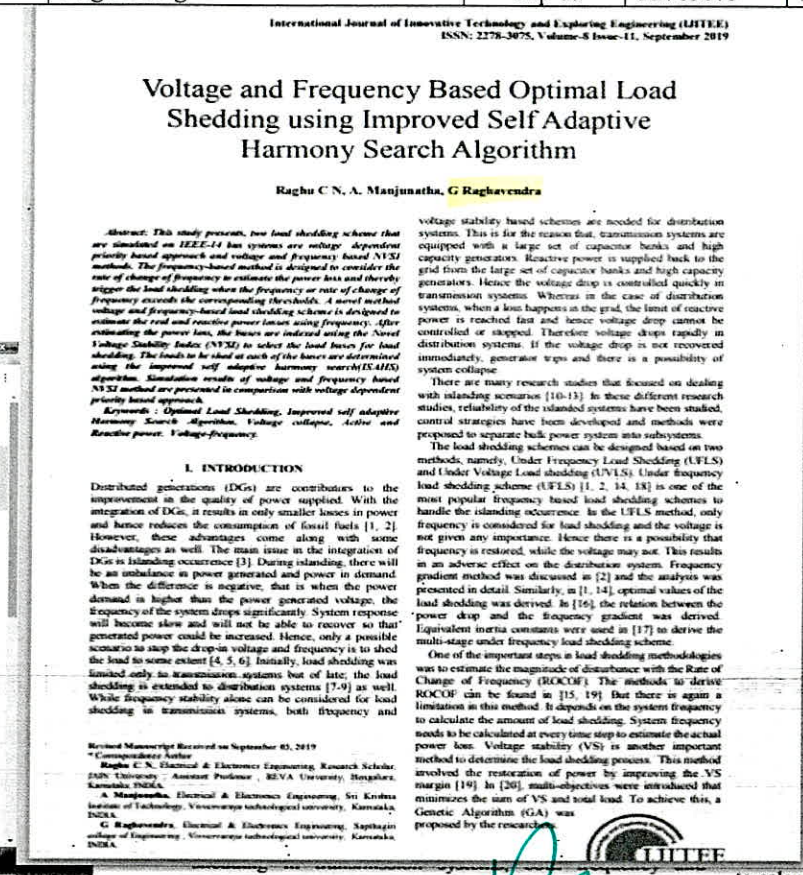
Journal Paper No -99

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Voltage and frequency based optimal load shedding using improved self-adaptive harmony search algorithm	Ragavendra	EEE	International Journal of Innovative Technology and Exploring Engineering	Sep-19	22783075	Scopus





International Journal of Innovative Technology and Exploring Engineering (IJITEE)
ISSN: 2278-3075, Volume-8 Issue-11, September 2019

Voltage and Frequency Based Optimal Load Shedding using Improved Self Adaptive Harmony Search Algorithm

Raghu C N, A. Manjunatha, G Raghavendra

Abstract: This study presents, two load shedding scheme that are simulated on IEEE-14 bus systems are voltage dependent priority based approach and voltage and frequency based NVSI methods. The frequency-based method is designed to consider the rate of change of frequency to estimate the power loss and thereby trigger the load shedding when the frequency or rate of change of frequency exceeds the corresponding thresholds. A novel method voltage and frequency-based load shedding scheme is designed to estimate the real and reactive power losses using frequency. After estimating the power loss, the buses are indexed using the Novel Voltage Stability Index (NVSI) to select the load buses for load shedding. The loads to be shed at each of the buses are determined using the improved self adaptive harmony search(ISAHS) algorithm. Simulation results of voltage and frequency based NVSI method are presented in comparison with voltage dependent priority based approach.

Keywords : Optimal Load Shedding, Improved self adaptive Harmony Search Algorithm, Voltage collapse, Active and Reactive power, Voltage-frequency.

I. INTRODUCTION

Distributed generations (DGs) are contributors to the improvement in the quality of power supplied. With the integration of DGs, it results in only smaller losses in power and hence reduces the consumption of fossil fuels [1, 2]. However, these advantages come along with some disadvantages as well. The main issue in the integration of DGs is Islanding occurrence [3]. During islanding, there will be an imbalance in power generated and power in demand. When the difference is negative, that is when the power demand is higher than the power generated voltage, the frequency of the system drops significantly. System response will become slow and will not be able to recover so that generated power could be increased. Hence, only a possible scenario to stop the drop-in voltage and frequency is to shed the load to some extent [4, 5, 6]. Initially, load shedding was limited only to transmission systems but of late, the load shedding is extended to distribution systems [7-9] as well. While frequency stability alone can be considered for load shedding in transmission systems, both frequency and voltage stability based schemes are needed for distribution systems. This is for the reason that, transmission systems are equipped with a large set of capacitor banks and high capacity generators. Reactive power is supplied back to the grid from the large set of capacitor banks and high capacity generators. Hence the voltage drop is controlled quickly in transmission systems. Whereas in the case of distribution systems, when a loss happens in the grid, the limit of reactive power is reached fast and hence voltage drop cannot be controlled or stopped. Therefore voltage drops rapidly in distribution systems. If the voltage drop is not recovered immediately, generator trips and there is a possibility of system collapse.

