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2022-2023**

**Papers Published in 2022-2023 : 66**

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1	Dr. Latha E	Union of Incompatability in Anita Desai's <i>Cry, The Peacock</i>	English	Journal of Education: Rabindra Bharati University	2022	0972-7175.
2	Dr. Latha E	The Culture of Survival in Traditional Indian Women from Select Short Stories of Mulkraj Anand	English	Rabindra Bharati Journal of Philosophy	2022	0973-0087.
3	Dr. Sr. Amala Valarmathy A & Dr.Chitralekha D.	Factors that Impact the Aquisition of English Language Proficiency at the Tertiary Level: A Study	English	International Journal of humanities, Law and Social Sciences	2022	2348-8301
4	Dr.Vernum Cecilia P.A.A	Elif Shafaka's <i>Honour</i> and the Three Forms of Intersectionality	English	Rabindra Bharathi Journal of Philosophy	2023	0973-0087
5	Dr. Sr. Amala Valarmathy A	The Wisdom of Folly: Framed Narration in Beschi's Paramartha <i>Guru and his Disciples</i>	English	South India Journal of Social Sciences	2023	0972-8945
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7	Dr. P. Rajeswari	Consumer Motives to Choose an Organic Food: An Empirical Study	Business Administration	Rabindra Bharathi Journal of Philosophy	2023	0973 -0087
8	Dr.Shobana R	Prediction of Cardiovascular Diseases Using Bio-Inspired MKCB Optimization Algorithm Journal of Survey in Fisheries Sciences	Computer Science	Journal of Survey in Fisheries	2023	3651-3660
9	Ms. Anitha & Dr .Auxilia Antony	A Study on the Service Quality and Customer satisfaction towards E-marketing - Post Covid	Commerce	South India Journal of Social Science	2023	0972-8945
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		create job opportunities for rural women				
11	Dr.E.Anitha Alice	A study on factors affecting job satisfaction of teaching faculty in Ranipet District	Commerce	Education & Society	2023	2278-6864
12	K. Kalaivani	Opportunities and Challenges of Women Entrepreneurs engaged in Bio Degradable Products Business at Vellore District of Tamilnadu State, India	Commerce	Atlantis Press Springer Nature / Advanced in Economics Business and Management Research	2023	2352-5428
13	K. Kalaivani	A Conceptual study on biodegradable products and its business prospects among the women entrepreneurs' in Tamilnadu	Commerce	Rabindra Bharati journal of philosophy	2023	0973-0087
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28	Dr. V. Sugantha Kumari	In vitro cyto compatibility evaluation of Nano starch reinforced polyaniline - poly vinyl alcohol conductive bionanocomposite for skin Tissue engineering application	Chemistry	Journal of Umm Al-Qura University for Applied Sciences	2023	1658-8185
29	Dr. V. Sugantha Kumari	In vitro study of Biocompatible Hybrid Scaffold of Polyvinyl alcohol- polyaniline- Nano cellulose for tissue engineering applications	Chemistry	Journal of Chemistry Africa	2023	2522-5758

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*Dr. Suresh Suresh - 2*

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AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006.  
Vellore District, Tamil Nadu.



**A STUDY ON THE SERVICE QUALITY AND CUSTOMER SATISFACTION TOWARDS  
E- MARKETING – POST COVID**

**Ms. Anitha S.**, Asst. Professor, **Dr. Auxilia Antony S.**, Head, Dept. of Commerce, **Auxilium College**  
(Autonomous), Gandhi Nagar, Vellore-632006, Tamil Nadu

**Abstract**

Pandemics like COVID-19 result in a disruption in the lifestyle and buying pattern of a consumer and adversely impact the global economy. The world has been suffering from the COVID-19 pandemic; it has brought drastic changes globally in many sectors, business being one of them. To survive, switching traditional shopping or trade toward digital was one factor that captured the attention across the globe on a larger scale. The study is to determine the service quality of E – Marketing and how there is a paradigm shift in business in the post covid. E-commerce companies have been the most growing sales channels since the beginning of the COVID-19 crisis. The data was collected through questionnaire and various statistical tools were analysed. The result of this study shows that e-service quality variable has the highest direct influence on satisfaction. These results propose that consumers' satisfaction is greatly influenced by components of e-service quality: trust, reliability, and responsiveness. Moreover, satisfaction is an important factor in the eyes of consumers as customers will not be loyal to the online shop unless they are satisfied.

**Keywords:** E Commerce, Service Quality, Customer Satisfaction, Business, Pandemic

**Introduction**

COVID-19 has been exceptionally challenging for businesses worldwide and brought to the fore the special role of e-commerce can play in this crisis and beyond. In the post-COVID-19 world, the unparalleled growth of ecommerce businesses will, we believe, disrupt national retail frameworks and international trade fundamentals – and this in turn present unique opportunity for growth both domestically and internationally. The Covid-19 pandemic has caused one of the biggest social and healthcare crises in the history of humankind. Furthermore, countries had to shut down and enforce social distancing to minimize the contagion rate and resulting deaths. This so-called lockdown means that most international and national flights were cancelled, restaurants and bars were closed, companies had to resort to home office, and public and private institutions such as universities and schools had to close their doors.

COVID-19 pandemic, has brought drastic changes globally in many sectors, business being one of them. De Vos (2020) stated that a large-scale lockdown was imposed worldwide to prevent the virus from spreading. Global lockdown, social distancing, and other measures introduced to limit the spread of the COVID-19 pandemic have urged consumers to purchase more on the online market. The business landscape faced rapid transformations during the quarantine period as a result. Ultimately, the corona crisis accelerated the development of digital commerce. The pandemic sparked a meteoric rise in online sales. As visits to physical stores were restricted, and many were running low on money, consumers went online to shop, causing online purchases to grow higher and higher. Consumers were generally mindful shoppers even before the pandemic. The COVID-19 pandemic has affected the lifestyles and motivations of many people, such that their purchasing behaviours' also changed.

**Customer satisfaction**

It is very important to attract more customers to the industry. If any industry attracts more customers in the industry, then the brand value of the company will be increased. It has been seen that digital technology imparts a huge impact over the customer attraction and customer satisfaction as well. Online shopping is the biggest part customer attraction as well as customer satisfaction. In this technological world, most of the companies use online shopping for making satisfy the customer and



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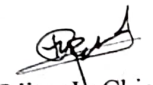
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*Dr. Mary Agnes A*  
**PRINCIPAL**  
**AUXILIUM COLLEGE (Autonomous)**  
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

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
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# Regeneration study of MB in recycling runs over nickel vanadium oxide by solvent extraction for photocatalytic performance for wastewater treatments

Amal George<sup>a</sup>, A. Dhayal Raj<sup>a</sup>  , A. Albert Irudayaraj<sup>a</sup>, R.L. Josephine<sup>b</sup>, X. Venci<sup>c</sup>, S. John Sundaram<sup>a</sup>, R. Rajakrishnan<sup>d</sup>, Palaniselvam Kuppusamy<sup>e</sup>, K. Kaviyarasu<sup>f</sup>  

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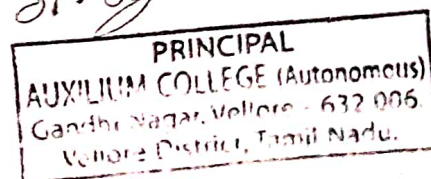
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## Abstract

Recently, researchers are concentrating on the synthesis of composite materials to enhance the efficiency of the materials in various applications. In this work, nickel vanadium oxide ( $\text{NiV}_2\text{O}_6$ ) nanocomposite material is prepared via two methods and the prepared samples have been characterized with basic studies to analyse the effect of preparation method and the reaction time. The XRD studies reveal a polycrystalline growth in both the methods. The broad XRD peaks obtained for samples prepared via hydrothermal method suggests the size reduction and 1D nanostructure formation. The SEM analysis shows the formation of 1D structures in hydrothermal and 3D microsphere structures in solvothermal methods. The possible formation mechanism behind this formation has been discussed in this manuscript. The FTIR peaks in the fingerprint region confirm the formation and vibration of metal-oxygen bonds. The large optical bandgap values obtained from *Tauc plot* again confirms the formation of nanostructures of the synthesized samples. The photocatalytic activity of nickel vanadium oxide on methylene blue dye under halogen light were performed and, the recyclability of the sample is investigated. It was found from the photocatalytic spectrum that, the samples prepared from both the methods shows a degradation efficiency of more than 80% within 150min. It was confirmed that the prepared  $\text{NiV}_2\text{O}_6$  photocatalyst samples does not lose their degradation ability even after five cycles of repeated usage.

Graphical abstract



# Anticancer potential of poly(2-aminobenzoic acid)-blend-Aloe vera against the human breast cancer cell line MDA-MB-231

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Julia Sebastian<sup>1</sup> and Jhancy Mary Samuel<sup>2</sup>

## Abstract

Breast cancer in women is amongst the most significant concerns from time immemorial in the field of oncology. This study proposes an anticancerous polymeric material based on an electroactive substituted polyaniline blend, poly(2-aminobenzoic acid)-blend-Aloe vera (PABA/AV) synthesized by the emulsion polymerization method. The structural, thermal, and morphological characteristics determined using FT-IR and UV-Visible Spectroscopy, XRD, TGA, DTA, and SEM-EDX validated the thermally stable, semi-crystalline, emeraldine salt structure. The material is semi-conducting, and the electrical conductivity measured is  $1.86 \times 10^{-3} \text{ S/cm}$ . It shows bactericidal efficacy against *Enterococcus faecalis* at a minimum inhibitory and minimum bactericidal concentration of  $50 \mu\text{g/mL}$ . The radical cations in the emeraldine polymer chain reduce the 2,2-diphenyl-1-picrylhydrazyl (DPPH) free radical and exhibit a significant % of DPPH scavenging (89.85%) at  $20 \mu\text{L}$ . The polymer blend is active against the human breast cancer cell line MDA-MB-231 and causes 78.65% cytotoxicity at a concentration of  $125 \mu\text{g/mL}$ . The synergistic effect of the ancient healing Aloe vera plant and the electroactive biocompatible poly(2-aminobenzoic acid) certainly opens up new developments in the field of cancer therapy.

## Keywords

Poly(2-aminobenzoic acid), aloe vera, antibacterial, antioxidant, anticancer, MDA-MB-231

<sup>1</sup>PG & Research Department of Chemistry, Department of Chemistry, Auxilium College, Vellore, Tamil Nadu, India

<sup>2</sup>PG & Research Department of Chemistry, Department of Chemistry, Auxilium College, Affiliated to Thiruvalluvar University, Vellore, Tamil Nadu, India

## Corresponding author:

Jhancy Mary Samuel, Associate Professor & Head, PG & Research Department of Chemistry, Auxilium College, Vellore - 632 006, Affiliated to Thiruvalluvar University, Serkkadu, Vellore - 632 115, Tamil Nadu, India.  
Emails: jmarys@auxiliumcollege.edu.in; jhancy2011@gmail.com

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AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006.  
Vellore District, Tamil Nadu.



# Photocatalytic degradation effect of CdSe nanoparticles for textile wastewater effluents at low cost and proves to be efficient method

X. Venci<sup>a,b</sup>, Amal George<sup>a</sup>, A. Dhayal Raj<sup>a</sup> ✉, A. Albert Irudayaraj<sup>a</sup>, T. Pazhanivel<sup>c</sup>, R.L. Josephine<sup>d</sup>, S. John Sundaram<sup>a</sup>, K. Kaviyarasu<sup>e,f</sup> ✉, A. Raja<sup>g</sup>, Fahd A. Al-Mekhlafi<sup>h</sup>, Muhammad A. Wadaan<sup>h</sup>

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## Abstract

Semiconductor nanoparticles and nanocrystals have a great impact due to its contribution in the diverse fields including electronics, solar energy, biological imaging, and photonics. Among these semiconductor nanoparticles, cadmium selenide of II-VI group binary semiconductor nanoparticles were synthesized using solvothermal process for the different reaction temperatures. The XRD pattern of the synthesized samples confirms the crystalline nature of the samples and showed increase in its crystallite size with rise in temperature. The morphology of the samples was analysed with TEM images and found that the nanoparticles synthesized at different temperatures were varied in size and shape indicating the increase in the size of the particles with the raise in temperature. The optical properties of the samples pointed out that they exhibit a blue shift owing to quantum confinement. Photocatalytic activity was carried out for the synthesized samples under visible light radiation using methylene blue (MB) as a model pollutant and it proved to be a good photocatalyst achieving the efficiency of 75% which is promising for future application with good optimization. The efficiency could be increased when these semiconductor CdSe nanoparticles are doped with metal particles due to an increase in the absorption edge wavelength and a decrease in bandgap energy were reported in detail.

## Introduction

In this new era of science and technology, the discovery of nanoparticles has indeed proved the originality of the researchers and their capabilities in making the 'science of small' to achieve greater industrial revolution especially in the field of electronics. This has been manifested as it establishes a significant share in the worldwide market and endows with a larger salutary impact on every sphere of life. It is certainly due to the dire change in properties which include both physical and chemical when the particles are reduced to nanoscale. At the nanoscale range, a new way is found to control the properties of materials rather than changing its composition to vary the properties. In particular, the semiconductor nanoparticles have drawn

## A STUDY ON PRUDENT AND ECONOMIC USE OF LOCAL ENVIRONMENTAL RESOURCES TO CREATE JOB OPPORTUNITIES FOR RURAL WOMEN

Dr. F. Anitha Alice, Assistant Professor of Commerce, Auxilium College, Vellore

### Abstract

The Government has recognized that women are the most important stimulus in consumption and managing the natural resources by the society. Women have the capacity and willingness to develop, organize and manage a venture effectively and efficiently with environmental resources. Women have come a long way from just being a home maker. India as a country is blessed with rich natural resources and occupies a prominent place in the world in the mining of many minerals and makes use of both renewable and non-renewable resources, with an arable land of 48%, forest 22%, alluvial soil which comprises of 80% of the total fertile soil available. Prime Minister Narendra Modi's start-up friendly environment in the country has proved to be a blessing for female entrepreneurs and instrumental in fighting stereotyping in the business community. With this challenge the women who are known for hard work and self-confidence ignited in them will be influenced and induced their motivation and morale level in making the local resources available prudent and efficient by promoting towards "job creators and not job seekers" Data was collected from 600 respondents and Correlation, One way ANOVA was used for analysis.

**Keywords:** Women, Natural Resources, Job opportunities

### INTRODUCTION

Empowering women to participate fully in economic life across all sectors is essential to build stronger economies, achieve internationally agreed goals for development and sustainability, and improve the quality of life for women, men, families and communities has been the aim of Honourable Prime Minister of India Sri.Narendra Modiji and these are visible through the various welfare measures provided for citizens of Tamil Nadu:

- Prime Minister's Financial Empowerment Scheme – Bank Account (PMJDY)
- Prime Minister's Personal Accident Protection Scheme (PMSBY)
- Prime Minister's Personal Life Protection Scheme (PMJJBY)
- Prime Minister's Small Micro Industries Development Scheme (PMMY)
- Prime Minister's Urban Housing for All Scheme (PMAY)
- Prime Minister's UjjwalaYojana (PMUY)

### IMPORTANCE OF STUDY

This study emphasizes directly on the prudent and frugal utilization of natural resources. Over exploitation of natural resources has led to the imbalance of the ecosystem. Pollution, global warming, dwindling forests, grasslands, croplands, etc. have posed serious threat to continuation of life. In order to live well and bequeath our future generations on the planet in good condition, we must practice prudence and frugality in using the natural resources must be used prudently.

In this connection job opportunities can be given in the areas like management of waste, management of energy, management of water supply, making the unskilled women into skilled person.

## Comparative Analysis of the Phyto-compounds Present in the Control and Experimental Peels of *Musa paradisiaca* used for the Remediation of Chromium Contaminated Water

Vidhya Kaniyappan<sup>1\*</sup>, Regina Mary Rathinasamy<sup>1</sup>, and Job Gopinath Manivanan<sup>2</sup>

<sup>1</sup>PG and Research Department of Zoology, Auxilium College (Autonomous), Vellore – 632006, T.N, India

<sup>2</sup>PG and Research Department of Zoology, Voorhees College, Vellore – 632001, T.N, India

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**Abstract :** Banana peels are also widely used as bio-adsorbent in the removal of chemicals contaminants and heavy metals from water and soil. GC-MS plays an essential role in the phytochemical analysis and chemo taxonomic studies of medicinal plants containing biologically active components. Intrinsically, with the use of the flame ionization detector and the electron capture detector which have very high sensitivities, Gas chromatography can quantitatively determine materials present at very low concentrations and most important application is in pollution studies. In the present study banana peels were used as bio-adsorbent to remediate the heavy metal contaminated water taken from three different stations located around the industrial belts of Ranipet, Tamilnadu, India. The AAS analysis of the samples shows a decrement of chromium concentration of 98.93%, 96.16% and 96.5% in Station 1, 2 and 3 respectively which proves the efficiency of the powdered peels of *Musa paradisiaca*. The GC-MS analysis of the control and treated peels of *Musa paradisiaca* reveals the presence of phytochemicals like Acetic Acid, 1-Methylethyl Ester, DL-Glyceraldehyde Dimer, N-Hexadecanoic Acid, 3-Decyn-2-Ol, 26-Hydroxy, Cholesterol, Ergost-25-Ene-3,5,6,12-Tetrol, (3.Beta.,5.Alpha.,6.Beta.,12.Beta.-), 1-Methylene-2b-Hydroxymethyl-3, and 3-Dimethyl-4b-(3-Methylbut-2-Enyl)-Cyclohexane in the control banana peels. The banana peels which were used for the treatment reveals the changes and alteration of the phytochemicals. It is concluded that the alteration in phytochemicals of the experimental banana peels were due to adsorption of chromium heavy metal from the sample.

**Keywords :** Bio-adsorbent, Banana peels, GCMS, AAS, Phytochemicals, Heavy metals, Chromium.

### Introduction

The non-nutrient plant chemical compounds and bioactive compounds are referred to as phytochemicals.<sup>1-3</sup> Applications of phytochemicals have expanded recently, particularly in the fields of nutraceuticals and functional foods.<sup>4</sup> The importance of phytochemicals for health is highlighted by Asif *et al.*<sup>5</sup> One of the most significant crops in the world estimated at 72.5 million metric tonnes of bananas are produced globally, of which India contributes 21.77 million metric tonnes.<sup>6</sup> The fruit peels from this variety that are thrown away make up 18 to 33%

#### Open Access

\*Reprint requests to Vidhya Kaniyappan  
<https://orcid.org/0000-0002-5155-9571>  
 E-mail: yonigrace@gmail.com

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of the total fruit peel waste. The banana peels are rich in potassium, phosphorus, magnesium, and calcium as well as 52 other chemical components and nutritional goods.<sup>7</sup> In comparison to the fruit's pulp, banana peels are rich in chemical components that are valued for their anti-fungal and antibacterial activities.<sup>8,9</sup> The biotechnological manufacture of protein from banana peel waste also produces ethanol, alpha-amylase, and cellulose.<sup>10</sup> According to Kanazawa *et al.*,<sup>11</sup> banana peels include a variety of phytochemicals and phytonutrient components, primarily antioxidants. These include anthocyanins, delphinine, catecholamines, beta-carotene, and alpha-carotene.<sup>11</sup> In recent years GC-MS studies have been increasingly applied for the analysis of medicinal plants as this technique has proved to be a valuable method for the analysis of non-polar components and volatile essential oil, fatty acids, lipids, and alkaloids.<sup>12-14</sup> A key use of GC-MS is the monitoring of environmental contaminants. Equipment for GCMS has become less expensive while significantly improving in reliability. In the current study, the effectiveness of using banana peels to remediate chromium-contaminated wastewater was evaluated. The amount of chromium present in the contaminated water before and after the treatment using banana peels were evaluated by using Atomic Absorption

*Dr. Jagan*

PRINCIPAL  
 AUXILIUM COLLEGE (Autonomous)  
 Gandhi Nagar, Vellore - 632 006.  
 Vellore District, Tamil Nadu.

# Biosynthesis of Bimetallic Cu-Ag Nanocomposites and Evaluation of their Electrocatalytic, Antibacterial and Anti-Cancerous Activity

Jasmine Jacob<sup>1\*</sup>, T. Augustine Arul Prasad<sup>1</sup> ,  
B. Scholastica Mary Vithiya<sup>2</sup>  and M. Rosaline Athisa<sup>2</sup>

<sup>1</sup>Department of Chemistry, Dwarakadoss Goverdhan doss Vaishnav College, University of Madras, Arumbakkam, Chennai - 600 005, Tamil Nadu, India.

<sup>2</sup>Department of Chemistry, Auxilium College, Thiruvalluvar University, Gandhi Nagar, Vellore - 632 115, Tamil Nadu, India.

## Abstract

Bimetallic nanocomposites have evolved into a significant smart material in the recent past. Owing to the growing interest, we herein report the biosynthesis of bimetallic silver doped copper (Cu-Ag) nanocomposites using green methods by utilizing aqueous extract of *Carica papaya* leaves. The optical property and the surface morphology of the nanoparticles were determined by using various analytical techniques like Fourier Transform Infrared Spectroscopy (FTIR), Scanning Electron Microscopy (SEM), Energy Dispersive X-ray Analysis (EDAX) and Transmission Electron Microscopy (TEM). The redox behaviour of the bimetallic nanocomposites was studied using Cyclic Voltammetry (CV) with platinum electrode in 0.1M KCl solution at different scan rates and concentrations. The FTIR revealed the presence of active components of the leaf extract which played the roles of surfactants, stabilizing, capping, and reducing agents. Similarly, SEM with EDAX exhibited the presence of spherically agglomerated Cu-Ag nanocomposites and TEM images revealed a particle size of 20 nm. The gradual increase in peak current was observed in CV with increase in the scan rates and concentrations apparently. The bimetallic nanocomposites showed potential anti-bacterial, anti-cancerous activity and the reports are provided in detail.

**Keywords:** Green synthesis, cyclic voltammetry, Electron microscopy, bimetallic nanoparticles, antibacterial, anti-cancerous

\*Correspondence: [jasminejacob215@gmail.com](mailto:jasminejacob215@gmail.com); +91 9884959150

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*S.C. Sujan Sumania*  
PRINCIPAL  
AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006.  
Vellore District, Tamil Nadu.



## A STUDY ON FACTORS AFFECTING JOB SATISFACTION OF TEACHING FACULTY IN RANIPET DISTRICT.

**Dr.E.Anitha Alice**

Assistant Professor, Dept. of commerce Auxilium college, Gandhi nagar, vellore

### Abstract

In this course of research, objective is to find out the factors affecting employees' job satisfaction in teaching faculty in Ranipet district. The study was carried out on 422 teachers of a faculties working in colleges. The paper aims to identify the factors influencing job satisfaction using Henry garratt ranking method. Mean score was done to find out the overall job satisfaction among teaching faculty. The finds that job autonomy, job advancement, security and managerial support and employees participation enhance the job satisfaction of employees.