There are many research studies that focused on dealing with islanding scenarios [10-13]. In these different research studies, reliability of the islanded systems have been studied, control strategies have been developed and methods were proposed to separate bulk power system into subsystems.

The load shedding schemes can be designed based on two methods, namely, Under Frequency Load Shedding (UFLS) and Under Voltage Load shedding (UVLS). Under frequency load shedding scheme (UFLS) [1, 2, 14, 15] is one of the most popular frequency based load shedding schemes to handle the islanding occurrence. In the UFLS method, only frequency is considered for load shedding and the voltage is not given any importance. Hence there is a possibility that frequency is restored, while the voltage may not. This results in an adverse effect on the distribution system. Frequency gradient method was discussed in [2] and the analysis was presented in detail. Similarly, in [1, 14], optimal values of the load shedding was derived. In [16], the relation between the power drop and the frequency gradient was derived. Equivalent inertia constants were used in [17] to derive the multi-stage under frequency load shedding scheme.

One of the important steps in load shedding methodologies was to estimate the magnitude of disturbance with the Rate of Change of Frequency (ROCOF). The methods to derive ROCOF can be found in [15, 19]. But there is again a limitation in this method. It depends on the system frequency to calculate the amount of load shedding. System frequency needs to be calculated at every time step to estimate the actual power loss. Voltage stability (VS) is another important method to determine the load shedding process. This method involved the restoration of power by improving the VS margin [19]. In [20], multi-objectives were introduced that minimizes the sum of VS and total load. To achieve this, a Genetic Algorithm (GA) was proposed by the researchers.