### INTRODUCTION

Job satisfaction is an indicator of how well a person is doing his or her job. Human resource management is a important aspects of an organization. Success and failure of an organization depends mostly on the performance of employees. Job satisfaction is obviously an important factor for all organizations. Colleges must continuously improve employee satisfaction in order to stay profitable. Job satisfaction can be defined as an individual's general attitude toward his or her job. Price defined job satisfaction as the degree to which employees have a positive affective orientation towards employment by the organization. This study is generated from the consideration that job satisfaction is an important matter to bring faculties more productive, innovative and committed. The problem statement for this study is to find out the factors that affect job satisfaction of faculties working in Colleges. The purpose of this study is to analyze job satisfaction. The teaching sector is chosen as the population for the study. 109 colleges are considered in this study. Total 422 employees are taken as the sample of this

Human Resource Management is considered to be the most valuable asset in any organization. It is the sum-total of inherent abilities, acquired knowledge and skills represented by the talents and aptitudes of the employed persons who comprise of executives, supervisors, and the rank and file employees. It may be noted here that human resources should be utilized to the maximum possible extent, in order to achieve individual and organizational goals. It is thus the employee's performance which ultimately decides and attainment of goals. However, the employee performance is to a large extent, influenced by motivation and job satisfaction,

Job- satisfaction refers to one's feeling towards one's job. It can only be inferred but not seen. Job satisfaction is often determined by how well outcomes meet or exceed expectations. Satisfaction in one's job means increased commitment in the fulfillment of formal requirements. There is greater willingness to invest personal energy and time in job performance. The terms job-satisfaction and job attitudes are typically used interchangeably. Both refer to effective orientations on the part of individuals towards their work roles, which they are presently occupying.

### DEFINITION OF JOB SATISFACTION

According to Herzberg theory that job satisfaction is a function of motivators which contribute to job satisfaction and hygiene which lead to job dissatisfaction.

Locke defined job satisfaction as an emotional state related to the positive or negative appraisal of job experiences.





# INTERNATIONAL JOURNAL OF CREATIVE RESEARCH THOUGHTS (IJCRT)

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## A PRELIMINARY STUDY ON THE DIVERSITY OF BACTERIAL COMMUNITY IN THE GUT OF SPIDER *Gasteracantha geminata* Fabricius 1798

Author: 1st Rebecca Vinolia, 2nd Sindhuja G, A.F.Philomina, Yasmin.M.

Corresponding author: Dr.A.Mary Agnes.

Author: Assistant Professor, Research Scholar, Corresponding author: Associate Professor PG & Research Department of Zoology, Auxilium College (Autonomous), Vellore-6 Affiliated to Thiruvalluvar University Serkkadu, TN, India.

### Abstract

Spiders represents one of the most important components of global biodiversity, they are diversified which are ubiquitous expect for few niches. They are good indicators of environmental health. *Gasteracantha geminata* Fabricius 1798 an orb weber described in southern part of India was studied for the microhabitat present within the gut. The specimen was collected and the 16S rRNA was isolated from the V3 and V4 hyper variable region and sequenced using Illumina sequencing and the microbiome was studied which revealed it consists of 4 phyla and 6 Species.

**Key Words:** Spiders, Microbiome, Environment, 16S rRNA, *Gasteracantha geminata*

### Introduction

Spiders are diversified group of Invertebrate under phylum Arthropod belonging to Araneae. Spiders represent one of the most important components of global biodiversity. They are abundant and widespread in almost all ecosystems and play a significant role in ecology by being exclusively predatory thereby maintaining the ecological equilibrium (Sebastein and Peter, 2009; Riechert and Bishop, 1990). Spiders are also good indicators of environmental health. They play important roles in the dynamics of a specific habitat and are sensitive to habitat loss, climatic change, and environmental upheavals (Chetia et al., 2012). The ubiquity, diversity and ecological role of spiders make them a promising focal group (Hore, 2009). The origin of spiders can be dated back nearly 400 million years to the Devonian period. The abundance and resemblance of the spiders to their modern descendants can be dated back to the early tertiary period (almost 70 million years ago) Rainer Foelix, 1996. Recordings of spider diversity was done more than a century ago, from various parts of the world (Blackwall, 1864; Bonnet, 1945, 1955, 1961; Simon; 1897a, 1897b; Pocock, 1899, 1900a, 1900b, 1901; Sheriffs, 1919, 1927, 1928, 1929; Horell, 1877).





*Gasteracantha geminata* Fabricius 1798 belongs to the sub family Araenomorphae Family Araneidae. It is known as spiny orb-webs, it is an oriental species initially it was described from Ramnad in Tamilnadu state of southern India and distributed in India and Sri Lanka. (Pradeep et al., 2015; Pocock, 1900; Tikarder, 1982; Patel, 2003). They prefer undisturbed space, webs are seen among the bushes above 1.5 feet to 6.5 feet above the ground level. They exhibit sexual dimorphism, in male prosoma is black and the opisthosoma are creamy white with black patches on the marginal and ventral have numerous tubercles, opisthosoma consist of legs, in female the prosoma are brown and opisthosoma is hexagonal, white posteriorly and laterally with paired thick spins laterally the spins are of two sizes, posterior side it is separated but they have brown with yellowish brown patches on their legs in common.





BRINJAL  
 AUXILIUM COLLEGE (Autonomous)  
 Gandhi Nagar Vellore - 632 006  
 Vellore District, Tamil Nadu.



Short communication

## Investigation on the formation of self-assembled CdSe dendrite structures and their photocatalytic efficiency

X. Venci<sup>a,b</sup>, Amal George<sup>a</sup>, S. Rahul<sup>a</sup>, A. Dhayal Raj<sup>a</sup>  , A. Albert Irudayaraj<sup>a</sup>, R.L. Josephine<sup>c</sup>, S. John Sundaram<sup>a</sup>,  
K. Kaviyarasu<sup>d,e</sup>  

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## Abstract

The rapid growth in science and technology has indeed contributed for the modernization, urbanization and the rising of the economic status of the society causing at the same time the adverse effects that pollute nature and its environment. Photocatalysis is one of the favorable techniques which in some way can tackle this problem faced by modern society. The pollution caused owing to the development of industries can be reduced by detoxifying the pollutants in water resources using semiconductor nanomaterials as they swiftly produce radicals that can degrade the pollutants with high reactivity. This present work discusses the synthesis of CdSe nano structures *via* hydrothermal method and their effects on the reaction time and temperature on the properties of the CdSe nanostructures were investigated by subjecting them to various characterization studies such as X-ray diffraction (XRD), transmission electron microscopy (TEM), ultra violet visible (UV-vis) absorption spectroscopy and fourier transform infra-red spectroscopy (FTIR) and their results were elucidated based on the structural, morphological, optical, and vibrational properties of the synthesized particles. The effect of reaction time on the synthesized CdSe nanostructures showed that the crystallite size increases with increase in reaction time and its size ranges from 9nm to 35nm. Similarly, the effect of reaction temperature on the synthesized CdSe nanostructures displayed its size ranging from 15nm to 35nm with increase in the crystallite size with respect to the raise in the reaction temperature. The TEM images which exhibit the morphological structure of the samples exposed agglomeration of rod-like structure with respect to the variation in reaction time and temperature and more specifically CdSe nano dendrite structure was formed at a temperature 180°C with systematic crystallization and strong anisotropy. The investigation of the optical properties of the CdSe samples at all conditions showed a shift towards blue region indicating its special characteristics of fitting into nanosized particles. The bandgap energy obtained from *Tauc's plot* was ranging from 1.93 eV to 2.11 eV confirming that the decrease in particles size favored increase in bandgap energy. Based on the morphology and on the investigation of the structural and optical properties of the synthesized samples, the obtained dendrite CdSe nanostructures were explored for the



# Studies on the Physico-chemical Parameters and Correlation Coefficient of Dharapadavedu Lake, Vellore Tamilnadu, India

K. Santhi <sup>a</sup>, N. Uma Chandra Meera Lakshmi <sup>a\*</sup>  
and M. Noornissabegum <sup>b</sup>

<sup>a</sup> Department of Zoology, Auxilium College, Vellore, Tamil Nadu, India.

<sup>b</sup> Department of Zoology, Ethiraj College for Women, Chennai, Tamil Nadu, India.

## Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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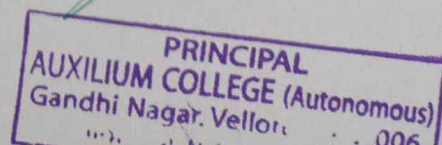
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## ABSTRACT

The present studies were carried out based on the physical-chemical parameters and the correlation coefficient of Dharapadavedu Lake. Monthly changes in physicochemical parameters such as Water Temperature, Turbidity, pH, Alkalinity, EC, Hardness, Phosphate, Calcium, Magnesium, Nitrate, Nitrite Sulfate, Phosphate, Chloride, Ammonia, Fluoride, Bio-Chemical Oxygen Demand (BOD), and Chemical Oxygen Demand (COD) were analyzed for a period of one year from January to December 2021. The results indicated that the physicochemical parameters of the water were within permissible limits and could be used for fish culture, domestic use, and irrigation. The correlation coefficient indicates positive and negative relationships. All the correlations indicate

\*Corresponding author: Email: esthersanathi502@gmail.com;



# Opportunities and Challenges of Women Entrepreneurs Engaged in Biodegradable Products Business at Vellore District of Tamil Nadu State

K. Kalavani<sup>1</sup> and T. Bharathi<sup>2</sup>

<sup>1</sup> Department of Commerce, Auxilium College (Autonomous), Vellore, India  
kalaicommerce88@gmail.com

<sup>2</sup> PG & Research Department of Commerce, D.K.M College for Women, Vellore, India  
bharathi2708@gmail.com

**Abstract.** Role of women in the society has been seeing a paradigm shift ever since women became self-aware. More and more women today are moving out of their comfort zone and trying their hands at things to one ever measured they were capable of many women are stepping out of their homes into workplaces. "Women Entrepreneurship is the professional application of knowledge, skills and competencies and/or of monetizing a new idea, by an women or a set of Self-help group women's by launching and enterprise de novo or diversifying from an existing one (distinct from self-employment as in a profession or trade) thus to pursue growth while generating wealth, employment and social good" The problems and challenges which are faced by women have different dimensions and Extent; this is because of various social and cultural reasons. The collective effects of psychological, social, economic and educational factors to women entrepreneurs, entering to mainstream has an angle of gender discrimination as well which has been seen in many societies that affect the women in industry too. In the last few decades, the stricter rules and regulation and global pressure to mitigate and decrease the carbon emissions all over has encouraged the corporate to look into the issue of depleting natural resources and environmental diversity. Many biodegradable products are available in the market to avoid environmental pollution. Some examples are Areca plates, Bamboo Basket, Hibiscus leaves cups etc., The areca plates and cups were used in Birthday parties, family functions and other events, areca leaf cups used to provide Paripuri in the street shops to avoid plastic cups. These encourage the women entrepreneur to make or sell the products based on biodegradable. The purpose of this research is to study in detail and to offer possible suggestions to overcome the problems and challenges faced by women entrepreneur those who are engaged in biodegradable products business in Vellore District, Tamilnada state.

**Keywords:** Women Entrepreneurship - Biodegradable Products - Role of women entrepreneurs - Ecopreneurs

*Sr. Jaya Lakshmi*

PRINCIPAL  
AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006,  
Vellore District, Tamil Nadu.

# Cytotoxic, Antidiabetic, and Antioxidant Study of Biogenically Improvised *Elsholtzia blanda* and Chitosan-Assisted Zinc Oxide Nanoparticles

Athisa Roselyn Maheo, Scholastica Mary Vithiya B, Augustine Arul Prasad T,\* V. L. Mangesh, Tamizhdurai Perumal,\* Wahidah H. Al-Qahtani, and Mani Govindasamy\*

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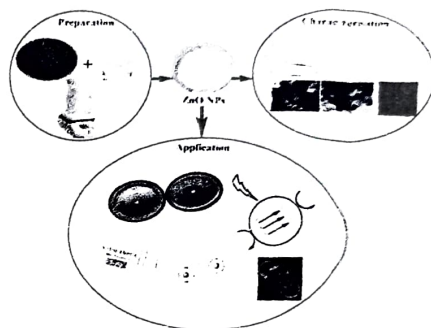
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**ABSTRACT:** In the present study, we have improvised a biogenic method to fabricate zinc oxide nanoparticles (ZnO NPs) using chitosan and an aqueous extract of the leaves of *Elsholtzia blanda*. Characterization of the fabricated products was carried out with the help of ultraviolet–visible, Fourier transform infrared, X-ray diffraction, field emission scanning electron microscopy, high-resolution transmission electron microscopy, selected area electron diffraction, and energy-dispersive X-ray analyses. The size of the improvised ZnO NP measured between 20 and 70 nm and had a spherical and hexagonal shape. The ZnO NPs proved to be highly effective in the antidiabetic test as the sample showed the highest percentage of enzyme inhibition at  $74\% \pm 3.7$ , while in the antioxidant test, 78% was the maximum percentage of 2,2-diphenyl-1-picrylhydrazyl hydrate scavenging activity. The cytotoxic effect was investigated against the human osteosarcoma (MG-63) cell line, and the  $IC_{50}$  value was 62.61  $\mu\text{g/mL}$ . Photocatalytic efficiency was studied by the degradation of Congo red where 91% of dye degradation was observed. From the various analyses, it can be concluded that the as-synthesized NPs may be suitable for various biomedical applications as well as for environmental remediation.



## 1. INTRODUCTION

Fabrication of low-cost, simple, and nonhazardous nanoparticles (NPs) is gaining huge momentum with an ever-new product on the rise. Their small size and large surface area are their greatest advantages. Advancement in nanotechnology is indispensably associated with modernization and advancement in all spheres of human existence. The impact of nanotechnology includes in science, drugs, healthcare, machinery, space programs, information technology, electronics, optics, catalysis, environmental remediation, agricultural practices, and so forth. Hollow C@SnS<sub>2</sub>/SnS nanocomposites used as electrocatalyst,<sup>1</sup> ZnS–Ag<sub>2</sub>S NPs used for photothermal detection of a transcription factor,<sup>2</sup> fluorescent ZnO–Au nanocomposite as a probe to elucidate DNA interaction,<sup>3</sup> and hybrid Ag–Fe<sub>3</sub>O<sub>4</sub> obtained with the aid of *Rubia tinctorum* as a reductant and a stabilizing agent<sup>4</sup> are some examples on the importance of nanotechnology.

Previously, many NPs with excellent biological as well as chemical applications have been synthesized via chemical/physical methods. This, however, has the disadvantage of using hazardous substances. The green method of synthesizing NPs is gaining ground in recent years. An alternative to the conventional method of NP synthesis is the cleaner and greener method involving bacteria, algae, yeast, actinomycetes, or plant parts as this entails no perilous or hazardous substances. Size-

dependent antibacterial activity of ZnO NPs that were synthesized using the leaf extract of *Dysphania ambrosioides* was observed.<sup>6</sup> A comparative study was made between green-synthesized and chemically synthesized copper oxide NPs by Sabeena et al.<sup>7</sup> Many metallic and metal oxide NPs such as palladium NPs,<sup>8,9</sup> silver NPs,<sup>10</sup> copper oxide NPs,<sup>11,12</sup> and bimetallic copper–silver NPs<sup>13</sup> are synthesized using different plant parts which have very useful biological and chemical applications. An added advantage to the use of plant parts is that the phytochemicals from plants enhance the properties of the NPs. The biomolecules that are found in plant parts serve as excellent reducing, stabilizing, and capping agents in the green manufacturing of NPs. They are directly responsible for reducing the metal precursors to their nanosize. Akhavan et al. used ginseng, a herbal medicine, as a green reductant to obtain reduced graphene sheets.<sup>14</sup> The leaf extract of *Eucalyptus*

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S. C. Raja Sankar

**A CONCEPTUAL STUDY ON BIODEGRADABLE PRODUCTS AND ITS BUSINESS PROSPECTS AMONG THE WOMEN ENTREPRENEURS IN TAMILNADU**

Dr. T. BHARATHI, Assistant Professor, PG & Research Department of Commerce (Aided), D.K.M. College for Women (Autonomous), Sainathapuram, Vellore, Tamilnadu  
K. KALAIVANI, Head i/c, Assistant Professor, Department of Commerce (Banking & Insurance), Auxilium College (Autonomous), Katpadi, Vellore, Tamilnadu

**Abstract**

The purpose of this paper is to identify the business opportunities available among the Women Entrepreneurs. It will guide the women entrepreneur to choose the bio degradable products business at their own place to promote the environment sustainability in the new business era. The business investment is always based on the quality of output that business can produce in terms of profit, wealth, net worth, long term sustainability of the business needs in the society. This can be fulfilled with this bio degradable business prospects to earn a ease profit with less investment. It can be the opportunity for all the women entrepreneurs who need commercialization of their innovation.

**Introduction**

A bio degradable product that breaks down quickly is compostable. Compostable products are made of organic materials that can decompose naturally. The resulting material is rich minerals. Bio degradable substances include food scraps, cotton, wool, wood, human and animal waste, manufactured products based on natural materials (such as paper, and vegetable oil based soaps). Bio degradable products or materials are naturally broken down by biological agents, such as bacteria and fungi, into raw materials. The goal of supplementing bio degradable products in your everyday life store cycle our natural resources and keep the earth clean and free of growing landfills.

**Research Questions**

In this study an attempt has been made to identify the answers for the research questions listed as follows:

1. What are the benefits of Bio degradable products towards environmental sustainability in Tamilnadu State?
2. What are the business prospects available to the Women Entrepreneur through this bio degradable products business in Tamilnadu State?
3. What can be a suggested as conceptual model to determine the bio degradable products business of women entrepreneur that can develop the Sustainable development Goals 2030 Agenda?

**Advantages of Biodegradable Products**

Bio degradable products are those that can be broken back down into their component parts overtime by the action of biological organism and processes. Paper and textile products are bio degradable, but traditional plastics made from petroleum base are not. Consumer packaging and disposal eating products made of new bio degradable plastics from corn and other plant base have numerous environmental and efficiency advantages over non bio degradable products.

**Fuel Efficiency:** Bio degradable plastic production process take 65 percent less energy than required to produce petroleum based plastics, the restaurant supply industry leader in the U.S., making bio degradable plastics that open energy efficient choice. Bio degradable products are made from renewable sources like corn, sugarcane and potato starch instead of oil: 2,00,000 barrels of oil a day are presently used in the United States alone in the manufacture of plastic packaging, and significant portions of this use could be eliminated by employing bio degradable plastic products.

**Less Pollution:** Manufacturing bio degradable consumer produces far less pollution. Because the products can be break back down into toxic components, they don't cause dangerous chemical each at that can poison water off gassing that can pollute the air. Bio degradable plastic consumer products produce 68 percent less green house gases than petroleum-based plastic products.





# Magnetohydrodynamics and Aspect Ratio Effects on Double Diffusive Mixed Convection and Their Prediction: Linear Regression Model

Shivananda Moolya<sup>a,b</sup>, Satheesh Anbalagan<sup>\*a</sup>, Neelamegam Rajan Devi<sup>c</sup>, Rekha Moolya<sup>d</sup>

<sup>a</sup>School of Mechanical Engineering, Vellore Institute of Technology, Vellore, Tamilnadu, INDIA-632014.

<sup>b</sup>University of Technology and Applied Sciences, PO Box 74, Al-Khuwair Postal code 133, Sultanate of Oman.

<sup>c</sup>Department of Physics, Auxilium College (Autonomous), Tamilnadu, INDIA-632006.

<sup>d</sup>Gopalan College of Engineering and Management, Bangalore, Karnataka, India, 560048.

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Optimization

## ABSTRACT

Magnetohydrodynamic application in the biomedical field made the researcher work more on this field in recent years. The major application of this concept is in scanning using laser beams, delivering a drug to the targeted points, cancer treatment, enhancing image contrast, etc. These applications are depending on the flow and heat transfer properties of the magnetic conducting fluid and on the geometry of the flow field. An increase in the demand for the miniature in the shape and size of the clinical devices attracts the researcher to work more on design optimization. In this study optimization of magnetic field strength, geometry of domain, Prandtl number, Reynolds number for a steady, incompressible double-diffusive flow is performed using Taguchi and Analysis of variance technique. Linear regression model is used to predict the average Nusselt and Sherwood numbers. Numerical simulations were performed using finite volume method (FVM) based numerical techniques. Experiments are designed based on Taguchi orthogonal array and FVM based numerical codes were used to obtain the results. Results show that an increase in the aspect ratio from 0.5 to 2.0 improves the heat transfer rate by 62.0% and the mass transfer rate by 38.5%. As the Prandtl number increases from 0.7 to 13.0, heat transfer rate increases by 80.0% and mass transfer by 75.0%. This specific study could be applied in designing of solar ponds and to investigate heat and mass transfer effects during cancer treatments.

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## 1. Introduction

Double diffusive mixed convection is widely used in many industrial and medical applications like solar ponds, material processing, Drug delivery systems, cancer treatments, solar air conditioning, packaging of electronic items, food processing, etc. Considering the wide application of double-diffusive mixed convection in the industrial and medical areas, further study is required to optimize the parameter influencing heat and mass transfer for maximum performance. Several numerical studies have been performed for the optimization of heat and mass transfer of the cavity

flow. Rodrigues et al. [1] performed optimization of the geometry of the lid-driven cavity with two fins inside the cavity for mixed-type convection. They found that the asymmetric geometry of the fin plays a major role in controlling the temperature. Baag et al. [2] numerically studied the MHD effect using micropolar-type fluid flow on a vertical surface. They found that backflow is controlled by opposing buoyancy parameters. Khader and Megahed [3] used the Finite Difference Method to analyze the heat transfer on a liquid thin film over a stretching sheet using a numerical method. Li et al. [4] performed optimization

\*Corresponding Author: Satheesh Anbalagan  
Email: [satheesh.a@vit.ac.in](mailto:satheesh.a@vit.ac.in); [egsatheesh@gmail.com](mailto:egsatheesh@gmail.com)

Dr. Tygo Suresh  
PRINCIPAL  
AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006.  
Vellore District, Tamil Nadu.



## Quantitative analysis of selected medicinal plants using ethanol extract

G. Sindhuja<sup>1</sup>, \*Dr. A. Mary Agnes,<sup>2</sup> A.F. Philomina<sup>3</sup>, Yasmin .M<sup>4</sup>

PG & Research department of Zoology, Auxilium college (Autonomous), Affiliated to  
Thiruvalluvar University, Vellore, India  
Email- sindhuravi2131@gmail.com

### Abstract

The present study aimed to determine the phytochemical compounds of the *Senna auriculata* flower, *Gymnema sylvestre* leaves, *Eugenia jambolana* seed, and *Cissus quadrangularis* using ethanol extract. Phytochemical analysis showed the presence of alkaloids, flavonoids, phenols, saponins, and tannins. Flavonoid, tannins compounds are very high when compared to others followed by saponins compounds. Compounds derived from plants can be used in biological research. *S. auriculata*, *G. sylvestre*, *Eugenia jambolana* and *Cissus quadrangularis* analysis revealed its vast role as an ideal antibacterial, antioxidant, anti-inflammatory, anti-diabetic, and wound healing agent.

Key words – Quantitative analysis, *Senna auriculata*, *Gymnema sylvestre*, *Cissus quadrangularis* and *Eugenia jambolana*, ethanol extract.