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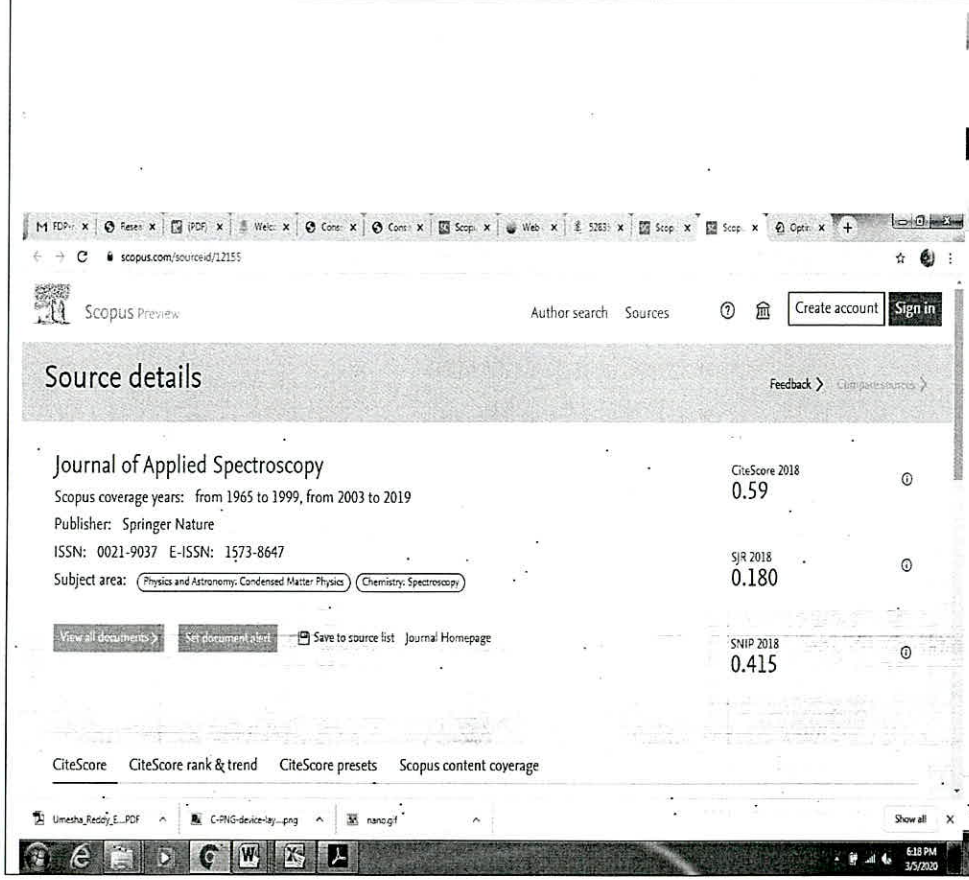
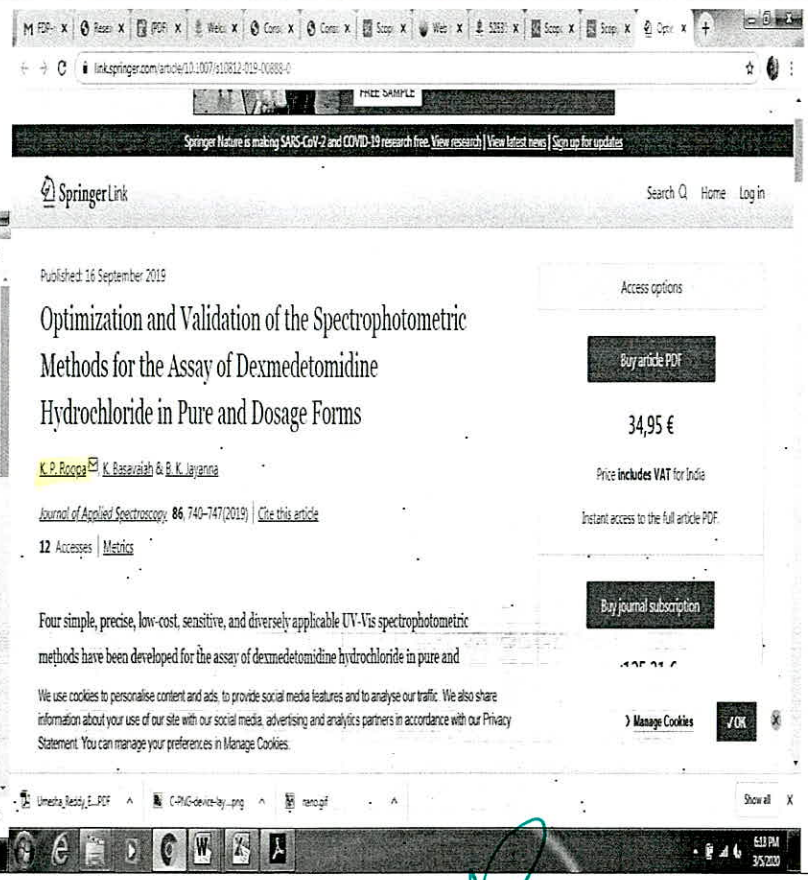
Journal Paper No -100

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Optimization and Validation of the Spectrophotometric Methods for the Assay of Dexmedetomidine Hydrochloride in Pure and Dosage Forms	Roopa K P	Chemistry	Journal of Applied Spectroscopy	Sep-19	0021-9037	Scopus





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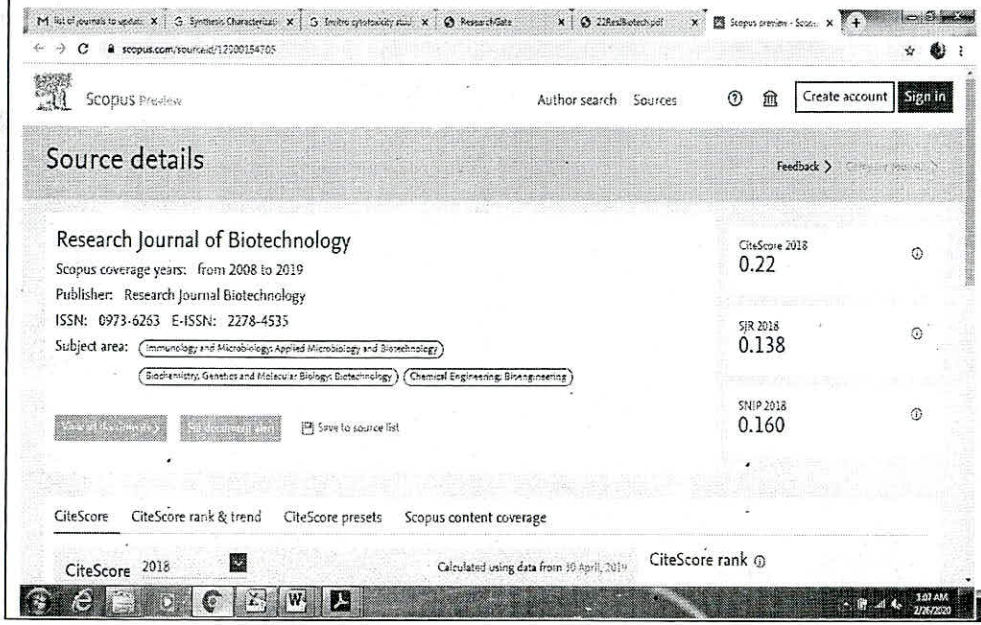
JOURNAL 101

Title of paper	Name of the author/s	Department of the teacher	Name of journal	Year of publication	ISBN/ISSN number	Index
Invitro cytotoxicity study of green synthesized copper nanoparticles	Ananda S	BT	Research journal of biotechnology	Aug-19	22784535	Scopus



Research Journal of Biotechnology Vol. 14 (8) August (2019)
Res. J. Biotech

In Vitro Cytotoxicity Study of Green Synthesized Copper Nanoparticles

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Abstract
In our earlier study, we reported the green synthesis of copper nanoparticles with antimicrobial activity. Here we report the cytotoxicity and genotoxicity potency of the green synthesized copper nanoparticles on cancer cells MCF-7. The different cell lines experimental results in our study have shown that the cells morphology changed significantly for cancer lines MCF-7 upon treatment with copper nanoparticles and IC_{50}dose for MCF-7 cells was found to be 1.71 µg ml^{-1} by MTT assay. At this concentration, copper nanoparticles had shown an cytotoxicity effect on normal cell line (3T3L1). The dual staining (Acridine orange/Ethidium Bromide) showed various degrees of accumulation of nanoparticles by apoptotic tumour cells with increasing concentration of copper nanoparticles.

The comet assay and DNA fragmentation assay by gel electrophoresis on cancer cell line MCF-7 showed the chromosomal condensation and fragmentation of DNA after treatment with the copper nanoparticles.

Keywords: Copper nanoparticle, Comet assay, DNA fragmentation, MTT assay, Tumour cells.

Introduction

Every organism on the earth continuously encounters nanometer-sized entities in day to day activities. The vast majority of them cause little negative effect and go unnoticed, but occasionally they will cause significant amount of harm to the organism.

Very small particles, called nanoparticles, have the ability to enter and translocate within the body and damage the living organisms.[1] This ability results primarily from their small size which allows them to enter through physiological barriers and travel within the circulatory systems of the host organism. The natural processes have produced nanoparticles for eons, however the modern science has recently learned how to synthesize a large array of artificial materials engineered at the atomic scale.

The smallest particles contain tens or hundreds of atoms with dimensions at the scale of nanometers - hence nanoparticles. They are comparable to viruses in size where the smallest have the dimensions of tens of nanometers (for example, HIV is 100 nm in diameter). Like viruses, some nanoparticles can penetrate lung or dermal (skin) barriers and enter the circulatory and lymphatic systems of humans and animals and vastly disrupting cellular processes and may cause some types of diseases. The toxicity of each of these materials depends greatly upon the particular arrangement of its many atoms.[2]

With consideration of all the possible shape and chemistry of the smallest nanoparticles, they can yield a huge number of distinct materials with potentially very different physical, chemical and toxicological properties. A good example of a toxic nanomaterial is asbestos which causes lung cancer and other diseases.[3,4] Asbestos exists in several forms with slight variations in shape and chemistry yet significantly varying toxicity levels.

Recent advances in nanotechnology have impacted industries including manufacturing, biomedical applications, electronics/telecommunications, agriculture and renewable energy among others.[5] Because the nanotechnology is a recent development, the health and safety effects of exposures to nanomaterials and what levels of exposure may be acceptable, is not yet fully understood. Typical nanoparticles that have been studied are titanium dioxide, alumina, zinc oxide, carbon black, carbon nanotubes and buck minster fullerene.

In spite of the immense advance in nanotechnologies, the potential toxicity of nanoparticles has not been well understood.[6] Various *in-vitro* examinations have been performed to evaluate the toxicity of a few nanoparticles using different assays. Few nanoparticles can be able to produce free radicals even under dark conditions which have attributed to surface defects bringing about increment in surface reactivity. In this perspective, it becomes necessary that the toxicity of nanoparticles has to be studied extensively in both *in vitro* and *in vivo*.

Metallic nanoparticles in recent days have gained great importance because of their high surface to volume ratio with small dimension. Metal oxide nanoparticles (NPs) have drawn extensive interest because of their enhanced properties, unprecedented performance, life cycle cost and interestingly vast appropriateness in different industrial fields and biomedical applications.[7] Predominantly copper metal nanoparticles are right now under scrutiny because of their pertinence in different fields, for example, gas sensors, catalysis, batteries, high-temperature superconductors and field outflow producers, agribusiness as it is around 10 fold

Keywords: Copper nanoparticle, Comet assay, DNA are that

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