### Introduction:

*Senna auriculata* (L), belongs to the family: Leguminosae. It is mostly found in dry areas of India and Sri Lanka. In Sri Lanka, it is common along the sea coast and in the arid zone. The leaves are alternating, stipulating, thin, and hairy, measure 2-2.5cm in length and 1-1.3cm in width. Its flowers are irregular, bisexual, bright yellow, and enormous (almost 5cm across), with glabrous pedicels 2.5cm long. The fruit is a short legume, 7.5-11cm long, 1.5cm broad, flat, thin, and pale brown. Each fruit contains 12-20 seeds in its own cavity. This plant is reported to contain cardiac glycoside (sennapicrin) while the leaves and bark produce anthraquinones and tannins, etc<sup>1</sup>.

In India, various components of the *S. auriculata* plant, including the bark, flowers, leaves, roots, and mixtures of unripe fruits, are combined to make a medicine known as "Avarai Panchaga Choornam." This medicine is used to treat conditions such as high blood sugar, urinary tract infections, conjunctivitis, and ophthalmia<sup>2</sup>. Similarly, the leaves, roots, and flowers of *S. auriculata* have exhibited exoteric and anti-diabetic effects. *Senna* was known to physicians from the very old days and was included in Unani medicine. It is widely used in Indian traditional medicines and flowers are used for diabetes and leaves and flowers to treat skin diseases<sup>3</sup>. The flower and leaf extracts have antidiabetic activity in experimentally induced diabetes rats<sup>4,5</sup>. The present study was analyzed for phytochemical analysis of *Senna auriculata*.

Dr. Mary Agnes

PRINCIPAL  
AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006.  
Vellore District, Tamil Nadu.

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**A STUDY ON PREFERENCE OF CONSUMER TOWARDS DIGITAL WALLET IN  
VELLORE CITY, TAMILNADU**

**G. BHARATHI**, Ph.D. Research Scholar in Commerce, Auxilium College (Autonomous), Vellore,  
Tamilnadu (Affiliated to Thiruvalluvar University)

**Dr. S. AUXILIA ANTONY**, Assistant Professor, Research Guide & Head, PG Department of  
Commerce, Auxilium College (Autonomous), Vellore, Tamilnadu (Affiliated to Thiruvalluvar  
University)

**Abstract**

A Digital Wallet is known as an e-wallet that fits into various categories like an electronic device, online service, and software program that allow one party to make electronic transactions with another party bartering digital currency unit for goods and services ex: Pay tm, Google pay, m Rupee, MobiKwik, ICICI Pockets, etc. In the present scenario, the majority of people from Vellore desire to purchase needful items through digital wallets. Digital wallets provide convenient elucidation for any business and allow consumers to purchase their products online easily. Consumers are moving towards operating digital transactions rather than regular transactions because it offers many adequacies to the consumers. After demonetization, e-wallet has secured a prominent place among people and attained tremendous growth but still, large numbers of people in India hesitate to do online transaction. The main aim of the study is to analyze the transaction preference of consumers towards digital wallets and to examine the difficulties of consumers while using the digital wallet in their online transactions. Data will be collected through a structured questionnaire of 100 respondents from Vellore city and a Random sampling technique is to be used to select the respondents concerning different age groups, students, professionals, online vendors, e-retailers, and homemakers.

**Keywords:** Digital wallet, Consumer, Transaction

**Introduction**

The development of technology and technological advancement made electronic devices become an essential part of the daily life of people. Electronic devices are used as a source of communication devices social tools, entertainment, internet, and even as a payment tool. Digital wallets with the support of mobile technology allowed the owners of smartphones to carry out many financial transactions. Digital wallets allow the user to store multiple credit cards, debit cards, and bank account no in a secure environment. Nowadays consumers are preferred digital wallets like Paytm, Phonepe, G pay, Mobiwiki, etc. Thus, the study is entirely focused to evaluate the preference of consumers toward Digital wallets in Vellore City.

**Literature Review**

Mathew Abraham (2020) Found that customers are worried about the privacy of such transactions, internet connectivity issues, and payment restrictions for a huge amount.

Manjunatha and Vijendra Shenoy (2020) in her study found that digital wallet is getting more and more trendies among consumers and it is popular among the young lot such as students and employees.

Vivek and Samuel Anbu Selvan (2021) in their study revealed the customer preference toward digital wallets. A sample of 50 respondents from Madurai city was collected through Structured Questionnaires, the data was examined with the help of percentage analysis and ANOVA was used to find out the factor influencing the customer preference for mobile wallets and the impact of demographic factors such as age, gender education qualification. The study arises with the conclusion that there is important and most used one of the important and most used customers lacks financial literacies and technical awareness of D- wallet.

REVIEW

Open Access



# Cell surface GRP78: a potential mechanism of therapeutic resistant tumors

Rajalakshmi Amareesan<sup>1</sup> and Udhayakumar Gopal<sup>2\*</sup>

## Abstract

GRP78 is a protein that acts as a chaperone within the endoplasmic reticulum (ER) and has multiple functions. It is induced by stress and abets cells from survival. Despite, multiple Stress conditions like ER, chronic psychological and nutritional stress, hypoxia, chemotherapy, radiation therapy, and drug resistance induce cell surface GRP78 (CS-GRP78) expression in cancer cells. Further, CS-GRP78 is associated with increased malignancy and resistance to anti-cancer therapies and is considered a high-value druggable target. Recent preclinical research suggests that targeting CS-GRP78 with anti-GRP78 monoclonal antibodies (Mab) in combination with other agents may be effective in reversing the failure of chemotherapy, radiotherapy, or targeted therapies and increasing the efficacy of solid tumors treatment. This article will review recent evidence on the role of CS-GRP78 in developing resistance to anti-cancer treatments and the potential benefits of combining anti-GRP78 Mab with other cancer therapies for specific patient populations. Furthermore, our limited understanding of how CS-GRP78 regulated in human studies is a major drawback for designing effective CS-GRP78-targeted therapies. Hence, more research is still warranted to translate these potential therapies into clinical applications.

**Keywords** CS-GRP78, Chemoresistance, Radioresistance, Drug resistance, ER-stress, C38 monoclonal antibody, anti-GRP78 autoantibody

## Introduction

Endoplasmic reticulum stress (ERS) in solid tumours is caused by an imbalance in protein synthesis, folding, and secretion and abnormal glycosylation, which is exacerbated by microenvironmental factors such as lack of nutrients, hypoxia, excessive oxidative stress, and long-term viral infection [1, 2]. Tumour cells activate the unfolded protein response (UPR) to cope with ERS, which is controlled by three ER transmembrane sensors: inositol-requiring transmembrane kinase/

endoribonuclease 1 $\alpha$  (IRE1 $\alpha$ ), activating transcription factor 6 (ATF6), and protein kinase R-like ER kinase (PERK). These sensors are kept inactive in normal cells by their association with the ER chaperone protein glucose-regulated protein 78 (GRP78), also known as binding immunoglobulin protein/Heat shock protein family A (HSP70) member 5 (BiP/HSPA5) [3]. When there is an excessive load of client proteins, GRP78 dissociates and binds unfolded or misfolded proteins, allowing the sensors to activate signalling pathways that restore protein folding and secretion [4]. A prolonged state of ERS activates the transcription factor CHOP (CCAAT/enhancer-binding protein homologous protein), potentially leading to apoptosis [5]. Typical of ERS factors, GRP78 may also regulate the transcription of genes related to cell survival and apoptosis. This highlights the importance of

\*Correspondence:

Udhayakumar Gopal  
ugopal@umc.edu

<sup>1</sup>Department of Zoology, Auxilium College, Gandhi Nagar, Vellore 632 006, Tamil Nadu, India

<sup>2</sup>Department of Neurosurgery, University of Mississippi Medical Center, Jackson, MS 39216, USA



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**AUXILIUM COLLEGE (Autonomous)**  
**Gandhi Nagar, Vellore - 632 006.**  
**Vellore District, Tamil Nadu**



# Caputo Fractal Fractional Order Derivative of Soil Pollution Model Due to Industrial and Agrochemical

P. Priya<sup>1</sup> · A. Sabarmath<sup>1</sup>

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## Abstract

This paper narrates a non-linear and non-local Caputo fractal fractional operator of eco epidemic model with the advance of soil pollution considered in five compartments. The qualitative analysis of solutions such as existence and uniqueness of the model is carried out by using the standard condition of Schauder's fixed point theorem and Banach Contraction principle. The local and global stability are characterized with the help of basic reproduction number. The Ulam-Hyer stability is analyzed for the small perturbation. The Power law kernel is used to get a reliable result for the soil pollution model. Analytical solution studied by means of Modified Euler method. Numerical simulation of Euler scheme algorithm is performed to show the effects of various fractional orders ( $0.5 < \eta < 1$ ) and validating the theoretical parameter values of real time data by the support of MATLAB.

**Keywords** Agrochemical · Fractal dimension · Power law kernel · Euler method · Ulam Hyer stability

## Introduction

Environmental pollution is a world's greatest problem facing humanity and leading environmental issues of mortality and mobility. In this regard, soil is a natural resource which contains organic material, water, air and weathered. It is an important aspect for living organism in the form of agricultural soil. The main global issue is a contamination of soil occurs due to pesticides, fertilizers, compost, substandard manure, anthropogenic activities and industrial activities. In addition to this the immeasurable quantities of human-made unwanted products, sludge and new waste treatment plants. Also, the treacherous polluted water leading or causing to soil pollution.

The pollution is due to agricultural run-off and heavy metals that has been studied by various authors [14, 18, 25, 44, 45]. Nazzal et al. [31] reported the case study in Punjab where there is a huge amount of agrochemicals like fertilizers, pesticides, fungicides, weedicides are used in agricultural soil which are ultimately increase the heavy metals in the agricultural

✉ P. Priya  
priyabarath612@gmail.com

<sup>1</sup> PG and Research Department of Mathematics, Auxilium College (Autonomous), Thiruvalluvar University, Tamil Nadu, India

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AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006.  
Vellore District, Tamil Nadu.

**A STUDY ON IMPACT OF ONLINE SHOPPING AMONG CONSUMERS UPTO 30 YEARS  
OF AGE IN VELLORE CITY**

**Dr. S. KAYALVIZHI**, Assistant Professor of Commerce, Muthurangam Government Arts College  
(Autonomous), Vellore, Tamilnadu

**N. MEENA**, Assistant Professor in Commerce, Auxilium College (Autonomous), Vellore,  
Tamilnadu

### Abstract

Internet technology is a primitive precursor of the information superhighway, a theoretical goal of computer communication to provide schools, libraries, businesses, and homes universal access to quality information that will educate, inform, and entertain. This study is mainly deals with consumer preference of using the internet and the impact of social media with main reference to online shopping. From this study the consumers purchase the products through online due to convenience, saves time and money, wide range of products from one place. Moreover, they are also purchasing through e-bay more than one product. They relate the information about online shopping by using the search engine and famous social networking site known as Facebook.

### Introduction

The internet is a network of networks, i.e., the interconnection of computer networks that enables connected machines to communicate directly. The term popularly refers to a particular global interconnection of Government, education, and business computer networks that is available to the public. There are also smaller internets, usually for the private use of a single organization, called the Internets. The Internet is an enormous source of information: computer software, newspapers, Magazines, graphics, library books, articles and literature on philosophy, religion, history, science, art, health and so on. Locating and retrieving information is the key problems. While part of this requirement can be fulfilled through E-Mail, other types of search tools are essential to do this task. There are major search tools that are essential to do many tasks.

### Features of Online Services

This is another area where companies can exploit the internet. Many companies are using the internet to provide customer service. Some of the capabilities which an electronic market place has, which speak of their potential, are:

- **Instantaneous communication:** It helps to communicate between the various participants of business systems. It also helps in producing "time to market" for new products.
- **Global access:** The products or services offered through the electronic markets have a global reach and give access to large markets and new markets.
- **Customization:** By offering the capability to offer goods and services in real time, the ability to customize goods to the needs is higher.
- **Increased availability:** E-Commerce offers greater availability; company's products are available at all time on all days i.e. 24\*7\*365.

### Impact on Society

Even though computer interaction is in its infancy, it has dramatically changed our world, bridging the barriers of time and distance, allowing people to share information and work together. Evolution toward the information, superhighway will continue at an accelerating rate, available content will grow rapidly, making it easier to find any information on the Internet. New applications will provide secure business transactions and new opportunities for commerce. Now technologies will increase the speed of information transfer, allowing direct transfer of entertainment-on-demand. Broadcast television may be replaced by incest, in which each home receives a signal, especially tailored for what its residents want to see when they want to see it. The explosive growth of the Internet has raised a significant censorship issue; a call for voluntary standards among Internet

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## **A Study On Consumer Buying Behavior Towards Online Shopping In Vellore City – 632006, Tamil Nadu, India**

**Ms. ASWINI N**

Assistant Professor and Ph.D. Research Scholar in Commerce, Auxilium College (Autonomous), Vellore,  
Tamilnadu, India

**Dr. S. AUXILIA ANTONY**

Head and Assistant Professor, Research Guide & Supervisor  
PG Department of Commerce, Auxilium College (Autonomous), Vellore, Tamilnadu, India

**ABSTRACT** *In the current era, shopping has become a trend. People do not just prefer retail shopping but also are shifting to online shopping. Due to the easy approach of internet facilities and busy schedule of people in Vellore, they are making utilize of online shopping as it is trouble-free for them in various ways. Online shopping is a task of buying goods and services over the internet. With the help of World Wide Web online retailers can sell their products to people who acquire online. Now-adays, customers are moving operating online shopping rather than regular shopping as it offers many usefulness to the customers. The main aim of this study is to study the behavior of consumer in Online Shopping and to identify factors influencing online shopping Data will be collected through a structured questionnaire of 120 respondents from Vellore city and Random sampling technique will used to select the respondents and they belong to different age group, students, professionals, business people, homemakers.*

**Key Words:** Online Shopping, Consumers, Internet

### **INTRODUCTION**

In the present world, for each and every busy life now online shopping is the effortless solution. In the over decade, there had been a huge change in customer buying behavior. Even with spreading use of internet in India contributes a developing chance for online shopping. Several companies are proceeding virtual that is they are providing people with website/online platform to make their shopping more suitable and comfortable. People now a days are so busy that they need something really short and simple even if

*Dr. S. Auxilia Antony*

PRINCIPAL  
AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006.  
Vellore District, Tamil Nadu.





**Dr.N.Sathya**, Assistant Professor, Department of Commerce, **Auxilium College** (Autonomous),  
Vellore, Tamil Nadu. ([sathyan@auxiliumcollege.edu.in](mailto:sathyan@auxiliumcollege.edu.in))

### Abstract

Many countries around the world are affected by COVID-19, which has severely impacted the lives of billions of people. As covid-19 and omicron has become a worldwide pandemic and consumers have changed their buying habits, consumers are switching to a more health and hygiene-based lifestyle and to move towards online shopping. Therefore, this study focuses on, to clarify the impact of online purchase reasons, adoption of online shopping during pandemic and post pandemic and the main aim of the study is to know the consumer buying behaviour and the factors that influence the consumer behaviour towards online shopping specially during post pandemic times. The study was conducted by collecting the personal information from the respondents to proceed with the data analysis compilation.

**Key words:** Consumer, buying behaviour, demographic factor, and online shopping.

### Introduction

Many countries around the world are affected by COVID-19, which has severely impacted the lives of billions of people. As covid-19 and omicron has become a worldwide pandemic and consumers have changed their buying habits, consumers are switching to a more health and hygiene-based lifestyle and to move towards online shopping. Therefore, this study focuses on, to clarify the impact of online purchase reasons, adoption of online shopping during pandemic and post pandemic and the main aim of the study is to know the consumer buying behaviour and the factors that influence the consumer behaviour towards online shopping specially during post pandemic times. As we are in the pandemic situation, it is essential to know the buyer behaviour patterns and their interest towards online shopping because of their safety and security towards their life.

### Statement of the Problem

In recent years, buying goods online is becoming an increasing trend, due to availability, any time shopping, convenient payment method, product description, variety and security. But still some issues are faced by the consumers while buying goods in online store, due to absence of trust and inability to touch the product, fear of cyber-crimes and other frauds. However the future for online shopping looks bright.

### Scope of the Study

- The scope of this study helps in analysing consumer buying behaviour during pandemic and post pandemic situation.
- The scope of the study has been conducted by taking sample in Vellore city which covers 100 samples only.
- This study may help the future researchers to improve the consumer buying behaviour through online mode during pandemic and post pandemic period.

### Objectives of the Study

- 1) To analyse the consumer buying behaviour in adoption of online shopping as an outgrowth of pandemic lockdown.
- 2) To identify the various factors that influence the buying behaviour of consumers during COVID-19 pandemic and post pandemic situations.
- 3) To provide suggestions for improvement of online shopping for future pandemic situations.



## A Graphical Analysis of Mosquito Infection Model with Host and Vector Population

Naga Soundarya Lakshmi V.S.V.\* and Sabarnathi A.

Department of Mathematics, Auxilium College, Vellore, India

\*Corresponding Author

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**Abstract:** A mosquito infection model was formulated consisting of SIR (Susceptible-Infectious-Recovered) with exposed and carrier class for humans as host and SI (Susceptible-Infectious) with exposed class for mosquitoes as vector. Numerical simulations were carried out for the diseases Malaria, Dengue and Chikungunya. The graphs on susceptible, exposed, carrier, infectious and recovered were given for the different values of parameters involved in the model. The comparative graphical study was done on the state variables.

**Keywords:** Mosquitoes, Malaria, Dengue, Chikungunya, *Anopheles*, *Aedes aegypti*, Infection model

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### Introduction

Mosquito is an insect which is common in the world. There are more than 3,500 types of mosquitoes worldwide. When a mosquito bites an infected person or animal, it gets infected. Those can spread germs by a bite to others. A mosquito pierces the skin to suck up blood and it inserts saliva in the skin. Our body gets a bump and itching because of a bite. Some have a mild reaction while most of them has more strong reaction.

A bite of an infected mosquito spreads the Mosquito-borne diseases such as Zika virus, West

Nile virus, Chikungunya virus, Dengue, and Malaria. Not everyone infected with a mosquito-borne germ gets sick, but mosquito-borne diseases can cause death in severe cases. We can prevent mosquito bites by using mosquito repellents on skin and clothing, in indoors using bed nets in sleeping areas that are not screened and working outdoors during day times, wear long-sleeved shirts and long pants.

Malaria, Dengue and Chikungunya are the predominant diseases caused by mosquitoes in India. Mathematical models are widely used for

PRINCIPAL  
AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006,  
Vellore District, Tamil Nadu.

AUXILIUM COLLEGE  
Gandhi Nagar, Vellore - 632 006,  
Vellore District, Tamil Nadu.



# Nano zinc oxide and nano bioactive glass reinforced chitosan/poly(vinyl alcohol) scaffolds for bone tissue engineering application

P. Narmatha Christy<sup>a</sup>, S. Khaleel Basha<sup>b</sup>, V. Sugantha Kumari<sup>a,\*</sup>

<sup>a</sup> PG and Research Department of Chemistry, Auxilium College (Autonomous), Vellore 632006, Tamil Nadu, India

<sup>b</sup> PG and Research Department of Chemistry, C. Abdul Hakeem College, Melvisharam 632509, Tamil Nadu, India

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## ABSTRACT

The present study was to develop a hybrid chitosan-based bionanocomposite for potential bone tissue engineering applications. Chitosan (C)/Poly(vinyl alcohol) (P)/nano bioactive glass (B)/nano Zinc Oxide (Z) were fabricated by sol-gel assisted solvent casting method. In this method, several CPBZ nanocomposites have been studied by varying the ratios of nano ZnO (0.05%, 0.1%, 0.2%) to yield CPBZ1, CPBZ2 and CPBZ3 hybrid scaffolds. TEM, FESEM- EDAX, XRD and FTIR analyses were performed to characterize the macrostructure of CPBZ bionanocomposites. Nano ZnO of size 20 nm and nano bioactive glass of size 6–10 nm was synthesized and characterized by TEM analysis. The in vitro bioactivity studies confirmed the formation of apatite minerals that results in direct bone bonding implant. SEM revealed the macroporous structure with a pore size of about 10 μm and hydrophilic rough surface. The phase composition of nano ZnO embedded in CPBZ scaffolds was examined by XRD. The characteristic functional groups and the chemical interactions associated with the organic-inorganic phase were analyzed by FTIR. The results of mechanical studies by a universal testing machine (UTM) demonstrated an increase in the tensile strength and apparent density after the addition of nano bioactive glass and nano ZnO. The integration of nano Zinc Oxide in the polymer matrix increased the swelling ratio up to 298% and maintained the delayed biodegradation behavior around 38%, while the pH remained neutral (7.4). The antibacterial activity evaluated by *Salmonella typhi* and *Enterococcus faecalis* pathogens showed a better zone of inhibition for gram positive *E. faecalis*. The hemocompatibility study proves that the CPBZ nanocomposites are blood compatible and showed a hemolytic ratio of less than 2%. The results demonstrated that the prepared bionanocomposites could act as an extracellular matrix in osteogenic tissue engineering.

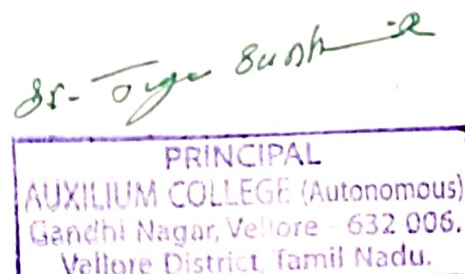
## 1. Introduction

Bioengineered bone tissue is a potential alternative to the traditional use of bone grafts as it can be provided indefinitely and has a low risk of infection and disease transmission [1]. Tissue engineering requires a combination of host cells, biologically active factors, and scaffolds to renovate or replace bone. Bioengineered scaffolds should be able to facilitate cell function and depict the extracellular matrix (ECM). A biocompatible, biomechanically reliable, and biodegradable scaffold with degradation rates similar to new tissue growth and similar to native host tissue is advantageous for tissue engineering. Scaffolds of nano-structures can provide a channel for mesenchymal-derived cells like osteoblasts to grow and differentiate [1,2]. A separate polymer cannot encounter all of the requirements to function efficiently for a natural extracellular matrix. As a result, scaffolds should be woven from various

materials to have all of the desired properties to promote cell regulation. So every material has a unique property that contributes to the overall efficacy of the scaffold. Polymeric (both natural and synthetic) and nonpolymeric materials have traditionally been used in the fabrication of scaffolds. Chitosan and poly(vinyl alcohol) are considered attractive materials for tissue regeneration due to their exceptional biocompatibility and desirable chemical structure [3].

Chitosan is of significant interest because of its biocompatibility, biodegradability, osteogenic and broad-spectrum antimicrobial properties. Chitosan contains glucosamine and N-acetyl glucosamine units and is quite similar to glycosaminoglycans, the main constituent of native ECM. Due to its similarity to different glycosaminoglycans, it may bind to growth factors in osseous trabecular tissue and may also be mitogenically active in different kinds of cells like osteoblasts. It promotes cell adhesion and proliferation while also acting as an

\* Correspondence to: Affiliated to Thiruvalluvar University, Serkkadu, Vellore 632115, Tamil Nadu, India.  
E-mail address: [suganthak@auxiliumcollege.edu.in](mailto:suganthak@auxiliumcollege.edu.in) (V.S. Kumari).



# Uniform Asymptotic Stability of Sir Model with Distributed Delay: A Case Study of Nipha Virus

Priya P<sup>1</sup> and Sabarmathi A<sup>2</sup>

<sup>1</sup>Department of Mathematics, Thiruvalluvar University, Serkadu 632 115, Tamil Nadu, India.

<sup>2</sup>Department of Mathematics Auxilium College (Autonomous), Vellore -632 006, Tamil Nadu, India.

Corresponding author Email: [p.priyammu@gmail.com](mailto:p.priyammu@gmail.com)

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## Abstract

This paper investigates the dynamical system of Susceptible, Infected, Recovered (SIR) cases of Nipha Virus transmission disease. The system of equation incorporates the compartment SIR model with distributed delay from the range  $[0, h]$ . The qualitative analysis such as the expected existence and unique equilibrium points were performed. Uniform boundedness of the solved equilibrium points was examined by using appropriate conditions. To track the local stability of the virus free equilibrium and persist of the endemic equilibrium using basic reproduction number  $R_0$ . If  $R_0$  less than unity there exist a disease free equilibrium point which is locally asymptotically stable whereas if  $R_0$  greater than unity the given endemic equilibrium point is locally asymptotically stable. The linear matrix inequality (LMI) approach is used to find the uniform asymptotic stability for the constructed model. The support of LMI Matlab toolbox, the feasibility of the solution was obtained. Finally the Graphical numerical simulations are investigate the spread of the influence of the parameter through MATLAB.

**Key words:** Nipha Virus, SIR model, Lyapunov function, Delay, Boundedness, and Stability analysis.

## Article History

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## 1. Introduction

Mathematical Modeling is an emerging trend in science and engineering fields. Mathematical model help us to investigate the dynamics of the communication of infectious disease and give the appropriate strategies to control the disease. Also it is great concern of human kind since it has enormous impact of infectious disease on human and animal. The last two decades, various mathematical model have been analyzed and to study the dynamics, stability and controllability of infectious disease such as Malaria, Dengu, Chikenkunia, Ebola and Zoonotic infectious disease such as Covid 19, Nipha, brucellosis and Rabies etc. In particular the diseases were studied in both deterministic and stochastic models. Kermack and Mckendrik constructed basic and simplest model of SIR which states the theoretical total number of population infected by the disease over the time of closed population. Some basic epidemic models are SI, SIR, SEIR, which developed many mathematician and biologist [1,2]. Recently, many authors attention focus on to study the dynamical model of SI, SIR and

## A Study on Customer Satisfaction on Electronic Payment System in Banking Sector with Special Reference to Vellore City

**Dr. N Sathya**, Assistant Professor, Department of Commerce, **Auxilium College** (Autonomous), Vellore, Tamil Nadu.

### Abstract

In the recent decades, the banking industry nationally and globally has changed rapidly due to the technological development. The change is in respect of internet banking, e-payment technologies and information exchanges which have in turn lead to reduction in cost of bank office activities. Banks should design tailor made services to attract senior citizens and to increase the level of satisfaction of Electronic Payment System for long term customers. Therefore, this study focuses on usage of electronic payment system, factors that influence the preference in choosing electronic payment system, problems encountered by the customers while operating electronic payment system and suggestions to improve the quality of electronic payment system. The study was conducted by collecting the personal information from the respondents to proceed with the data analysis compilation.

**Keywords:** Customer Satisfaction, Electronic Payment System, Technical issues, Online Payments.

### Introduction

Banking sector plays an important role in Indian economy from the Ancient days till the Modern times. Money started to circulate among the people. As a result of liquidity of money, banks came into existence. An e-payment system is a way of making transactions or paying for goods and services through an electronic medium, without the use of cheques or cash. It is also called an electronic payment system or online payment system. Electronic payment systems are classified into various categories, namely e-cash, e-wallet, online payment, card-based, etc. An efficient and reliable e-payment system enables faster payouts, better tracking, transparent transactions, reduced time use, cost savings and increased trust between sellers and buyers. Electronic payment systems are now commonly used such as transactions via ATM machines, use of credit or debit cards, through online banking and mobile banking.

### Statement of the Problem

The Present situation of society is such that it is difficult for a customer to make a transaction under traditional way. This study describes the customer satisfaction and the problems faced by them. To overcome these findings the right procedures about e-payment must be obtained.

### Scope of the Study

- The importance of this research is to find the satisfaction level of e-payment system towards customers point of view.
- This study focuses on the customer aspirants of Vellore to understand their attitude towards the e-payment satisfaction.
- This e-payment system gives a lot of opportunity to all the types of age groups without any difference.
- This study conducts among the customer aspirants of Vellore to understand their attitude towards the e-payment satisfaction.

### Objectives of the Study

- 1) To analyze the growth of electronic payment system.
- 2) To identify the usage of electronic payment services offered by banking sector.
- 3) To examine the factors influencing the preference in choosing electronic payment

*Dr. N. Sathya*

<p>PRINCIPAL  AUXILIUM COLLEGE (Autonomous)  Gandhi Nagar, Vellore - 632 006.  Vellore District, Tamil Nadu.</p>
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# Dynamics of SEIR Model of Nipah Virus

V. S. V. Naga Soundarya Lakshmi and A. Subramathi

## 1 Introduction

A mathematical model can translate the real-world problems into mathematical problems. It became an important tool of epidemiology to measure different strategies to restrict the disease. Recently, mathematical models on epidemiology of infectious disease has increased its influence on both theory and practice to manage and control diseases [1]. Particularly, SIR model is important to represent the flow of an infectious disease. SEIR is a model developed from SIR model which has an exposed class, that means the individuals in the class have been infected by the disease but not yet infectious.

Infectious diseases caused by living organisms such as viruses and bacteria. They can be passed from human to human through secretion, insects or by other means. These diseases can be spread by direct contact or indirect contact. Nipah virus is a 'borne virus' with the scientific name 'Nipah henipa virus'. The first identification of Nipah virus as a cause of outbreak was reported in Meliempul District of Bangladesh. The outbreaks have been reported in Malaysia, Singapore, Bangladesh and India, which Bangladesh has the highest mortality rate due to Nipah virus [1]. In India, Nipah virus outbreak was reported in Siliguri of West Bengal in 2001 [2] and in Nadia District of West Bengal in 2007 [3]. Nipah virus was reported in Perambra near Calicut in Kerala in 2018.

Haider Ali Biswas [4] has investigated the Nipah virus infected in Bangladesh with the basic SIR model and proposed the control strategies for Nipah virus. Biswas [5, 6] has discussed the spread of Nipah virus among host and pathogen in Bangladesh and the control strategies were numerically studied by optimal control theory and studied the infectious diseases by SEIR model with vaccination. Zhang [7] has analysed the global dynamics of SEIR model for infectious diseases when the treatment

V. S. V. Naga Soundarya Lakshmi (✉) · A. Subramathi  
Department of Mathematics, Auxilium College, Vellore, India

e-mail: sambask14@gmail.com

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Principal  
AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006,  
Vellore District, Tamil Nadu.

AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006,  
Vellore District, Tamil Nadu.

## A dynamical analysis of a mathematical model on type-2 diabetic from obesity

Gnana Priya G. \*

A.Sabarmathi †

Naga Soundarya Lakshmi V.S.V‡

### Abstract

A model for type-2 diabetic from obesity with two control variables diet with physical activity and medication is formulated. The disease free and endemic equilibrium points of the model are obtained. The existence of optimal controls is verified through Pontryagin's maximum principle. The local stability is analyzed using Routh-Hurwitz criteria. The global stability is studied using Lyapunov function. The parameters are chosen based on the female population in India. The aim of this research is to construct a model for type-2 diabetic from obesity using parameters based on the female population in India. We have introduced two control variables as diet with physical activity and medication. The positive endemic equilibrium is obtained. The local and global stability of the model are analyzed with some specific conditions. Numerical simulations are carried out to exhibit the flow of variables with controls. Our study mainly highlights the awareness of metabolic risk by healthy diet, physical activities and medications. **Keywords:** Obesity, Diabetic, Pontryagin's maximum principle, Lyapunov function, Stability.

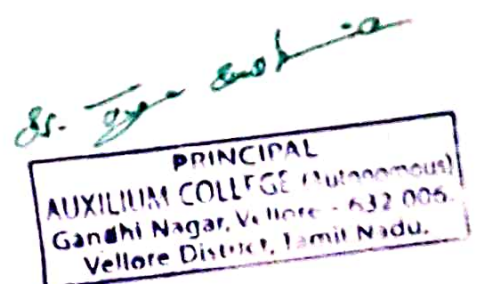
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\*Department of Mathematics, Auxilium college, (Affiliated to Thiruvalluvar University, Serkadu, Vellore-632115); priya.prakasam51@gmail.com

†Department of Mathematics, Auxilium college, (Affiliated to Thiruvalluvar University, Serkadu, Vellore-632115.

‡Department of Mathematics, Auxilium college, (Affiliated to Thiruvalluvar University, Serkadu, Vellore-632115. san9sak14@gmail.com

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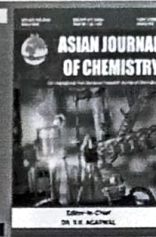




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## Production of Biodiesel from Soybean Oil in Less Time and at Low Temperature

RAJAN CHOUDHARY<sup>1,2,3,\*</sup>, ANUJ KUMAR<sup>4</sup>, VIJAY NAG ELLAPANI<sup>4</sup>, BARUAH TRINAYAN<sup>4</sup>, MURUGANANDAM LOGANATHAN<sup>4,5</sup>,  
LAKSHMI RAVY<sup>5</sup>, VIJAYAKUMAR VIJAYAPARTHASARATHI<sup>6</sup>, AMIT MAHINDRAKAR BABURAO<sup>7</sup>, SUBRAMANIAM SHANTHAKUMAR<sup>7,8</sup>,  
DEEPALEKSHMI PONNAMMA<sup>8,9</sup>, KISHOR KUMAR SADASIVUNI<sup>9,10</sup> and SASIKUMAR SWAMIAPPAN<sup>6,\*,11</sup>

<sup>1</sup>Rudolfs Cimdins Riga Biomaterials Innovations and Development Centre of RTU, Institute of General Chemical Engineering, Faculty of Materials Science and Applied Chemistry, Riga Technical University, Pulka Street 3, LV-1007 Riga, Latvia

<sup>2</sup>Baltic Biomaterials Centre of Excellence, Headquarters at Riga Technical University, Kipsala Street 6A, LV-1048 Riga, Latvia

<sup>3</sup>Center for Biomedical Engineering, National University of Science and Technology "MISIS", Moscow, 119049, Leninskiy Prospect 4, Russia

<sup>4</sup>Department of Chemical Engineering, School of Chemical Engineering, Vellore Institute of Technology, Vellore, India

<sup>5</sup>Department of Chemistry, Auxilium College, Vellore-632006, India

<sup>6</sup>Department of Chemistry, School of Advanced Sciences, Vellore Institute of Technology, Vellore-632014, India

<sup>7</sup>Department of Environmental and Water Resources Engineering, School of Civil Engineering, Vellore Institute of Technology, Vellore-632014, India

<sup>8</sup>Materials Science and Technology Program, College of Arts and Sciences, Qatar University, P O Box 2713, Doha, Qatar

<sup>9</sup>Center for Advanced Materials, Qatar University, P O Box 2713, Doha, Qatar

\*Corresponding author: E-mail: [ssasikumar@vit.ac.in](mailto:ssasikumar@vit.ac.in)

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The heterogeneous catalyst plays an important role in the production of biodiesel at industrial level. In present work, the utilization of wollastonite as a heterogeneous catalyst is attempted to explore its non-biomedical application. Wollastonite was synthesized by using the auto combustion method and L-alanine was used as a fuel for combustion. The X-ray diffraction pattern reveals the phase purity of wollastonite. The Fourier transform infrared spectra of the calcined precursor show the presence of characteristics functional groups in wollastonite. To evaluate the catalytic ability of the prepared wollastonite, transesterification reaction of soybean oil with methanol was performed. Following the reaction, the biodiesel, glycerol and the catalyst were separated by centrifugation. Optimization of the percentage of catalyst used in biodiesel production was done by using various quantities of catalyst during the transesterification reaction and subjecting the produced biodiesel to gas chromatography. It can be concluded that combined alkali metal oxide and silica in wollastonite has assisted in production of biodiesel (82.6%) in a less time and at a low temperature.

**Keywords:** Wollastonite, Heterogeneous catalyst, Biodiesel, Vegetable oil, Transesterification.

### INTRODUCTION

There has been an exponential increase in the demand of energy sector and hence an over exploitation of diesel fuels is practiced. This has led to an alarming rate of increasing environmental problems and reduction in fossil fuel reserves [1]. Due to the depletion of major onshore oil fields and increase in oil prices, there is a huge demand for the human race to focus on the production of environmental friendly green fuels instead of the conventional fuels that would promise a safe and clean future [2]. Biodiesel is such an example of alternate renewable liquid fuel that can help to compensate for the increasing demand

of diesel fuels [3,4]. It is an ecological fuel and refers to a vegetable oil or animal fat-based diesel fuel consisting of long-chain alkyl esters. Biodiesels have several benefits over diesel fuel derived from petroleum deposits. It is safer, non-toxic, biodegradable and contains a minimal amount of sulfur and sulfur-based compounds. Biodiesel is more oxygenated than conventional mineral diesel, burning more efficiently in the engine, and thus resulting in less emission of hydrocarbons, CO<sub>2</sub> and particulates. The presence of oxygen also increases the lubricity of the fuel, extending the lifetime of a diesel engine. Furthermore, the biodiesel has high cetane number and flash point in comparison to diesel [5].

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*Sr. Ajeetha Suresh*  
PRINCIPAL  
AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006.  
Vellore District, Tamil Nadu.





தமிழ்மொழி மற்றும் இலக்கிய பன்னாட்டு ஆய்விதழ்

அறிஞர்களால் மதிப்பீடு செய்யப்படும் அரையாண்டு பன்னாட்டு ஆய்விதழ்

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பேராசிரியர் ந.சுப்பு ரெட்டியாரின் அறிவியல் பயிற்றும் திறன்

Science Teaching Ability of Prof. Na. Subbu Reddiar

முனைவர் ந.சு.குமாரி, உதவிப்பேராசிரியர், தமிழ்த்துறை, அக்சிலியம் கல்லூரி, வேலூர், தமிழ்நாடு, இந்தியா.

Dr.N. Kumari, Assistant Professor of Tamil, Auxilium College, Katpadi, Vellore, Tamil Nadu, India.

ORCID: <https://orcid.org/0000-0002-7889-6164>

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#### Abstract

Professor Dr. N. Subbu Reddiar is a professor who has given 135 indelible literary treasures and holds a permanent place in the hearts of Tamils. He spent the first part of his life learning Tamil systematically, the other half creating scientific and academic texts, and the last part of his life establishing Tamil and glorifying it. He is the author of internal Policies, scientific Tamil, the feast of Wisdom, Alvars, Ramalingar, homeschooling, Periyar's thoughts, Literature on Religion, Religion, People's Voice, Educational Psychology, Theories of Educational Psychology, an appraisal of Kuiltattu and Science Teaching, He had authored books like Science Teaching Skills. Teaching strategies play a major role in enhancing the learning ability of learners. Science subject is unique in the curriculum of schools around the world. Uniqueness is due to the variety of materials and tests required to teach the subject effectively. Science is to be learned properly. Effective science training should be based on observation and experimentation and it would beneficially help the children. The purpose of this article is to explore how the book "Science Teaching Skills", written by a professor for teachers to allay those fears and is fundamentally supportive of educating students about science teaching methods and training them in action.

**Keywords:** Prof. Na. Subbu Reddiar, Science, Teaching Ability.

#### ஆய்வுச்சுருக்கம்

பேராசிரியர் முனைவர் ந. சுப்புரெட்டியார் 135 அழியாத இலக்கிய பெட்டகங்களைத் தந்து தமிழ் நெஞ்சங்களில் நிலையான இடத்தை பிடித்தவர் பேராசிரியர் ந. சுப்புரெட்டியார். தன் வாழ்நாளின் முற்பகுதியை தமிழை முறையாக கற்பதிலும், நடுப்பகுதியை அறிவியல் கல்வியியல் நூல்களை படைப்பதிலும், கடைப் பகுதியை தமிழ் நடை போடாத தேசத்தில் தமிழை நிலைநாட்டி அதனை நாடே புகழ வைப்பதிலும் கழித்தவர். இவர் அகத்திணைக் கொள்கைகள், அறிவியல் தமிழ், அறிவுக்கு விருந்து, ஆழ்வார்களின் ஆரமுது, இராமலிங்க அடிகள், இல்லற நெறி, பெரியாரின் சிந்தனைகள், சமுதாய நோக்கில் இலக்கியம், சமயம், கம்பனின் மக்கள் குரல், கல்வி உளவியல், கல்வி உளவியல் கோட்பாடுகள், கலிங்கத்துப்பரணி ஆராய்ச்சி, குயில்பாட்டு ஒரு மதிப்பீடு, அறிவியல் பயிற்றும் முறை, சைவமும் தமிழும் முதலான நூல்களைப் படைத்துள்ளார். இதில் இவர் எழுதியுள்ள அறிவியல் பயிற்றும் திறன் எனும் நூல் ஆய்வுக்காக முன்னொடுக்கப்படுகிறது. உலகம் முழுவதிலும் உள்ள பள்ளிகளின் கல்வித்திட்டத்தில் அறிவியல் பாடம் தனித்தன்மை வாய்ந்தது. அப்பாடத்தை திறமையாகப்

பசுமைச் சூழல் பேணுவோம் பார்த்தனைக் காப்போம்

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PRINCIPAL  
AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006.  
Vellore District, Tamil Nadu.



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## சங்க இலக்கியத்தில் தோழி

முனைவர் நா. குமாரி

உதவிப் பேராசிரியர், தமிழ்த்துறை,  
அக்சிலியம் கல்லூரி (தன்னாட்சி), வேலூர்.

### முன்னுரை

சங்க அக இலக்கியங்கள் பெரும்பாலும் மனித குலத்தின் அக ஒழுக்கத்தினை வெளிப்படுத்தவே படைக்கப்பட்டது. சங்க இலக்கியத்தில் காணப்படும் மாந்தர்கள் தனித்துவம் வாய்ந்தவர்களாகக் காணப்படுகின்றனர். ஒவ்வொரு பாத்திரங்களும் சிறப்பு ஆளுமைகளைப் பெற்றிருக்கின்றன.

சங்க அக இலக்கியங்களில் அதிகமாகக் குறிப்பிடப்படும் பாத்திரம் தோழி. தலைவிக்கு மிக நெருக்கமான உறவாக விளங்கக்கூடியவளும் அவளே. தலைவிக்காக எதையும் செய்யத் துணிந்தவளாக விளங்கும் தன்னலமற்றவள் தோழி என்பதை அக இலக்கியங்கள் தெளிவாகக் காட்டுகின்றன.

### தோழியின் இலக்கணம்

சங்க இலக்கியத்தில் வரும் துணைப் பாத்திரங்களில் தலைவன் தலைவிக்கு இணையான இடத்தைப் பெறுபவள் தோழி. இவள் தலைவியை விட அறிவில் மேம்பட்டவள். தலைவியை வளர்த்த செவிலியரின் மகளாகிய தானும், தலைவியும் வேறில்லை என்ற அளவிற்கு ஒன்றுபட்ட வாழ்வினை மேற்கொண்டுள்ளதை அறிய முடிகிறது.

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முதுகலைத் தமிழ்த்துறை

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# இலக்கியங்களில் இயற்கை

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திருமதி வூ.சவரியம்மாள்



*Dr. Rajaseela*  
PRINCIPAL  
AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006  
Vellore District, Tamil Nadu.

### 83. நற்றிணையில் இயற்கை பின்னணியில் காதல் வாழ்வு

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#### ஆய்வுச் சுருக்கம்

தொல்காப்பியத்தில் அகத்திணை வாழ்வியலை பற்றி கூறும் இயல்கள் அகத்திணையியல், களவியல், கற்பியல், பொருளியல் ஆகும் மேலும் செம்புளியல், மெய்ப்பாட்டியல் ஆகியவற்றிலும் ஆங்காங்கே அகத்திணைக் குறித்த பாடல்களை பற்றி தொல்காப்பியர் விளக்குகிறார். ஒரு ஆணும் பெண்ணும் தனித்த நிலையில் கூடி இயற்கையின் இன்பத்தோடு தன் மனதில் தோன்றும் உணர்வுகளை வெளிப்படுத்தி தன் உள்ளத்தில் இன்பத்தை அனுபவித்து வாழ்கின்ற வாழ்வியல் முறையை அகம் என்கிறோம். காதல் உணர்வை உள்ளத்தால் உணர் முடியும் தனி சொல்லால் உணர்த்த இயலாது இதுவே உலக உயிர்களிடையே உடன் தோன்றிய உணர்வாகும். இதனை புலவர்கள் அன்புறு காமம் என்றும் காதல் காமம் என்றும் காதலும் காமம் என்றும் வெளிப்படுத்துவர். சங்க இலக்கியத்தில் ஒன்றான நற்றிணையில் இயற்கையை முன்னிறுத்தும் பின்னணியில் காதல் பாடல்களை புலவர்கள் பாடியுள்ளனர். நற்றிணை என்ற சொல்லானது நல்லொழுக்கம், நல்ல தெறிமுறைகள் என்ற பொருளின தரவல்லது. மனித வாழ்வின் உணர்வியல் கூறுகளை அழகியலோடு எடுத்து இயம்பியுள்ளதை நற்றிணை பாடல்கள் வெளிப்படுத்துகின்றன. காதல் வாழ்வியலை முன்னிறுத்தி பாடப்பட்டுள்ள பாடல்களை அந்த சூழலோடு புரிந்து கொள்வதற்கு முதல், கரு, உரிப்பொருள்கள் அமைத்து அதனோடு இயற்கை பின்னணிகளை இணைத்து பாடப்பட்டுள்ளமை போற்றுதற்குரியது. நிகழ்வுகள் யாவும் வாசகர்கள் மனதில் நிலை நிறுத்தவும், கண்ணெதிரே காட்சிகளாய் விரிந்து நிற்கவும் இந்த இயற்கை பின்னணி பெரும் பங்கினை வகிக்கின்றது. களவு வாழ்க்கையை அறிந்து கொண்டு அதன் முதன்மைத்துவத்தை இனிமையாக உணர் வைப்பதில் இயற்கைக்கு நிகர் இயற்கையே என்பதனை பின்னணிகள் நமக்கு தெளிவு படுத்துகின்றன. இன்ப துன்ப நிகழ்வுகளை உணர்த்தவும், தலைவரின் மன கிளர்ச்சியை இயற்கையின் சிலிர்ப்போடும், தலைவரின் வேதனையை இயற்கையின் பருவத்தோடும், காதல் வயப்பட்டவர்களின் உள்ளத்தினை பெரும்பொழுது சிறுபொழுதுகளோடும் எடுத்துரைப்பதோடு காதலர்களின் மனதில் சஞ்சலம் உள்ளதையும், இன்பம் துள்ளுவதையும் படிப்பவர்கள் உணரும் விதத்தில் காட்சிகளை இயற்கையின் துணையோடு பின்னணியாக்கி பாடியிருக்கும் புலவர்களின் மாட்சிமை நற்றிணையில் ஆட்சி பெற்றுள்ளமை அறிந்து கொள்ள நற்றிணையில் இயற்கை பின்னணியில் காதல் வாழ்வு என்ற இந்த ஆய்வானது இயற்கை பின்னணியை அறிந்து கொண்டு பாடல்களை புரிந்து கொள்ள பெரிதும் துணை நிற்கின்றது.

குறிப்புச் சொற்கள்: அன்புறு காமம், நல்லொழுக்கம், கண்ணெதிர் காட்சிகள், மன கிளர்ச்சி, மாட்சி.

#### முன்னுரை

நற்றிணை என்னும் இந்நூல் தனிப்பாடல்களாகப் பலராலும் பாடப்பட்டு பின்னர் தொகுக்கப்பட்டது. இது எட்டுத்தொகை நூல்கள் இவை என பாடும் வெண்பாவால் முதலிடம் பெற்று நிகழ்வது நற்றிணையாகும். நம் என்ற அடையொழி பெற்று, நல் நற்றிணை, நற்றிணை நானூறு எனவும் அழைப்பர். இதில் அமையப்பெற்றவன் பாடல்கள் பெரும்பாலும் அகப்பொருள் பாடல்களாகும். இப்பாடல்கள் மூலம் அக்கால மக்களின் பழக்கவழக்கங்களை அறியலாம். தலைவன் தலைவியின் காதல் வாழ்வு, பிரிவு துன்பம், அறவாழ்வின் சிறப்பு ஆகியவற்றை அறிய நற்றிணை பாடல்கள் துணை செய்கின்றன. அகிலம் ஐம்புலன்களால் ஆனது. உலக வாழ்வியல் இயற்கையால் ஆனது. தட்பவெட்பமான நிலைகளெல்லாம் உயிர்களை வாழ வைக்கின்றதன் மனிதம் இல்லையேயல் மொழி இல்லை. நல்ல ஒழுக்க தெற்களை கொண்டுள்ள நூல் நற்றிணை ஆகும். ஐந்திணைகளால் ஐம்புலன் கொண்ட மனிதர்களின் வாழ்வியலை படம் பிடித்து காட்டியுள்ளது. மனித வாழ்வில் காதல் வாழ்வு என்பது சிறந்த வாழ்வு என்பதையும், அக பாடல்களில் இயற்கை பின்னணி இருவிதமாக அமைந்திருப்பதையும், இயற்கை எப்போதும் அழகியது, பாலையிலம் கூட ஓவியமாக, கவிதையாக சித்தரிக்கப்படும் போதும் நம் மனதில் அழகுணர்ச்சியை எழுப்பவே செய்யும். அத்தகைய இயற்கை பின்னணியில் அடையப்பெற்ற காதல் வாழ்வு குறித்து நற்றிணை கூறும் செய்திகளை இக்கட்டுரை வழி அறியலாம்.

#### இயற்கை என்பதன் விளக்கம்

இயற்கை என்பது நெடுங்காலமாகவே தமிழில் இயல்பு என்னும் பொருளில் வழங்கி வந்துள்ளது. அதாவது மனிதனால் உருவாக்கப்படாத ஒன்று தான் இயற்கை தொல்காப்பியம்.

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AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006,  
Vellore District, Tamil Nadu.



தமிழ்மொழி மற்றும் இலக்கிய பன்னாட்டு ஆய்விதழ்

அறிஞர்களால் மதிப்பீடு செய்யப்படும் அரையாண்டு பன்னாட்டு ஆய்விதழ்

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பேராசிரியர் பார்வையில் கவிமணியின் தமிழ்ப்பணி

Kavimani's Contribution to Tamil from the Perspective of Na. Subbu Reddiar

முனைவர் கே. பி. கனிமொழி, உதவிப்பேராசிரியர், தமிழ்த்துறை, அக்கிலியம் கல்லூரி, வேலூர், தமிழ்நாடு, இந்தியா.

Dr. K. B. Kanimozhi, Assistant Professor of Tamil, Auxilium College, Vellore, Tamil Nadu, India.

ORCID: <https://orcid.org/0000-0003-2143-7116>

DOI: 10.5281/zenodo.7251486

#### Abstract

Prof. Na. Subbu Reddiar is a famous Tamil scholar, great writer and a great intellectual who shaped Tamil Literature by his writings. He is proud to have made his mark in the development of Tamil studies by delving deep into various fields like literature, science, psychology, pedagogy, religion and society. He had written 135 books and they have been nationalized by the Tamil Nadu Government. During the period when Tamil sentiment started to rise, Prof. Bharatiyar wrote a critical review of Bharathidasan's songs. Similarly, this book 'Kavimani's Tamil Work - A Review' arose as a result of the increased involvement in the 'Malarum Malayum' songs of Kavimani Desika Vinayakam Pillaiyum. The author of this book has collected the verses written by Kavimani in various periods and categorized them under various topics and published them. Professor Reddiar has analyzed the natural scenes and pictorial scenes shown by Kavimani in historical and comparative manner in his own way. Kavimani's "Kulanthai Padalgal" (children's songs) has been conveyed in children's language and stresses that plays and abhinaya are necessary to educate a child. Also, professor had identified songs with national sentiments, songs with social thought, and songs that can express language. Professor had explored the concept of God and the ideas of Thaumana Swami and Kumaragurubarar. He gives the reason for the name Sundaramurthy vazhiyil on his own way. He has praised it by comparing it with Bharatiyar songs, Bharathidasan songs, Bhakti songs etc. at appropriate places. One can see nowhere except Tamil literature like Kavimani had expounded on impermanence in the cultural elements of his songs. Through analysis, Professor Subbu Reddiar gives us the feeling of the poet who enjoyed nature and indepth philosophy. "Marumakkal Vazhi Manmiyam" is a beautiful work full of composition by Kavimani. The work is designed lofty with refined ideas in such a way that the mind of the learner is awakened, blossomed and tamilized.

**Keywords:** Philosopher, Sattvaguna, Review, Imagery, Cultural.

#### ஆய்வுச்சுருக்கம்

பேராசிரியர் ந.சுப்பிரெட்டியார் தமிழகத்தின் மூத்த தமிழறிஞர், மாபெரும் எழுத்தாளர், சிந்தனைச் செம்மல். இலக்கியம், அறிவியல், உளவியல், கல்வியியல், சமயம் மற்றும் சமூகம் என பல்வேறு துறைகளில் ஆழங்காற்பட்டு தமிழ் ஆய்வு வளர்ச்சியில் தம்முடைய முத்திரையை நன்கு பதித்த பெருமைக்குரியவர். இவர் படைத்த 135 நூல்களைத் தமிழக அரசு நாட்டுடைமை ஆக்கியுள்ளது. தமிழணர்வு கிளர்ந்தெழுத் தொடங்கியக் காலக்கட்டத்தில் பேராசிரியர் பாரதியார், பாரதிதாசன் பாடல்களில் ஆழங்காற்பட்டு திறனாய்வு நூல்களை எழுதியுள்ளார். அதுபோல சத்துவகுணம் மிக்க பேராசிரியர் சத்துவகுணமே வடிவாகவுள்ள கவிமணி தேசிக

புகமைச் சூழல் பேணுவோம் பார்நனைக் காப்போம்

*Dr. Subbu Reddiar*

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AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006,  
Vellore District, Tamil Nadu.



ந. சுப்புரெட்டியாரின் அறஇலக்கியங்களில் ஈகைநெறி

Charity in Ethical Literature Evinced by Na. Subbu Reddiar

முனைவர் ஜ. பபீதா, உதவிப்பேராசிரியர், தமிழ்த்துறை, அக்சிலியம் கல்லூரி, வேலூர், தமிழ்நாடு, இந்தியா.

Dr. J. Papeetha, Assistant Professor of Tamil, Auxilium College, Vellore, Tamil Nadu, India.

ORCID: <https://orcid.org/0000-0002-5470-0593>

DOI: 10.5281/zenodo.7266055

Abstract

Na. Subbureddiar lived his life gloriously glorifying his mother tongue Tamil. He crawled in the lap of the ever-famed Tamil and worked consciously to spread Tamil all over the world, and stood firm in the minds of the people of the Tamil world. He was a versatile man who had written many books. He had also written many books on the virtues that people should follow in their lives. This article is to know the quality of charity as seen in the ethical literature of Tamil Literature. The word EGAI means to give something to others for help, to alleviate the poverty of others. So, the foremost of the virtues is charity. Because other virtues are only useful to those who do them. The charity is beneficial not only to the doers but also to the recipients. Professor Reddiar's view is that giving charity should be carried out as a humanitarian norm. A good one should see the poverty and suffering of others as his suffering and helps them by giving them what they need. The professor says that the family man must try to alleviate the plight of the poor with a lovable facial expression, and that is the best way to curb the problem of others. It conveys the idea that one should give what we owe, that we should give without considering any exchange, and that one should donate without an expectation that it will come multiple times to the benevolent one. He says that it is the duty of the very rich to carry out the virtues, which will create a world free of poverty. Furthermore, Professor Subbu Reddiar makes it clear that it is not possible to attain the meaning of virtuous life if one thinks that one should enjoy wealth. The ethic literature helps us to understand life, especially through the lives of our ancestors. In that case, Prof. Subbu Reddiar has detailed the values of charity and donation in his works so, the article decodes the ideas related to charity from the writings of Subbu Reddiar.

**Keywords:** Charity, Ethical Literature, Na. Subbu Reddiar.

ஆய்வுச்சுருக்கம்

*Sr. Papeetha*

PRINCIPAL  
AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006.  
Vellore District, Tamil Nadu.

எத்திசையிலும் புகழ்மிக்கதாய் ஒளிவீசும் தாய் மொழியை தம் உயிர்போல் போற்றி வாழ்ந்தவர் திருச்சி மாவட்டம் பெரகம்பியில் அவதரித்த ந.சுப்புரெட்டியார் அவர்கள். மங்காதப் புகழால் தமிழ்நாட்டின் மடியில் தவழ்ந்தவர், உலகெங்கிலும் தமிழைப் பரப்பியவர், தமிழால் உலகமக்களின் மனதில் நிலையாக நின்றவர். பலநூல்களை படைத்த பல்துறை வித்தகர், மக்கள் தம் வாழ்வில் கடைபிடிக்க வேண்டிய நல்நெறிகளை தாம் இயற்றிய நூலான தமிழ் இலக்கியத்தில் அறம் என்ற நூலின் வழியே பலஅறங்களை ஆழமாய் எடுத்துரைத்தவர், குறிப்பாக ஈகைநெறி குறித்து பலரும் போற்றும் விதமாக நுட்பமான கருத்துக்களை முன்வைத்தவர். அவர் போற்றிய ஈகைநெறியை அறிந்துகொள்ளும் விதத்தில் இந்த ஆய்வு



**கலெதாம்புரர்**  
(கலெதாம்புரர் கலெதாம்புரர்)  
ஆசிரியர் : முனைவர் க.சிவா  
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# நெய்தல் ஆய்வு

## NEITHAL AAIVU

வருட - 7      இதழ் - 1      தமிழ் அகப்பெயர்ச்சி      விலை ரூ.100/-      ஜனவரி - மார்ச் 2022  
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## ப.சீவகாமியின் படைப்புகளில் சமுதாயச் சிந்தனைகள்

முனைவர் வெ.ரா.மீனாட்சி

### ஆய்வுச் சுருக்கம்

பெண் தன்னளத்தானே செதுக்கிக் கொண்டு சூழலால் சீர்திருத்தம் அறிவுச்சிந்தி! பெண் காற்றின் தீராத பக்கங்களையும் மணர்செய்யும் பூந்தோட்டம்! பெண் சூழலின் ஆணியே! அரைக்க முடியாத வளிமண்டலம்! இறைவனின் படைப்பில் அனைத்துமே அருட்கொடை! அந்த வகையில் பெண்கள் தனித்துவம் மிக்கவர்கள்! தனக்கான சாதனைப் பலர் தொடர்ந்து அருஞ்சாதனைகள் புரிந்துள்ளனர். அவ்வகையில் சாதனைப் பெண்மணி, புகழ்தறிவு எழுந்தாளர், தனித் இயக்கிய விடிவெள்ளி, சிந்தனைக்கிளிய ப.சிவகாமி ஐ.ரா.எஸ் அவர்களின் இயக்கியப் படைப்புகளில் காணப்படும் சமூகச்சிந்தனைகளை முன்னையதாக இவ்வாய்வுக் கட்டுரை அமைகிறது.

### முக்கியம்

நிறைவும், அறிவும், தெளிவும் கொண்டு நன்னடிகளைப் பெருக்கி, தீமைகளை அழிக்கும் மாபெரும் சக்தியாக பெண்ணினம் செய்மாந்து வாழ்ந்து கொண்டிருக்கிறது. பெண்கள் பல்வேறு அடிமைத்தனங்களை உடைத்தெறிந்து, தடைக்கற்கள் அடைந்ததையும் புகக்கற்களாக்கி பல்வேறு தளங்களிலும் சிறந்த முத்திரை பதித்து வருகின்றனர். அரசியல், பொருளாதாரம், கல்வி, மருத்துவம், இசை, விஞ்ஞானம், வெய்நூலம், வானியல், ஜோதிடம், காவல் முதலிய பல துறைகளிலும் சமுதாயத்திற்கு தன்னிகரற்ற சேவைகளை பெண்கள் ஆற்றி வருகின்றனர். இவ்வாய்வுக் கட்டுரையில் தனித் இயக்கிய சிறந்த பெண் படைப்பாளி, புட்சி எழுந்தாளர், பல்வேறு சாதனைகள் புரிந்த வீரமங்கை, பன்மொழி அறிஞர், மாபெரும் கலைஞர், சிறந்த பனிதராகிய சிந்தனைக்கிளிய ப. சிவகாமி ஐ.ரா.எஸ் அவர்களின் சமூக மேம்பாட்டுச் சிந்தனைகளை விரிவாகக் காண்போம்.

### கூலையப் பதனம்

திருச்சிவகாமியின், பெரியநூலில், திருமதி, எம். பழனிமுத்து, திருமதி. தாண்டாமி அம்மையாள் மகளாக 30. 11. 1957 எனிய விவராய குடும்பத்தில் பிறந்தவர் சிவகாமி.

Dr. R. S. S. S. S.  
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தமிழ்மொழி மற்றும் இலக்கிய பன்னாட்டு ஆய்விதழ்  
அறிஞர்களால் மதிப்பீடு செய்யப்படும் ஆராயாண்டு பன்னாட்டு ஆய்விதழ்

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## ந. சுப்புரெட்டியாரின் பார்வையில் - நமது உடல்

Na. Subbu Reddiar's View on Body

முனைவர் ஏ. கௌதமச்செல்வி, உதவிப்பேராசிரியர், தமிழ்த்துறை.

அக்சிலியம் கல்லூரி, வேலூர், தமிழ்நாடு, இந்தியா.

Dr. E. Gowthamaselvi, Assistant Professor of Tamil, Auxilium College, Vellore, Tamil Nadu, India.

ORCID: <https://orcid.org/0000-0001-7178-8171>

DOI: 10.5281/zenodo.7251923

### Abstract

Professor N. Subbu Reddiar is a twentieth-century Tamil scholar, writer, professor, spiritualist, scientist, researcher, psychological thinker and a great man with a diverse personality in all fields. He was born on 27<sup>th</sup> August 1916 in Perakambi, Trichy, Tamil Nadu. He was born into an agricultural family and through hard work in his studies, he became a versatile man of Tamil rhetoric. He was involved in the field of science during his primary education. To highlight his writing, the Government of Tamil Nadu nationalized and honoured all of his 96 books. He studied the disciplines of science properly and became proficient in them with the principle that Tamil will prosper unless multidisciplinary texts were popularized in Tamil. He has a good understanding of Anatomy too. Na. Subbu Reddiar had written a book called "Namadhu Udal" (Our Body). He says that the human body is made up of five elements. He elicits that it is a mixture of the five elements such as land, water, air, fire and sky. So, the body needs to be taken care of to keep life in the body without physical and mental problems. Professor, in his book, explained the body as 1. Organ 2. Skin 3. Bone 4. Muscle 5. Brain Nerves 6. Our Sense 7. Digestive Zone 8. Blood Circulation 9. Respiratory Zone 10. Waste Zone, 11. Our Body and inside 12. Explaining the function of the organs with maps on the topics of anatomy and thereby striving for the well-being of mankind. All the instrumental reasons for living life to the fullest in this world are located in this body. It has been clearly explained by professor Subbu Reddiar to his Tamil readers. Based on the physiological notion that all of these vital organs, if in perfect condition, function in a good way and they can function as needed. Hence, the book "Namadhu Udal" (Our Body) will help us to understand the body simply where this article lays its justification.

**Keywords:** Na. Subbu Reddiar, Namadhu Udal, Views, Body.

### ஆய்வுச் சுருக்கம்

இருபதாம் நூற்றாண்டின் தமிழறிஞர், எழுத்தாளர், பேராசிரியர், ஆன்மீகவாதி, அறிவியலாளர், ஆராய்ச்சியாளர், உளவியல் சிந்தனையாளர் என அனைத்துத் துறைகளிலும் பன்முக ஆளுமை கொண்ட மாபெரும் மனிதர் ந. சுப்புரெட்டியார். இவர் தமிழ்நாடு திருச்சி மாவட்டம் பெரகம்பி என்ற ஊரில் 1916 -ஆம் ஆண்டு ஆகஸ்ட் 27<sup>ம்</sup> நாள் பிறந்தார். வேளாண் குடும்பத்தில் பிறந்து பல்துறை வித்தகராய் சிறப்பு பெற்றவர். தொடக்கக்கல்வி பயின்ற காலத்தில் அறிவியல் துறையில் ஈடுபாடு கொண்டிருந்தார். இவருடைய எழுத்துப்பணியைச் சிறப்பிக்கும் பொருட்டு தமிழ்நாடு அரசு அவருடைய 96 நூல்களையும் நாட்டுடமையாக்கிக்

பசுமைச் சூழல் பேணுவோம் பார்தனைக் காப்போம்

*Dr. E. Gowthamaselvi*

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Professor Subbu Reddiar and the Mount Thirupathis

முனைவர் ர. பிரித்தா, உதவிப்பேராசிரியர், தமிழ்த்துறை, அக்சிலியம் கல்லூரி, வேலூர், தமிழ்நாடு, இந்தியா.

Dr. R. Preetha, Assistant Professor of Tamil, Auxilium College, Vellore, Tamil Nadu, India.

ORCID: <https://orcid.org/0000-0002-1172-8043>

DOI: 10.5281/zenodo.7266069

#### Abstract

Professor Na. Subbu Reddiar was born in a farming family in Perakambi, Trichy District. He holds a Bachelor's degree in Chemistry from Soosaipar College, Trichy, a Masters degree from the University of Chennai and a PhD from Tirupathi Thiruvankatavan University. He is very fond of Tamil. He is the author of 130 books in the fields of teaching, Tamil literature, religion, philosophy, performance, history, biography, science and research. He belonged to the Veera Saiva Sect yet he is very devoted to Vaishnavism. They have devised several strategies at each time to interact with the reality. The worship strategies devised by the Vaishnava sages are unique. Devotion opens like a veil when the Vainava idols are not merely symbolic, but each is an Avatar and is associated with reality as an Archavatara taken by the Lord Vishnu. He has written revisions so that those who read such a fact will also realize it. His travel books include "Malai Nattu Tiruppathis", Thondai Nattu Tirupatis, Pandinatu Tirupatis, Northern Tirupatis and Cholanattu Tirupatis. With information on the location of temples in hill station Tirupatis, one can find not only Vaishnava philosophies, devotional positions, traditions, rituals, historical evidence but also the specialties of the Lord Vishnu and Subbu Reddiar's devotion on HIM. There are thirteen Mount Tirupathis that have been categorized by the Alvars into four divisions. They are Thiruvanparicharam, Thiruvattar and Thiruvananthapuram as three divisions; Thiruvittuvakodu and Thirunavaya are the fourth. Thirumangai Alvar is the one who excelled in the above three categories. Kulasekara Perumal was the only to excel in one category. Thus, the article will decode the first section of these four sections.

**Keywords:** Professor Subbu Reddiar, Mount Thirupathis.

#### ஆய்வுச்சுருக்கம்

பேராசிரியர் நா. சுப்புரெட்டியார் திருச்சி மாவட்டம் பெரகம்பி என்ற ஊரில் வேளாண் குடும்பத்தில் பிறந்தவர். திருச்சி சூசையப்பர் கல்லூரியில் வேதியியல் துறையில் இளங்கலைப் பட்டமும், சென்னைப் பல்கலைக்கழகத்தில் முதுகலைப் பட்டமும், திருப்பதி திருவேங்கடவன் பல்கலைக்கழகத்தில் முனைவர் பட்டமும் பெற்றவர். தமிழ் மீது மிகுந்த பற்று கொண்டவர். இவர் ஆசிரியம், இலக்கியம், சமயம், தத்துவம், திறனாய்வு, வரலாறு, தன்வரலாறு, அறிவியல், ஆராய்ச்சி என்ற வகைமையில் 130 நூல்களை எழுதியவர். இவர் வீர சைவ சமயத்தைச் சேர்ந்தவர். ஆயினும் வைணவத்தின் மீது மிகுந்த ஆர்வம் கொண்டவர். மெய்ப்பொருளோடு ஊடாடுவதற்கென்று ஒவ்வொரு சமயத்திலும் பல உத்திகளை வகுத்து வைத்துள்ளனர். வைணவ ஞானிகள் வகுத்து வைத்திருக்கும் உத்திகள் தனிச்சிறப்புடையவை. வைணவ

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Dr. R. Preetha  
PRINCIPAL  
AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006.  
Vellore District, Tamil Nadu.

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# இலக்கியங்களில் இயற்கை

சிறப்பிதழ் ஆசிரியர்

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*Dr. S. S. S. S.*  
PRINCIPAL  
AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006.  
Vellore District, Tamil Nadu.

## 84. கவிஞர் மேத்தாவின் கவிதைகளில் இயற்கை

காந்திநகர், வேலூர்

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632006 தமிழ்நாடு இந்தியா

ஆய்வுக் கருக்கம்

கவிஞர்கள், தாம் வாழும் காலத்தைத் தமது படைப்புகளில் பிரதிபலிக்கச் செய்யும் ஆற்றலர்கள். தமது படைப்புகளில் கற்பனைகளைக் கலந்தோட விட்டு, சொற்களை ஒவியமாகத் தீட்ட முயலுவர். ஒவ்வொரு காலக் கட்டத்திலும், ஒவ்வொரு விதமான படைப்பு, வெவ்வேறு படைப்பாளிகளால் படைக்கப்பட்டு தான் வருகிறது. என்கையோ எப்போதோ படித்துத் தமது படைப்புகளில் கண்படுத்துவது இயற்கை தான். அப்படி வெவ்வேறு காலக்கட்டங்களில் உருவான சிந்தனைகளை, அழகான உதாரணங்களைக் கொண்டு, வெவ்வேறு பதிவுகளில் வழங்கும் விதம் கவிஞர்களது தனித்தன்மை.

காலமும் வாழ்க்கையும் ஒருசேர பயணிக்கும் வகையில் ஒரு படைப்பை உருவாக்கும் வல்லமை கவிஞர்களுக்கு உண்டு. அதனாலேயே தமது படைப்பில் ஒரு விழிப்புணர்வை விதைப்பதுமுண்டு. தமது சொல்லேரால் அவற்றைப் பண்படுத்துவதும் உண்டு. அப்படைப்பில் இயற்கை இன்பம் இடம்பெறுமானும் பார்த்துக்கொள்வர். இப்படிப் பக்குவப்படும் ஒரு படைப்பு காவிய நிலை எய்துவதும் உண்டு.

உயிரினங்கள் உலகம் இப்பூமியில் இயற்கை என்பது மானுடத்தின் வாழ்வியலுக்கு இன்றியமையாதது. அந்த இயற்கைச் சூழலைப் பாதுகாக்க வேண்டுமென்ற பக்குவத்தை ஏற்படுத்துவதில் கவிஞர்கள் எப்போதும் பொறுப்புடனே செயல்படுவர். அப்பக்குவம் நிலைபெற, தொடர்ந்து தமது படைப்புகளை வழங்குவதில் கவனம் செயல்படுவர். கவிஞர் மேத்தாவும் அப்படித்தான் இயற்கையைத் தமது பாடுபொருளாக்கி படிப்போரின் கவனத்தை ஒருமுகப் படுத்துகிறார் காணலாம்.

மனிதன் இயற்கையைச் சார்ந்து வாழவேண்டியிருப்பதைக் கவிஞர் மேத்தா தமது படைப்புகளில் பெரும்பாலான இடங்களில் வெளிப்படுத்தியிருக்கக் காணலாம். கலை என்பது சில நேரங்களில் இன்பம் தூய்ப்பது என்பதும், சில நேரங்களில் அது விழிப்புணர்வுகளைத் தருவது என்பதும் கவிஞர் மேத்தாவின் கவிதைகள் தந்த உணர்ந்தும். இவர் தமது படைப்புகளில் மலை, கடல், ஆறு, அருவி, வானம், சூரியன், நிலவு, நட்சத்திரம், மரங்கள் என அனைத்தையும் பாடுபொருளாக்கியிருப்பார். அவை அத்தனையும் இன்ப நுகர்வைத் தருவதையும், மானுடம் பாடுவதையும் உணரமுடியும்.

ஒவ்வொரு தலைப்பும் ஒவ்வொரு செய்தியைச் சொல்லும். அப்படி உயிர்ப்பெய்திய கவிஞர் மேத்தாவின் இயற்கை சார்ந்த செய்திகள் இக்கட்டுரையில் எடுத்துரைக்கப் பட்டிருக்கிறது. சொன்னது கடுகளவு! சொல்லாதது கடலளவு!

குறிப்புச் சொற்கள்: நுகர்வு, மானுடம், சொல்லேர், பண்படுத்தல், பாடுபொருள், உயிர்ப்பு.

முன்னுரை

கலைகளின் அரசி என்று அழைக்கப்படும் கவிதை உலகில் புத்தம் புதிய வாரிப்பு புதுக்கவிதை ஆகும். புதுக்கவிதை, உருவத்திலும் உள்ளடக்கத்திலும் புதுக்கோலம் புனைந்து கொண்டு காலத்தை வென்று திரிகிறது. புதுக்கவிதை என்பது மக்களால் மக்களுக்காக எழுதப்படுவது இப் படைப்பிற்கு கவிஞனது வாழ்வியல் அனுபவங்களே பொருண்மையாகி விடுகிறது. அந்த வகையில் கவிதைக்குரிய பாடுபொருள் எதுவாக இருந்தாலும் அதை மிக அழகாக வெளிப்படுத்துவதில் தனித்திறன் மிக்கவர் கவிஞர் மேத்தா. கவிஞர் தமது கவிதைகளுக்கெல்லாம் வித்தாக எத்தனையோ பாடுபொருள்களை அமைத்திருந்தாலும் இயற்கை பற்றிய பதிவுகளைப் பதிப்பிக்கவும் தவறவில்லை. இவர் தம் கவிதைகளில் இயற்கையை எடுத்தோதியதைக் கண்படுத்துவதே இக்கட்டுரை நோக்கமாகும்.

கவிஞரது படைப்புத்திறன்

கவிஞர் மேத்தாவின் படைப்புகள் அனைத்தும் ஒரு குறிக்கோளுக் காகவே படைக்கப் பட்டவை என்ற அது மிகையல்ல. எந்த அரசாங்கமும், வாழ்க்கையை வளப்படுத்தும் கருவியாகக் கலைகளைத்தான் செப்புகிற

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Gandhi Nagar, Vellore - 632 006.  
Vellore District, Tamil Nadu.

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## நவீனத் தமிழாய்வு

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*Dr. S. S. S. S.*

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AUXILIUM COLLEGE (Autonomous)  
Gowth Nagar, Valluvar - 632 006,  
Vijayanagara District, Tamil Nadu.

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## கவிவேந்தரின் பார்வையில் மனிதநேயம்

முனைவர் ச. தீபா

உதவிப் பேராசிரியர், தமிழ்த்துறை, அக்சிலியம் கல்லூரி, காந்திநகர்,  
காட்பாடி, வேலூர் - 632 006, தமிழ்நாடு, இந்தியா.

### ஆய்வுச்சுருக்கம்

கவிதை உலகத்தை வெளிச்சத்தை நோக்கி நகர்த்திய படைப்பாளிகளில் கவிஞர் மேத்தாவும் குறிப்பிடத் தக்கவர். கனவுகளையும், சுற்பனைகளையும் பாடி வந்த காத்தில் மானுடம் பாடிய மக்கள் கவிஞர் இவர். காதலும், வீரமும் பிராதனமாகப் பாடி வந்த காலத்தில் மக்களைப் பாடிய வானம்பாடிக்கவிஞர். முனித குலத்திற்காக எழுதிக்கொண்டிருக்கும் இவரது எழுதுகோலின் ஈரம் எப்போதும் காய்வதே இல்லை. மனிதர்களின் விளிம்புநிலை உணர்வுகளை தமது வார்த்தைகளால் செதுக்கிச் சொல்லும் சமுதாயச் சிற்பி இவர். கவிஞர் மேத்தா, பதினெட்டு கவிதை நூல்களை எழுதியிருக்கிறார். இவர் தமது தேர்ந்தெடுத்த கவிதைகளின் தொகுப்பாக ஒரு நூலையும் வெளியிட்டிருக்கிறார். இக்கவிதை நூல்களில் கவிஞர் மேத்தா பெரும்பாலான கவிதைகளில் மக்களைப் பாடும் வானம்பாடியாகவே வலம் வருகிறார். அப்படிப் பாடிய கவிதைகளில் மனிதநேயம் முக்கியப் பங்கு வகிப்பதைக் காணமுடிகிறது. கவிஞர் மேத்தா, தமது கவிதைகளில் அன்பு, கருணை, இணக்கம், பாகுபாடில்லாத பக்தி, பிறருக்குச் செய்யும் நன்மைகள், பிறருக்குச் செய்யும் தீமைகளால் உண்டாகும் நெருக்கடிகள், உண்மையின் பெருமைகள், பொய்மையின் சங்கடங்கள், என கவிஞர் மேத்தா எல்லா நிலைகளிலும் மனிதநேயத்தைப் பாடியிருக்கக் காணலாம். இக் கட்டுரையிலும் அப்படிப் பட்ட மனிதநேயக் கருத்துகள் சில எடுத்துரைக்கப் பட்டிருக்கிறது.

கலைச் சொற்கள் : மனிதம் - மனிதநேயம் - நன்மைகளின் அடையாளம் மனிதநேயம்-அது மறைக்கப்படும் போது - உண்மைத் தேடல் - மனிதநேயத்தின் பயன்பாடு பொதுவுடைமைத்

தருவது - மதநல்லிணக்கமாவது - வழிபாடாவது - முடிவு.

### முன்னுரை

மனிதர்களை உயர்ந்தவர்களாகவும், மதிப்புமிக்கவர்களாகவும், பிறர் போற்றும் வகையிலும் அவர்களது செயல்கள் தான் அடையாளப்படுத்துகின்றன. குறிப்பிடத்தக்க மதிப்புகள் தான், மனிதர்களை... அவர்தம் உலகம் மிக்கோராக்கி அழகு பார்க்கின்றன. மனப்பான்மை தேவை உணர்ச்சி, ஆர்வம், முன்னுரிமை போன்ற சொற்கள் மதிப்பை அடையாளப்படுத்தும் சொற்களாக இருந்தாலும் கடமை, ஒழுக்க உயர்வு, கலாச்சாரப் பாகுபாடு என்னும் சொற்களும் மதிப்பு என்னும் சொல்லை சமநிலைப் பொருளாக்குகின்றன. எல்லாவற்றிற்கும் மேலாக, மனிதர்களை "நேயம்" என்ற சொல் தான் பாலமாக செயல்பட்டு இணைக்கின்றது. அத்தகைய சிறப்பு மிக்க மனித நேயங்களை கவிஞர் மேத்தா தமது கவிதைகளில் பல்வேறு இடங்களில் காட்சிப்படுத்தியிருக்கிறார். அத்தகைய கருத்துகளை முன்னிறுத்துவதே இக்கட்டுரையின் நோக்கமாகும்.

### மனிதம் என்பது

"மனிதம்" என்ற சொல்லுக்கு நினைப்பவன் என்று பொருள். நினைக்கும் கருவி மனம். மனத்தையுடையவன். மனிதன் தமிழில் மனிதன். வடமொழியில் மனுஜா. ஆங்கிலத்தில் மேன் இவையெல்லாம் 'மனி' என்ற பகுதியடியாகவே பிறந்தவை என்று திருமுருகக் கிருபாவந்த வரியார் குறிப்பிடுகிறார். ஆக, மனிதோடு நெருக்கமாகப் பயணப்படுகிற சொல் நேயம். மனிதன் பிறையினர் மீது பாரபட்சமின்றிக் காட்டும் நேயம் மனிதநேயம். இந்தச் சிறப்புகள் நிறைந்த மனிதநேயத்தைக்



தமிழ்மொழி மற்றும் இலக்கிய பன்னாட்டு ஆய்விதழ்

அறிஞர்களால் மதிப்பீடு செய்யப்படும் அரையாண்டு பன்னாட்டு ஆய்விதழ்

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பேராசிரியர் ந. சுப்புரெட்டியாரின் அறவியல் சிந்தனைகள்

Professor N. Subbu Reddiar's Virtuous Thoughts

அ. அக்ஸிலியா மேரி, உதவிப்பேராசிரியர், தமிழ்த்துறை, அக்ஸிலியம் கல்லூரி, வேலூர், தமிழ்நாடு, இந்தியா.

A. Auxilia Mary, Assistant Professor of Tamil, Auxilium College, Vellore, Tamil Nadu, India.

ORCID: <https://orcid.org/0000-0002-8204-8926>

DOI: 10.5281/zenodo.7295010

### Abstract

The word 'Virtue' has a broad meaning. It can include all the good deeds by man. It is interesting to note that in Tamil literature, the practice of virtue, both in personal and public Tamil culture, is manifested. Prof. N. Subbu Reddiar's references from typical texts such as "Tolkappiyam", "Nannul", Sangam literature, and "Aimperunkappiyam" etc. are worth notable. The author's knowledge of religious literature is well expressed when he deals with didactic and devotional literature. In particular, the in-depth training in Vaishnava literature and traditions aids the research study. The author explains the virtues of love and the evils caused by selfishness and states that to live and praise the virtues of thought, speech, and action, one must have the power to keep the mind, language and conscience under his control. Being jealous does not make you resourceful and never leads to progress. Moreover, those who are jealous have not advanced in their life anytime. "When the heart is rotten by the dirt, the people are pleased by the dirt; Lord!" the critical claim of Thayumaanavar, needs to be given thought says the author. There were many witnesses in those ancient days when people lived a life of apostasy. They enlightened the earthy king and the common people raising them to righteousness. Even in the War attrition, virtuous policies have been strictly adhered. N. Subbu Reddiar, rightly points out the pride of the scholars and great thinkers of the ancient virtuous life. As long as there is ignorance and hypocrisy in life, all the misery that does not exist, would seem to be existing and thus cause great anxiety and fear. It would also stumble anyone without knowing the way to get rid of the suffering within. Therefore, the author says that well-being requires consciousness and the elimination of illusions. If we think deeply, we will know that all evils are born out of anger which is contrary to the grace of renunciation, and he suggests abandoning anger. Speaking of hospitality, the author's reference to today's luxuries that take place in the name of hospitality and the inability to provide real warmth serves as an example of his analytic insightfulness. This article explores Prof. Subbu Reddiar's multifaced perspective of presenting the didactic virtuous thoughts in his works.

**Keywords:** Virtue, Anger, Hospitality, Ignorance, Amazement.

### ஆய்வுச்சுருக்கம்

'அறம்' என்ற சொல் விரிந்த பொருளையுடையது. மனிதன் புரியும் நற்செயல்கள் அனைத்தையும் இதில் அடக்கிக் கூறலாம். தமிழர் வாழ்க்கையில் அக வாழ்க்கையிலும் புற வாழ்க்கையிலும் அறம் கடைபிடிக்கப்பட்டு வருதலைத் தமிழ் இலக்கியங்களில் குறிப்பாகவும், தெளிவாகவும் புலப்படுத்தி இருப்பதைக் கண்டு மகிழலாம். பேராசிரியர் ந. சுப்புரெட்டியார் தொல்காப்பியம், நன்னூல், சங்க இலக்கியம், ஐம்பெரும் காப்பியங்கள், முதலான இலக்கண

பசுமைச் சூழல் பேணுவோம் பார்த்தனைக் காப்போம்

Be Eco-Friendly

*Dr. Auxilia*  
PRINCIPAL  
AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006.  
Vellore District, Tamil Nadu.



**ந. சுப்புரெட்டியாரின் கல்வி உளவியல் கோட்பாடுகளின் வழி சிறாரியம்**  
**N. Subbu Reddiar's Principles of Educational Psychology in the Perspective of Children**

அ. இந்துமதி: உதவிப்பேராசிரியர், தமிழ்த்துறை, அக்சிலியம் கல்லூரி, வேலூர், தமிழ்நாடு, இந்தியா.

A. Indumathi, Assisant Professor of Tamil, Auxilium College, Vellore, Tamil Nadu, India.

ORCID: <https://orcid.org/0000-0001-5382-7675>

DOI: 10.5281/zenodo.7251368

**Abstract**

*N. Subbu Reddiar's love and involvement in education and educating children can be found in the book "Kalvi Ulaviyalin Koatpaaadugal" (The Principles of Educational Psychology). Through this book, we can know his concern for the future of society. This can be deduced from the fact that the entire book is carefully addressed to children under each heading. It also explains how a teacher dealing with children should act with examples. It also establishes that an excellent teacher is the only way to better explain the interpretations of education, psychology, etc. In the nature and measurement of psychology, the researcher finds that measurement is a new interpretation of N. Subbu Reddiar's logical thinking. His understanding of the relationship between psychology and educational psychology, and the purpose for which educational psychology is well established, enables one to understand his subtle field by interpreting the relationship psychology has with other disciplines. His knowledge in the field of science shows him as a scientist in the areas of man and circumstance, psychology and physiology. It explains the different age-based divisions, learning, modules involved in learning, types of learning, specialization of stimuli, individual differences, abnormal behaviors, etc., each with a clear understanding of the mass defects and discipline assessments and their way. Subbu Reddiar makes better instruction on the conditions that occur among children at certain educational levels.*

**Keywords:** Subbu Reddiar, Educational Psychology, Childhood, Learning Development.

**ஆய்வுச்சுருக்கம்**

ந. சுப்புரெட்டியார் "கல்வி உளவியல் கோட்பாடுகள்" என்ற நூலின் வழி கல்வியின் மீதும் கல்வி கற்கும் சிறார்களின் மீதும் சுப்புரெட்டியார் கொண்ட அன்பையும் ஈடுபாட்டையும் காண முடிகிறது. அதன்வழி எதிர்கால சமூகத்தின் மீது அவர் கொண்ட அக்கறையை இந்நூலின் வழி நெடுக அறிய முடிகிறது. இந்நூல் முழுமையும் ஒவ்வொரு தலைப்பின் கீழும் சிறார்களுக்கு என்று தனித்த நிலையில் கவனத்துடன் செய்தி சொல்லப்பட்டு இருப்பதில் இருந்து இதனை அறிய முடிகிறது. சிறார்களைக் கையாளும் ஆசிரியர் எவ்வாறு செயல்பட வேண்டும் என்பதையும் தேவையான இடங்களில் தேவையான எடுத்துக்காட்டுகளின் வழி பேராசிரியர் விளக்குகிறார். கல்வி, உளவியல் போன்றவற்றின் விளக்கங்களை எளிய முறையில் சிறப்பாக விளக்குவதன் வழி தான் ஒரு மிகச்சிறந்த ஆசிரியர் என்பதை நிறுவுகிறார். உளவியலின் இயல்பும் அளவீயலும் என்பதில் அளவீடு என்பது தத்துவார்த்த சிந்தனை (logic)

*Dr. Indumathi*  
 PRINCIPAL  
 AUXILIUM COLLEGE (Autonomous)  
 Gandhi Nagar, Vellore - 632 006,  
 Vellore District, Tamil Nadu.



K. SUBHA CHANDRA, Research Scholar, Department of Business Administration, Auxilium College (Autonomous), Vellore, Tamilnadu

Dr. BEULAH SURESH, Head, PG and Research, Department of Business Administration, Auxilium College (Autonomous), Vellore, Tamilnadu

### Abstract

Many programmes are now being organised to raise awareness about environmental sustainability. Organic products contribute to the development of long-term biodiversity. Organic products are made without the use of synthetic fertilisers and pesticides. Organic farming practices do not use genetically modified seeds. Farmers use synthetic fertilisers and pesticides in conventional farming, which are harmful to the environment and the people who consume those products. Organic farming provides numerous advantages to consumers. In organic farming practices, synthetic fertilisers and pesticides were not used, so there was no agriculture pollution, the lands were fertile, and the crops were nutrient-dense. To increase yield, synthetic fertilisers and pesticides and GMO seeds were introduced. Many farmers switch from organic farming to conventional farming for financial reasons. People currently rely heavily on conventional goods. The organic market is still classified as niche marketing, with a focus on target consumers for their products. Even though it has many advantages over conventional products, people are not purchasing it for some reason. This study attempts to find the reason for not purchasing organic products by prospective consumers.

### Introduction

Organic foods have been grown or farmed without artificial hormones, antibiotics, or genetically modified organisms (GMOs). Organically grown crops typically use natural fertilisers such as manure to improve plant growth. Antibiotics and hormones are not given to organically raised animals. Organic farming tends to improve soil quality and groundwater conservation. It also reduces pollution and may be more environmentally friendly. Organic food has grown in popularity as consumers have increasingly sought out and purchased foods that they perceive to be healthier and grown in environmentally friendly ways. Organic food is typically purchased by consumers to reduce their exposure to pesticide residues and GMOs. Furthermore, some research indicates that organically grown crops have higher nutritional content than comparable nonorganic crops, and some people prefer organic foods. However, whether organic food shipped in from around the world is truly a sustainable method of food production remains to be seen. Organically grown food from a local farmer using an integrated whole-farm approach is certainly environmentally sustainable, though the economic sustainability of such an endeavour can be difficult.

### Review of Literature

Fotopoulos and Krystallis (2002) In terms of purchase intention and awareness of organic products, there are three types of consumers: unaware, aware users, and aware nonusers. The barriers to purchasing organic products are a lack of awareness, a lack of communication, a lack of availability, and high price. The researcher gives more weight to aware non-users.

Susanne Padel and Carolyn Foster (2005) states that price remains the barrier for many consumers to purchase the organic product. This may change if people know the value of what they get by paying extra. Consumers' decision-making towards purchasing organic products is not always the same. They will not choose conventional products always they prefer to buy organic products also.

Marija Ham, et al. (2016) convey that Negative attitudes toward organic food are the most significant impediment to purchasing organic food. Negative attitudes such as "organic food taste worse," "organic food also contains artificial flavours and additives," and "buying organic food does not seem appealing to me" discourage people from purchasing organic food. "The Importance of

*Dr. Beulah Suresh*

PRINCIPAL  
AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006.  
Vellore District, Tamil Nadu.

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*Sr. Jyoti Singh*

PRINCIPAL  
AUXILIUM COLLEGE. (Autonomous)  
Gandhi Nagar, Vellore - 632 006.  
Vellore District, Tamil Nadu.



Department of Philosophy  
Rabindra Bharati University  
56 A, Barrackpur Trunk Road, Kolkata - 700 05

Dr. P. RAJESWARI, Assistant Professor, Department of Business Administration, Auxilium College (Autonomous), Vellore, Tamilnadu

### Abstract

In today's scenario, there is the emergence of an ecological habitus, lot of transformation in consumer behaviour. This study examines the consumers' motives for choosing organic food. Organic agriculture is the environmentally beneficial alternative to conventional agriculture. The behaviour of an individual is influenced by various internal and external factors. The study is founded on the theory of reasoned action. The study proposed a conceptual model and adopted a descriptive and analytical research design. The data was collected through a structured questionnaire. The size of the sample was 190. The study considers factors motive to choose organic food are personal values, health conscious and influence of advertisement. The study applied the t test, ANOVA and Multiple regression test to test the hypothesis using SPSS. The study concluded that personal values are important factors that influence the purchase and satisfaction of organic food users. The study recommends valuable suggestions and concludes that this study is also part of it, contributing to environmental concern and bringing about change for a sustainable environment.

**Keywords:** Organic food, theory of reason action, personal values, health conscious, influence of advertisement, sustainable environment.

### Introduction

The consumer demand towards organic food products is increasing rapidly and becoming a worldwide phenomenon. The source of organic food is derived from Organic Agriculture (OA), which is gaining popularity around the globe every day. Organic agriculture means the environmentally beneficial alternative to conventional agriculture. The demand for organic food items has skyrocketed, according to Expert Market Research, the market for organic foods in India was valued at USD 1238 million in 2022, and between 2022 and 2028, it is anticipated to increase at a Compound annual growth rate of almost 22%, reaching a value of approximately USD 4082 million. The behaviour of an individual is influenced by various internal and external factors. Among the various factors, the study has chosen that personal values and health values are important contributors to consumers' decision making. The four P's of marketing mix (Product, Price, Place and Promotion) offer the marketer the opportunity to build a strategy for their business.

### Review of Literature

This study is based on Theory of Reasoned Action (TRA) model, which was developed by Fishbein and Azjen in 1975. According to this theory, every action is preceded by an intelligent cognitive process. This theory has focused more emphasis on the significance of intention than actual usage.

Most consumers were driven to purchase organic products for health-related reasons (Zanoli & Naspetti 2002 and Roitner-Schobesberger *et al.*, 2008). Chryssohoidis & Krystallis (2005) stated that the health benefits and better taste of organic food are the main reasons people buy organic items. The intake and purchase of organic foods, as well as attitudes about consuming organic foods, were strongly associated with health benefits (Lea and Worsley, 2005). According to Phuah *et al.* (2011), the demand for functional food, organic food, green food, and natural food has increased as a result of consumers' growing understanding of the health benefits and nutritional worth of food. Sharon and Jonathan (2011) noted in their study that a favourable attitude toward organic food products. Most studies show that women are more likely than males to purchase, consume organic foods in greater amounts, and have favourable attitudes toward them (Lea & Worsley, 2005 and Urena, Bernabeu, & Olmeda, 2008). Durham (2007) stated that Organic food preferences are less frequent among older persons.

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PRINCIPAL  
AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 016.  
Vellore District, Tamil Nadu.

A STUDY ON THE EFFECT OF TRAINING AND DEVELOPMENT ON THE ATTITUDE OF BANK EMPLOYEES AT VELLORE

**S. UNAMAGESWARI, Ph.D.** Scholar (Part-time), Assistant Professor, Department of Business Administration, Auxilium College (Autonomous), Vellore, Tamilnadu.

**Dr. RENUGA DEVI,** Assistant Professor, PG and Research Department of Business Administration, Auxilium College (Autonomous), Vellore, Tamilnadu.

**Abstract**

The purpose of the study is to assess the effect of Training and Development on the Attitude of Bank employees. Data was collected from bank employees in Vellore and the sample size was 60 respondents. Questionnaire method was adopted to collect the data. Descriptive research design and simple random sampling was adopted to collect the data. Analysis of the data was done using SPSS 21. The study identified the most important Training and Development variable to extract the dependent variable i.e. attitude of bank employees.

**Key words:** Training and development, attitude, bank employees

**Introduction**

Organizations requires a number of effective elements like physical resources such as manufacturing tools and equipment to produce a product or service. financial resources which includes money, marketing capability to sell the products and services to customers and human resources which includes skills, knowledge, creativity, innovation and talents (Fisher et al. 1999). Out of all the resources Human resources are found to be important in terms of providing competitive advantage. The success of any business depends upon the ways and means to attract, retain, train, develop, motivate and maintain qualified Human resources within the organization. Dunn and Stephens define training as "the organization's efforts to improve an individual's ability to perform a job or organizational role". The importance of Training and Development can only be appreciated with a clear understanding of its impact on employees' attitude. Training and Development helps employees to achieve higher positions in their jobs as they can be more competent, work better with fewer errors and require less supervision.

Employee attitude describes the actions of employees towards their objectives and goals. Employee attitude includes three main dimensions namely the "Effective attitude" which includes emotional factors like feeling of employees, values or norms etc., the "Cognitive attitude" which includes employee's beliefs about the right and wrong concept and the "Behaviour attitude" which includes the intentions and decision making will and power.

**Purpose, Problem, Scope, Significance, Objectives and Hypothesis of the study**

The purpose of the study is to assess the effect of Training and Development on the Attitude of bank employees. Service sector is one of the developing sectors in India and among the service sector banks contributes 50 - 53% to Gross domestic product (GDP). Banking sector mainly depends on competent human resources for its profitability and development. They wanted to retain human resources by providing training to its employees. When the ability of the employees to perform a job is increased by training, higher maybe the job satisfaction and organisational commitment and productivity. Hence the study made an attempt to assess the effect of training and development on the attitude of bank employees. The study is carried out among the bank employees in Vellore through online survey and structured questionnaire. This study can be carried out in other districts and the results can be generalized. A comparative study of private sector and public sector banks can also be done. Human Resource Practices plays a major role in shaping the attitude of employees. If the attitude is good then it results in job satisfaction and organizational commitment. One of the Human Resource Practice namely Training and Development is taken for the study. The study aims to assess the effect of Training and Development on the Attitude of Bank employees.

# Prediction of Cardiovascular Diseases Using Bio-Inspired MKCB Optimization Algorithm

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## Prediction of Cardiovascular Diseases Using Bio-Inspired MKCB Optimization Algorithm

**Dr. Pavithra v**

*Assistant Professor, Department of Computer Science and Applications,  
SRM Institute of Science and Technology, Ramapuram, Chennai*

**Dr. Uma Shankari S**

*Assistant Professor, Department of Computer Science and Applications,  
SRM Institute of Science and Technology, Ramapuram, Chennai*

**Dr. Shobana R**

*Assistant Professor, Department of Computer Science and Applications,  
Auxilium College Vellore*

**Dr. R Shanthi**

*Assistant Professor, Department of Computer Science and Applications,  
A.M Jain College, Chennai*

### Abstract

Early detection and prevention of cardiovascular diseases (CVDs) are crucial for reducing mortality and morbidity associated with these illnesses. Data mining techniques can play an important role in this effort by extracting useful information from large and complex datasets, such as electronic health records (EHRs) and clinical trial data, to identify risk factors for CVDs, predict the development of these diseases, and improve the diagnosis and treatment of patients. Heart disease is one of the most common causes of mortality in the world today. While attempting to predict cardiovascular disease, clinical data analysis faces major challenges. It has been shown that it is possible to draw inferences and make predictions from the large amount of data produced by the healthcare industry with the aid of machine learning (ML). In addition, we have seen the use of ML techniques in recent developments in a number of IoT fields (IoT). Using ML to predict heart disease has only been the subject of a few studies. In this article, we propose a novel multi-Kernel optimization technique with cat boost algorithm to predict the cardiovascular disease by detecting essential features using machine learning techniques.

### 1. INTRODUCTION

Cardiovascular disease (CVD) encompasses a wide range of conditions affecting the heart and blood vessels, including coronary artery disease (CAD), stroke, and heart failure. The risk factors you mention, such as smoking, high blood pressure, and high cholesterol, are major

contributors to the development of CVD. Early diagnosis and intervention are crucial in managing CVD, as many people with the condition may not have symptoms until they develop severe disease. For example, CAD can cause angina (chest pain) or a heart attack, but it can also be present without any symptoms. There are several non-invasive diagnostic tests

**PRINCIPAL**  
AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006.  
Vellore District, Tamil Nadu.

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# Multifunctional organic and inorganic hybrid bionanocomposite of chitosan/poly(vinyl alcohol)/nanobioactive glass/nanocellulose for bone tissue engineering

Narmatha Christy P<sup>a,c</sup>, Khaleel Basha S<sup>b,c</sup>, Sugantha Kumari V<sup>a,c,\*</sup>

<sup>a</sup> PG and Research Department of Chemistry, Auxilium College (Autonomous), Vellore, 632006, Tamil Nadu, India

<sup>b</sup> PG and Research Department of Chemistry, C. Abdul Hakeem College, Melvisharam, 632509, Tamil Nadu, India

<sup>c</sup> Affiliated to Thiruvalluvar University, Serkkadu, Vellore, 632115, Tamil Nadu, India

## ARTICLE INFO

### Keywords

Chitosan  
Poly(vinyl alcohol)  
Cellulose  
Bioactive glass  
Bone tissue engineering  
Bionanocomposite

## ABSTRACT

The present study explored a novel organic-inorganic hybrid CPBNC bionanocomposite by developing chitosan (C)-poly(vinyl alcohol) (P)/nanobioactive glass (B)-nanocellulose (NC) with the addition of 1%, 2% and 3 wt% of nanocellulose as template material for bone tissue application. Nanobioactive glass of size 6–10 nm and nanocellulose of size 6–7 nm was confirmed by TEM analysis. X-ray diffraction and Fourier transform infrared spectroscopy indicated strong electrostatic interactions between the functional groups present in the CPBNC bionanocomposite. The mechanical analysis confirmed the formation of CPBNC bionanocomposite and showed improved tensile strength ( $59.7 \pm 1.5$  MPa) young's modulus ( $174.9 \pm 6.1$  MPa) and compressive strength ( $4.9 \pm 0.2$  MPa). Porosity percentage of 61–79% was comparable to cancellous bones with suitable swelling and decreased degradation behaviour properties that could be ideal for cell seeding. Morphological studies by FE-SEM displayed a homogeneous dispersion and smooth surface. The biomimetic mineralization process confirmed the hydroxyapatite nucleation from FE-SEM analysis. It was observed that the CPBNC bionanocomposites provided a better antibacterial effect against *E. coli* and *S. aureus*. The hemocompatibility test proved that CPBNC bionanocomposites are blood compatible and showed a hemolytic ratio of less than 2%. The above findings point to a simple method of synthesizing high-performance NC-based scaffolds for bone tissue engineering.

## 1. Introduction

The medication of bone destruction disorders caused by tumour resection, skeletal abnormalities, comminuted fractures, osteomyelitis, trauma and infections pose a difficult challenge for orthopedic surgeons (Patel et al., 2021). A significant number of patients experience large bone lesions that are difficult to heal by bone regeneration and self-healing (Christy et al., 2022). The increased demand for bone treatment reflects the necessity of research on bone grafting and bone regeneration. The autologous, allografts and xenografts bone grafts include limitations in terms of immune complication, disease transmission and implant failure. As a result, to compensate for these issues, bone tissue regeneration uses an artificial biomimetic scaffold and emerged as a promising technique in tissue engineering (Chen et al., 2016; Vijayavenkataraman et al., 2018).

Bone tissue engineering is a promising alternative technique that is being investigated as a replacement for traditional therapies (Qu et al., 2019). Naturally derived polymers such as chitosan, collagen, alginate, fibrin, gelatin and synthetically derived polymers such as poly(vinyl alcohol), poly(caprolactone), poly(lactic acid), poly(urethane) have been extensively used as biomaterials for tissue engineering (Rao et al., 2018). Scaffolds derived from naturally and synthetically derived biomaterials can be used in biomedical applications due to their similarity in properties with the native extracellular matrix, which provides adequate support for increased cellular activity (Zou et al., 2019). Chitosan and poly(vinyl alcohol) are considered attractive materials for tissue regeneration due to their exceptional biocompatibility and desirable chemical structure.

Chitosan is a copolymer of 2-amino-2-deoxy- $\beta$ -D-glucopyranose (glucosamine) and 2-acetamide-2-deoxy- $\beta$ -D-glucopyranose (N-

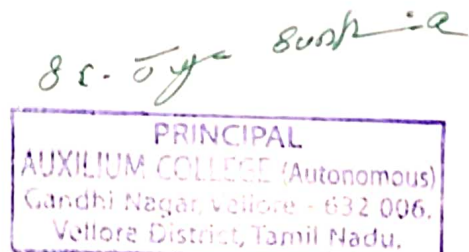
\* Corresponding author. PG and Research Department of Chemistry, Auxilium College (Autonomous), Vellore, 632006, Tamil Nadu, India.  
E-mail address: [suganthak@auxiliumcollege.edu.in](mailto:suganthak@auxiliumcollege.edu.in) (S.K. V).

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## Pectin / chitosan nanoparticle beads as potential carriers for quercetin release

T. Nalini<sup>a</sup>, S. Khaleel Basha<sup>b</sup>, A. Mohamed Sadiq<sup>c</sup>, V. Sugantha Kumari<sup>d,\*</sup>

<sup>a</sup> Department of Biochemistry, D.K.M College (Autonomous), Vellore 632001, Tamil Nadu, India

<sup>b</sup> Department of Chemistry, C. Abdul Hakeem College (Autonomous), Melvisharam 632509, Tamil Nadu, India

<sup>c</sup> Department of Biochemistry, Adhiparasakthi College of Arts and Science, Kalavai 632506, Tamil Nadu, India

<sup>d</sup> Department of Chemistry, Auxilium College (Autonomous), Vellore, Tamil Nadu 632006, India

### ARTICLE INFO

#### Keywords:

Nanoparticulate bead  
Quercetin  
Pectin  
Chitosan  
*In vitro* drug release

### ABSTRACT

The present work explores the fabrication of pectin/chitosan nanoparticle (PEC/CSNP) beads as nanocarrier encapsulating hydrophobic quercetin overcome solubility and sensitivity problems by ionotropic gelation method. ATR-FTIR studies evidenced the chemical interaction among the drug and the polymer matrix. The surface morphology of the unloaded and quercetin loaded PEC/CSNPs beads were characterized by scanning electron microscopy. The nanoparticulate beads had higher % encapsulation efficiency (EE) that varied between 34% and 56.2% and loading capacity (LC) from 12% to 24.4%. *In vitro* drug release study of the beads showed a capacity to release quercetin in a sustained release pattern. The swelling behavior of the beads demonstrated an increase in mechanical resistance due to the presence of pectin in the formulation at low pH. The association of quercetin and the polymeric nanoparticles induces a synergistic effect that improved the beads antibacterial properties. The antioxidant potency of quercetin was enhanced by 71% after encapsulation and hemolysis studies showed good blood compatibility. The *in vitro* cytotoxicity of blank and Q-PEC/CSNP beads showed cell viability above 80% on the L929 cell line. These results suggested that the PEC/CSNPs beads can be suitably an effective drug delivery vehicle emphasizing the stability of chitosan nanoparticles in the gastrointestinal tract where pH is low.

### 1. Introduction

Drug delivery has always been an evolving component of biomedical research in enhancing the bioavailability and efficacy of medicinal agents [1]. Different nanosystems, such as nanoparticles, liposomes, phytosomes, solid lipid nanoparticles, nanoemulsions, ethosomes, microspheres, and polymeric micelles, have demonstrated renowned progress in drug delivery applications, allowing for surface modification, functionalization, high drug loading, and the induction of stimuli responsive entities, resulting in excellent pharmacokinetics, improved bioavailability, prolonged time of circulation in the blood and protection from degradation within the stomach before being released in the site of wanting considerably increasing therapeutic efficiency, leading to minimal dosage and fewer side effects as compared with conventional release systems [2]. Drug release at a controlled rate will also improve its efficiency and protection [3]. Among several approaches on the use of bionanosystems presenting biocompatibility, biodegradability and

nontoxicity, polymeric nanoparticles have been explored as efficient candidates as nanocarriers. Enhanced permeation and retention effect is the main impetus considering nanoparticles as potential delivery vehicles for sustained and targeted drug release. Relatively high drug loading can be achieved on nanoparticle systems without any chemical reaction, thereby preserving the drug activity. Furthermore, encapsulation of drugs into polymeric nanoparticles tends to revamp the kinetics, body distribution and release mechanism of drugs [4].

Biopolymers have been the key choice as a material for coating, stabilization and encapsulation in biomedical applications. Pectin (PEC) a polyanionic, polyuronate heteropolysaccharide in the cell wall of plants has partially esterified 1,4-linked D-galacturonic acid residues [5, 6]. On account of its biodegradable, cytocompatible gelling mechanism, processibility and nontoxic nature, the streamline of dissolution in basic environments it finds an intensive application in biomedicine and drug delivery, gene delivery, wound healing and tissue engineering applications [7,8]. Pectin is utilised in the microencapsulation of bioactive

\* Correspondence to: Thiruvalluvar University, Serkkadu, Vellore 632115, Tamil Nadu, India.

E-mail address: [suganthak@auxiliumcollege.edu.in](mailto:suganthak@auxiliumcollege.edu.in) (V.S. Kumari).

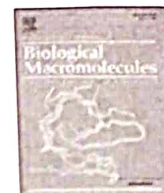
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 PRINCIPAL  
 AUXILIUM COLLEGE (Autonomous)  
 Gandhi Nagar, Vellore - 632 006.  
 Vellore District, Tamil Nadu.



## *In vitro* cytocompatibility assessment and antibacterial effects of quercetin encapsulated alginate/chitosan nanoparticle

T. Nalini<sup>a</sup>, S. Khaleel Basha<sup>b</sup>, A. Mohamed Sadiq<sup>c</sup>, V. Sugantha Kumari<sup>d,\*</sup>

<sup>a</sup> PG & Research Department of Biochemistry, D.K.M College (Autonomous), Vellore 632001, Tamil Nadu, India

<sup>b</sup> PG & Research Department of Chemistry, C. Abdul Hakeem College (Autonomous), Melvisharam 632509, Tamil Nadu, India

<sup>c</sup> PG & Research Department of Biochemistry, Adhiparasakthi College of Arts and Science, Kalavai 632506, Tamil Nadu, India

<sup>d</sup> PG & Research Department of Chemistry, Auxilium College (Autonomous), Vellore, Tamil Nadu 632006, India

### ARTICLE INFO

#### Keywords:

Quercetin  
Alginate/chitosan nanoparticle  
Cytotoxicity  
Antibacterial activity

### ABSTRACT

The present work aims at evaluating the *in vitro* biocompatibility, antibacterial activity and antioxidant capacity of the fabricated and optimized Alginate/Chitosan nanoparticles (ALG/CSNPs) and quercetin loaded Alginate/Chitosan nanoparticles (Q-ALG/CSNPs) with an improved biological efficacy on the hydrophobic flavonoid. The physicochemical properties were determined by TEM and FTIR analysis. The nanoparticles evaluated for the encapsulation of quercetin exerted % encapsulation efficiency (EE) that varied between 76 and 82.4 % and loading capacity (LC) from 31 to 46.5 %. Potential cytotoxicity of the ALG/CSNPs and Q-ALG/CSNPs upon L929 fibroblast cell line was evaluated by MTT reduction Assay and expressed as % cell viability. The *in vitro* antibacterial property was studied by well diffusion method against gram-positive bacteria *Staphylococcus aureus* (ATCC 25925) and gram-negative bacteria *Escherichia coli* (ATCC 25923). The inhibitory efficacy by scavenging free radical intermediates was evaluated by 1,1-diphenyl-2-picrylhydrazyl (DPPH) assay. The results of *in vitro* cytotoxicity showed biocompatibility towards L929 cells. Quercetin loaded Alginate/Chitosan nanoparticles inhibited the growth of microorganisms than pure quercetin. The 1,1-diphenyl-2-picrylhydrazyl (DPPH) radical scavenging results have shown a high level of antioxidant property for encapsulated Quercetin in Alginate/Chitosan nanoparticles compared to free Quercetin. The findings of our study suggest that the developed ALG/CSNPs and Q-ALG/CSNPs possess the prerequisites and be proposed as a suitable system for delivering quercetin with enhanced therapeutic effectuality.

### 1. Introduction

In recent years, advances in nanotechnology and its utilization in applications like drug delivery, targeted therapy, gene delivery, molecular imaging and tissue regeneration have enabled the researchers to find alternative approaches to attain the desired improvement in the pharmacokinetics of bioactive with poor dissolution [1,2]. The insight of encapsulating hydrophobic compounds in appropriately designed nanoscale drug delivery system represents one of the eminently productive strategies facilitating its improved bioavailability and therapeutic effectuality [3]. Biomaterials pose significant challenges in fabricating stable delivery systems that could maintain their structural integrity under extreme pH conditions and digestive enzymes, as well as high ionic strength in the gastrointestinal environment. Lipids, protein, and polysaccharides are the three major natural food colloids that have

been extensively studied to fabricate nanoscale oral delivery systems [4]. When nanoformulations are to be considered biopolymers are at the forefront and another major direction in nanoscale drug formulations owing to their biochemical properties such like nontoxicity, biocompatibility, and biodegradability representing a suitable vehicle for efficient delivery of drugs. Polycarbohydrates might be formulated from pectin, cellulose, gum, chitosan, starch, gelatin [5–7]. Nanosystems applying herbal remedies show many advantages, including improvements in the solubility of poorly water soluble drugs, can deliver the active constituent at an adequate concentration throughout the treatment period, their nano range feature imparts the ability directing it to the desired site of action circumventing all the deterrents in the drug metabolism [8,9]. The ability for controlled release of drugs from the nanoparticles makes it possible to tailor the pharmacokinetics of drugs and reduce their toxic side effects. Enhanced bio-distribution and

\* Corresponding author at: Thiruvalluvar University, Serkkadu, Vellore 632115, Tamil Nadu, India.

E-mail address: [suganthak@auxiliumcollege.edu.in](mailto:suganthak@auxiliumcollege.edu.in) (V.S. Kumari).

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Dr. Vigneshwar

PRINCIPAL  
AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006.  
Vellore District, Tamil Nadu.





# A novel, biocompatible nanostarch incorporated Polyaniline-Polyvinyl alcohol-Nanostarch hybrid scaffold for tissue engineering applications

D. Switha<sup>a</sup>, S. Khaleel Basha<sup>b</sup>, V. Sugantha Kumari<sup>a,\*</sup>

<sup>a</sup> Department of Chemistry, Auxilium College (Autonomous), Vellore 632006, Tamil Nadu, India

<sup>b</sup> Department of Chemistry, C. Abdul Hakeem College, Melvisharam 632509, Tamil Nadu, India

## ARTICLE INFO

### Keywords:

Polyaniline  
Polyvinyl alcohol  
Nanostarch  
Biocompatibility  
Tissue engineering

## ABSTRACT

The current work trying to enhance a conductive hybrid Polyaniline(PANI)-Polyvinyl alcohol(PVA)-Nanostarch (NS) bionanocomposite with 1%, 2%, and 3% nanostarch as a biocompatible substance for successful to apply tissue engineering. Fourier Transform Infrared spectroscopy, X-ray Diffraction, Field Emission Scanning Electron Microscopy, and Transmission Electron Microscopy with Selected Area Electron Diffraction were used to investigate the effect of NS at different concentrations (1%, 2%, and 3%) on PANI-PVA-NS bionanocomposite membranes. The presence of distinct functional groups and the chemical interaction associated with PANI-PVA-NS were demonstrated by FTIR spectra. The presence of NS in the PANI-PVA matrix was indicated by the XRD pattern, and there was a decrease in crystallinity. FESEM morphological investigations supported the porosity structure of the synthesised PANI-PVA-NS (1%, 2%, and 3%) bionanocomposite. TEM scans revealed that NS particles have a size of 53 nm. The mechanical examination supported that adding NS to PANI-PVA altered tensile strength, young's modulus and elongation at break are 454.42 MPa, 906.23 MPa, and 321.18% respectively. The addition of NS into PANI-PVA enhanced the swelling degree by the range of 320% while keeping the slower degradation rate at around 45% by maintaining the pH at 7.4. The in-vitro haemolytic experiment validated the hemocompatibility percentage of the bionanocomposite which was less than 2%. Thermogravimetric measurements validated the thermal stability of the samples at a  $T_{max}$  of 500 °C. The redox properties of the samples were examined using cyclic voltammetry studies. The antibacterial activity of bionanocomposite was investigated using gram-positive bacteria, *Enterococcus faecalis* and *Streptococcus aureus*, and gram-negative bacteria, *Salmonella typhi* and *Escherichia coli*, and the results revealed an efficient zone of inhibition against all tested bacterial species. According to the studies, the developed bionanocomposite could be advantageous in tissue engineering applications.

## 1. Introduction

Tissue engineering is a high-level scientific discipline that integrates a scaffold, cells, and biological components to remedy for organ/tissue impairments [1–2]. Scaffolds perform a variety of roles, such as biocompatibility with host tissues, tunable biodegradation rate and non-toxic degradation products, suitable porosity for transporting nutrients and wastes, mechanical strength, and sterilization [3]. The American National Institute of Health defines biomaterials as “any active element or combination of active chemicals, isolated natively or modified synthetically, that could be used in part or whole for tissue/organ replacement” [4]. A range of materials, including metals, ceramics, and polymers, have been used in tissue engineering applications. However,

the ability of polymer as a single material to meet the requirements of a natural cellular matrix is limited [5]. Hence, the scaffold should incorporate all of the desired properties of the materials to facilitate cell regulation. Polymers produced from many sources can add to the overall performance of the scaffold. Synthetic, natural, and conductive polymers have recently been explored for tissue engineering purposes because of their structural flexibility and ease of modification for better biodegradation via Physico-chemical modifications [6].

Conducting polymers (CPs) are a type of organic macromolecule that has properties such as ease of synthesis and modifications. The flexible nature of the organic conductive materials enhances the mechanical behavior and compositional processability with cells and organs [7]. Polyaniline (PANI) and its derivatives and composites are attractive

\* Corresponding author at: Thiruvalluvar University, Serkkadu, Vellore 632115, Tamil Nadu, India.  
E-mail address: [suganthak@auxiliumcollege.edu.in](mailto:suganthak@auxiliumcollege.edu.in) (V. Sugantha Kumari).

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Dr. V. Sugantha Kumari

PRINCIPAL  
AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006.  
Vellore District, Tamil Nadu.



## Assessment of acute oral toxicity of quercetin loaded alginate/chitosan nanoparticles: in vivo study

T. Nalini<sup>1</sup> · S. Khaleel Basha<sup>2</sup> · A. Mohamed Sadiq<sup>3</sup> · V. Sugantha Kumari<sup>4,5</sup>

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### Abstract

The present work explores the biocompatibility of the fabricated and optimized blank Alginate/chitosan nanoparticles (ALG/CSNPs) and quercetin loaded Alginate/chitosan nanoparticles (Q-ALG/CSNPs) with an emphasis on producing an improved biological efficacy on the hydrophobic flavonoid. ATR-FTIR studies evidenced the chemical interaction among the drug and the polymer matrix. The morphology of the chitosan nanoparticles (CSNPs) and quercetin loaded ALG/CSNPs was characterized by transmission electron microscopy. The prepared nanoformulations evaluated for the encapsulation of quercetin exerted % encapsulation efficiency (EE) that varied between 76 and 82.4% and loading capacity (LC) from 31 to 46.5%. The nanoparticles showed in vitro blood compatibility and ex vivo mucoadhesivity. Furthermore, the in vivo toxicity study of the nanoparticles revealed neither any acute systemic toxicity following its oral administration in rats with LD<sub>50</sub> greater than 75 mg/kg body weight ensuring an efficient nanocarrier of oral quercetin in the animal model. The biochemical analysis of liver and kidney enzymes revealed that the nanoformulations had no decline in the normal functions of the vital organs indicative of good biosafety of nanoencapsulated quercetin. Histopathological studies of liver, kidney, lung and heart tissues have shown almost normal architecture after treatment with the nanoparticles in the experimental phase. These findings suggest that the developed ALG/CSNPs and Q-ALG/CSNPs possess the prerequisites and be proposed as a suitable system for delivering oral quercetin with enhanced therapeutic effectuality.

**Keywords** Quercetin · Alginate/chitosan nanoparticle · Mucoadhesion · Biocompatibility · Acute toxicity

✉ V. Sugantha Kumari  
suganthak@auxiliumcollege.edu.in


Extended author information available on the last page of the article

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*Dr. V. Sugantha Kumari*  
PRINCIPAL  
AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006.  
Vellore District, Tamil Nadu.

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# In vitro cytocompatibility evaluation of nanostarch reinforced polyaniline-polyvinyl alcohol conductive bionanocomposites for skin tissue engineering application

D. Switha<sup>1</sup> · S. Khaleel Basha<sup>2</sup> · V. Sugantha Kumari<sup>1,3</sup> 

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## Abstract


In this study, we aimed to fabricate nanostarch (NS) reinforced polyaniline/polyvinyl alcohol (PANI-PVA) bionanocomposite of polyaniline-polyvinyl alcohol-nanostarch for skin tissue engineering application. The microstructure of the bionanocomposite was analyzed using TEM and the particle size ranged from 35 to 37 nm. The swelling degree was increased with the increase in the concentration of nanostarch and displayed a greater hydrophilic surface leading to the increase in the absorption. The degradation index analysis was recorded with an increase in the weight loss of the scaffold which attributed to a strong hydrogen bond network. The bionanocomposites exhibited 70% to 82% of cytocompatibility towards L929 cells during the incubation period of day 1, day 4 and day 7. Hence, the novel bionanocomposite with the features of enhanced water-holding capacity, weight loss percentage and cytocompatibility made it suitable for the prospective use in skin tissue engineering applications.

✉ V. Sugantha Kumari, suganthak@auxiliumcollege.edu.in | <sup>1</sup>PG and Research Department of Chemistry, Auxilium College (Autonomous), Vellore, Tamil Nadu 632006, India. <sup>2</sup>PG and Research Department of Chemistry, C. Abdul Hakeem College, Melvisharam, Tamil Nadu 632509, India. <sup>3</sup>Affiliated to Thiruvalluvar University, Serkkadu, Vellore, Tamil Nadu 632115, India.



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*S. Khaleel Basha*  
PRINCIPAL  
AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006.  
Vellore, Tamil Nadu.





# In Vitro Study of Biocompatible Hybrid Scaffold of Polyvinyl Alcohol–Polyaniline–Nanocellulose for Tissue Engineering Applications

Switha Dominic<sup>1,3</sup> · Khaleel Basha Sabjan<sup>2,3</sup> · Sugantha Kumari Vinoji<sup>1,3</sup>

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## Abstract

The development of tissue engineering techniques depends on scaffolds that combine the benefits of natural and synthetic biopolymers, which are both highly biocompatible and low-cost materials with outstanding mechanical qualities. The creation of such scaffolds could be accomplished by combining biopolymers with fillers like nanocellulose (NC). Herein, polyaniline (PANI)-polyvinyl alcohol (PVA)-NC bionanocomposites with different NC loadings were prepared using sol–gel-assisted solvent casting and characterized as prospective materials for tissue engineering applications. All three components were well miscible and mutually compatible because of hydrogen bonding interactions and the efficient dispersion of NC in the PANI-PVA matrix. Adding NC changed the morphology of PANI-PVA, increased its swelling capacity and porosity, improved its mechanical properties, decelerated biodegradation in vitro, and increased hemocompatibility in vitro to a level compliant with the ASTM 756–13 standard. The prepared bionanocomposites displayed an evident response toward both gram-positive and gram-negative bacterial strains and were thus determined to be well suited for treating wounded or infected tissues. Our findings demonstrate how the drawbacks of individual polymers (e.g., PANI and PVA) that preclude their biological applications can be mitigated via co-blending with suitable fillers such as NC.

**Keywords** Polyaniline · Nanocellulose · Biomaterial · Bionanocomposite · Tissue engineering

## 1 Introduction

Tissue engineering seeks to restore or regenerate damaged biological tissues by employing cells and physiologically active substances in combination with synthetic functional components, such as scaffolds [1, 2]. For example, biodegradable polymers fabricated as 3D porous polymeric scaffolds are widely used as temporary extracellular matrices [3–5] that allow for the recovery of both soft and hard tissues. These scaffolds exhibit source- and application-dependent

physicochemical and biological features. Additionally, polymeric structures providing mechanical support for the development of neurites and scar tissue suppression have been reported [6]. Amani et al., summarized the medical applications of biopolymers and biocomposites and categorized them as natural or synthetic [7]. Synthetic biopolymers are inexpensive and exhibit excellent mechanical properties but suffer from limited biocompatibility, whereas natural biopolymers exhibit high biocompatibility but display poor mechanical performance. Consequently, methods of improving biopolymer performance (e.g., by blending biopolymers with fillers [8]) are highly sought after.

Synthetic polymers have a wide range of applications, especially when combined with natural polymers or nanomaterials [9]. For example, polyvinyl alcohol (PVA) is a well-known readily synthesizable, nontoxic, hydrophilic, and biodegradable synthetic polymer that exhibits extraordinary mechanical strength [10] but suffers from low biocompatibility. Therefore, it is often blended with natural polymers to develop scaffolds with improved physicochemical and biological properties. Such PVA-based scaffolds

✉ Sugantha Kumari Vinoji  
suganthak@auxiliumcollege.edu.in

<sup>1</sup> PG and Research Department of Chemistry, Auxilium College (Autonomous), Vellore 632006, Tamil Nadu, India

<sup>2</sup> PG and Research Department of Chemistry, C. Abdul Hakeem College, Melvisharam 632509, Tamil Nadu, India

<sup>3</sup> Auxilium College and Abdul Hakeem College Are Affiliated With Thiruvalluvar University, Serkkadu, Vellore 632115, Tamil Nadu, India



# Fabrication of conductive hybrid scaffold based on polyaniline/polyvinyl alcohol–chitosan nanoparticles for skin tissue engineering application

D. Switha<sup>1</sup> · S. Khaleel Basha<sup>2</sup> · V. Sugantha Kumari<sup>1</sup>

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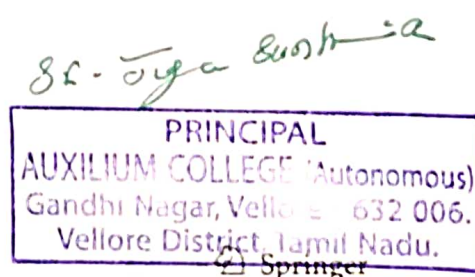
## Abstract

The current assignment describes on the integration of chitosan nanoparticles in the polymeric matrix of polyaniline (PANI)—polyvinyl alcohol (PVA) resulted in the successful fabrication of a novel bionanocomposite. The cost-effective and easy ionic gelation procedure was used to synthesize chitosan nanoparticles (CNPs) and transmission electron microscopy analysis presented the spherical shape with a nano-regimen below 47 nm of CNPs. The Fourier transform infrared spectroscopy results highlighted the distinctive functional groups and chemical interactions associated with chitosan nanoparticles and the polyaniline–polyvinyl alcohol matrix. The integration of chitosan nanoparticles had an effect on the amorphous character of the synthesized bionanocomposite, according to X-ray diffraction studies. The surface morphology was revealed by field emissions scanning electron microscopy pictures, and thermo-gravimetric analysis revealed that the inclusion of chitosan nanoparticles improved thermal stability. Cyclic voltammetry is used to determine the electroactivity of a synthesized material. The antibacterial activity of bionanocomposite was tested against Gram-positive bacteria *Enterococcus faecalis* and *Staphylococcus aureus*, as well as Gram-negative bacteria *salmonella typhi* and *Escherichia coli*. The highest antibacterial activity of all the bacterial strains was at 13 mm, 10.9 mm, 15 mm, and 17 mm, respectively. The synergistic effect of PANI-PVA-CNPs, as evidenced by its mechanical properties, swelling ratio, and percentage of porosity results, supported that the addition of CNPs to PANI-PVA enhanced the values suitable for the regeneration of skin tissues. The in vitro hemolytic study demonstrated the hemocompatibility value was less than 2%, implying that the bionanocomposite has the potential to be used as an efficient material in skin tissue engineering applications.

**Keywords** Biomedical application · Biomaterials · Bionanocomposite · Conductive polymer · Chitosan nanoparticles

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## BIOPOLYMERIC NANOCOMPOSITE SCAFFOLDS FOR NERVE TISSUE ENGINEERING APPLICATIONS: A REVIEW

D. Switha<sup>a\*</sup>, S. Khaleel Basha<sup>b\*</sup> and V. Sugantha Kumari<sup>a\*o#</sup>

<sup>a</sup> Department of Chemistry, Auxilium College (Autonomous), Vellore - 632006, Tamil Nadu, India.

<sup>b</sup> Department of Chemistry, C. Abdul Hakeem College, Melvisharam - 632509, Tamil Nadu, India.

### AUTHORS' CONTRIBUTIONS

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Review Article

### ABSTRACT

Human biological processes are heavily influenced by nervous system and it interacts in physiological processes, such as cognition and individual cell function therefore; injury of the peripheral or central nervous system (PNS or CNS) causes loss of sensory and motor functions, affecting the patients' quality of life. The regeneration capability of the human adult nervous system is often limited, and its recovery is difficult due to the complex physiology system and limited regenerative capacity. Tissue engineering is a novel clinical treatment field utilizing a blend of polymeric scaffolds and cells, representing a promising methodology for nerve recovery. The engineered materials and the fabricated neural scaffolds have gained expanding consideration in the field of nerve repairs. Nerve scaffolds surpass autologous nerve grafts in terms of implantation rate and outcome. Additionally, they foster a conducive cellular environment enabling axonal proliferation, neurite extension and connection, and neural cell survivability, adhesion, and migration. Due to their exceptional chemical and physical capabilities, numerous natural and manmade polymeric materials have been preferentially used during neural scaffolds to date. This review article presents various natural and synthetic polymers being used in neural tissue engineering, along with their benefits and challenges for neural recovery.

**Keywords:** Tissue engineering; nerve tissue engineering; biomaterials; neural scaffolds.

### 1. INTRODUCTION

Tissue engineering (TE) has grown by leaps and bounds over the last few decades into a viable medical and research discipline [1-2]. "This fascinating interdisciplinary field combines cellular and molecular biology, chemistry, medicine, engineering, and many other domains to ensure minimal mortality and morbidity rates attributed to worn out or damaged

tissues and organs" [3-12]. The potential of TE to regenerate patient tissue and organs that are entirely bereft of poor biocompatibility and limited bio-functionality, as well as extreme immune rejection, is a distinguishing trait. It is classified as skin, bone, vascular, kidney, and liver TE depending on the wide spectrum of applications on cell types [13]. The ultimate focus of TE is to restore, replace, regenerate, and improve the function and structure of tissues and

<sup>a</sup> Affiliated to Thiruvalluvar University, Serkkadu, Vellore - 632115, Tamil Nadu, India.

<sup>o</sup> PG and Research;

<sup>\*</sup>Corresponding author: Email: suganthak@auxiliumcollege.edu.in;

Dr. V. Sugantha Kumari

PRINCIPAL  
AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006.  
Vellore District, Tamil Nadu.

Diana Monisha R, PhD Research Scholar, PG & Research Department of English, Auxilium College (Autonomous), Vellore- 632006, Tamilnadu, India.

Dr. Vernum Cecilia P.A.A, Supervisor and Research Guide, Associate Professor & Head, PG & Research Department of English, Auxilium College (Autonomous), Vellore- 632006, Tamilnadu, India.

**Abstract:**

The Turkish novelist Elif Shafak's writing primarily focuses on social conditions that change in accordance with predetermined patterns. The characters' experiences help us grasp social stigmatisation and hierarchical structures. The cultural and social hierarchy that separates people based on class, colour, religion, and gender can be used to examine Elif Shafak's *Honour*. The treatment varies depending on the group that individual belongs to, according to a social spectrum. In light of the experiences of the characters, this categorization is known as intersectionality, and the paper aims to identify three forms of intersectionality in *Honour* by Elif Shafak.

**Keywords:** Classism, Discrimination, Cultural politics, Intersectionality.

**Introduction:**

First of all, intersectionality categorises individuals into groups according to their gender, class, colour, ethnicity, and other social markers of differences. Individualistic ideas are under the control of these social hierarchical tendencies. Intersectionality plays a role in how nationality, race, sexuality, and religion can reorganize people's identities. In intersectional studies, gender is a channel for connecting ideas, which gives rise to one of the most fundamental individualistic identity crises. Because one of the most frequently mentioned factors in social and cultural differences is gender in general.

Kimberlé Crenshaw employed the term intersectionality in 1989. Crenshaw identified gender as one of the key factors that link racism and intersectionality. The concept of "intersectionality" describes how various types of bias, such as institutionalised racism, homophobia, xenophobia, and sexism, are interrelated and must be studied as a whole in order to understand why people from varied minority groups face the greatest levels of oppression. The thinker assessed intersectionality as a theory that expressly expands the 'paradigm of discrimination' against women of colour. ("Representational Intersectionality")

According to Crenshaw, in *Demarginalizing the Intersection of Race and Sex: A Black Feminist Critique of Antidiscrimination Doctrine, Feminist Theory and Antiracist Politics*, "Intersectionality is a metaphor for understanding the ways that multiple forms of inequality or disadvantage sometimes compound themselves and create obstacles that often are not understood among conventional ways of thinking." (Crenshaw, 1989) Yet, there are many similarities between Crenshaw's intersectionality perspectives and those of Elif Shafak. It is clear that Crenshaw thinks the idea of intersectionality is defining women as a gender that is specifically discriminated against. Individuals' shared experiences with class, race, ethnicity, culture, and religion have an impact on gender in particular. (Coaston, 2019)

Notwithstanding Crenshaw's discussion on racism against black women, the concept of intersectionality may be seen as a framework for addressing other forms of morally and socially offensive discrimination. As an activist, Shafak maintains mental equilibrium in Crenshaw's simultaneous fields of view. *Mapping the Margins: Intersectionality, Identity Politics, and Violence against Women of Color* by Crenshaw is used to explain the relationship between Shafak and Crenshaw. Throughout the discourse, Crenshaw uses three different forms of intersectionality to explore and depict the violence suffered by women. According to Crenshaw, intersectionality can take three main forms: structural, political, and representational. (1245, 1991)

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**THE WISDOM OF FOLLY: FRAMED NARRATION IN BESCHI'S *PARAMARTHA GURU AND HIS DISCIPLES***

**Dr. AmalaValarmathy A.**, Assistant Professor, PG and Research Department of English, Auxilium College (Autonomous), Gandhi Nagar, Vellore- 632006

Beschi's *Paramartha Guru and Disciples* is a renowned work with a social reform theme that is recognized to be the first prose piece in Tamil, also known for its hilarious style of narration. Sujatha Vijayaraghavan describes it as a well injected vein of satire on several cardinal philosophical concepts that run through story after story. (119) *Paramartha Guru and Disciples* is a frame narrative that points to a type of storytelling which incorporates many more stories within the framework of an overall story. The stories are narrated by various characters within one plot and are unified as one whole. Beschi's deliberate attempt to foil the obvious and logical through the illogical acts of the characters oblivious of their foolishness confidently challenging the enlightened world is an attempt to wake up the reader/listener to the social reality.

Beschi, an Italian priest follows the tradition of Boccaccio's *Decameron* which was a seminal influence of Chaucer's *Canterbury Tales*, the best example of a frame narrative. Another important work is *The Thousand and One Arabian Nights* that is dramatic and builds on the suspense night after night as Scheherazade narrates a story to pass the night to stall her husband from killing her. The frame narrative technique can be found in ancient Indian Literature, in the epics *Mahabharata* and *Ramayana*, *Panchatantra*, *Seven Wise Masters*, the *Hitopadesha*, and *Vikram and the Vampire*. Popular Telugu and Kannada stories such as 'Thenali Raman Kathai' and 'Mariathai Raman Kathai', 'Birbal and Akbar' stories are also frame tales. Homer's *Odyssey* too makes use of this technique. Beschi hailing from a rich storytelling Italian tradition has immortalized the guru and his disciples in his classic frame narration which till today is a powerful medium to satirise the evils that thwart the society:

Independent prose in Tamil was used for the first time by Costanzo Beschi in his *Paramartha Guru Katha* (the story of the Guru who was a simpleton)... The stories of Beschi have gone into the folktales of India and have even been translated into many other Indian languages over the past 200 years. Subtle references to these satires can be found in every turn of speech in Tamil even today. (Rajee)

Prof. P. Raja has translated the classical work of Beschi titled as *Veeramamunivar's The Stupid Guru and His Foolish Disciples*. He acknowledges Beschi as the "Godfather of Tamil Literature" for his contribution as a grammarian, poet, prose writer, humourist and as lexicographer to Tamil language. Beschi's important works in Tamil are *Thonnool Vilakkam* (a grammar of high Tamil), *Theimpavani*, a metrical composition in 3615 verses in 36 cantos and *Chaturagarathi*, a Tamil dictionary. A review of the scholarship on frame narration reveals that the practice which was popular in epics is continued till today in postmodern texts:

David Herman suggested that the attraction toward this mechanism of inserting one story into another is primarily cognitive and functions as vehicles of "shared thinking, or socially distributed cognition." (3) Narrative embedding, like any other rational activity, requires a functional system. The embedded stories are usually established within frames which are normally understood as a kind of enclosing. In framed narratives, which are the simulation of oral storytelling; stories get embedded within other stories to where the narrator of each frame, narrate another story within which its character/characters, tell another story, etc. Thus we reach to what Todorov declared in his *Poetics of Prose*, that "embedding narrative is the narrative of a narrative". (Majd 68-69)

*Dr. Amala Valarmathy*  
PRINCIPAL  
AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006.  
Vellore District, Tamil Nadu.



UNION OF INCOMPATIBILITY IN ANITA DESAI'S *CRY, THE PEACOCK*

**Dr. E.Latha** Assistant Professor of English Auxilium College, Vellore-6 : [lathaphd65@gmail.com](mailto:lathaphd65@gmail.com)

**Abstract**

"Writing is a process of discovering the truth – the truth that is nine-tenths of an iceberg that lies submerged beneath the one-tenth visible portion we call reality. Writing is my way of plunging to the depths and exploring this underlying truth. All my writing is an effort to discover, to underline and convey the true significance of things," comments Anitha Desai in her biography. Writing was her strength and voice. The present paper attempts to explore the complexities of man-woman relationship, emphasizing on the 'union of incompatibility' in Anitha Desai's novel, *Cry, The Peacock*, reflecting the predicament of modern women in this male-dominated society and the destruction of the woman at the altar of marriage. The union of the matter-of-factness of men in contrast to the sentimental and emotional aspects of women resulting in a gradual erosion of relationship, happens to symbolize nullification of everything she longs to cherish in life. This paper is a humble attempt to drive home the delicate intricacies underlying a man-woman relationship in a conjugated life that should be most consciously handled, which would otherwise result in a disastrous marriage. Focusing on the mental working and agony experienced by a traditional God-fearing Hindu girl, Maya, brought up in a protected atmosphere (unaware of the unpleasant realities of life), ironically wedded to a non-Brahmin lawyer, Gauthama, who belongs to a family which does not know the simple pleasures of life, the writer portrays the emotional sufferings of the protagonist as she struggles to reveal her hidden passions to her dispassionate husband.

**Keywords:** Anticipation, emotional suffering, seclusion, termination.

**Traditional Phenomenon**

The heroine Maya hailing from a traditional background basks in pagan pleasure in nature and world anticipating 'sensual pleasure in living' her marital life. On failing to achieve reciprocation from her mentally preoccupied professional-minded husband, she withdraws in a shell of her inner world haunted by the prophecy and cry as she loses hold of the outside world. As R.K.Dhawan claims:

The novel begins with the death of Toto, Maya's pet dog. Its death causes great agony and fear in her mind: "She sat there, sobbing, waiting for her husband to come home. Now and then she went onto the verandah, and looked to see if he were coming up (1963:5)." Gautama's reaction to the incident is that of intellectual detachment; he views it as a minor incident, one among many and accepts it calmly. Maya is a weak character easily swayed by emotions while Gautama is stronger because of his commonsensical approach. (1991 vol.3:71-72)

Maya scorns at his coldness and despises his "incessant talk of cups of tea and philosophy" which he uses as a shield to keep him from hearing her talking and revealing herself. This attitude of Gautama's at every stage, adds more to her tragedy that she has no one to share her feelings with. Being a motherless child, she is groomed into acceptance of all that fate has to offer and live without complaints, by her father, and this conventional acceptance of the situation projects her as a suitable model of a traditional Hindu wife who is subtly subdued into dormant insignificance. Srivastava rightly expresses Maya's psychological plight:

Having lived a carefree life under the indulgent attentions of her loving father, Maya desires to have similar attentions from her husband Gautama, a father surrogate... The loving attention of her father makes Maya oblivious of the deadly shadow; but her husband Gautama fails to satisfy her intense longing for love and life, she is left to the solitude and silence of the house which prey upon her. (May 12, 2016)

THE CULTURE OF SURVIVAL IN TRADITIONAL INDIAN WOMEN FROM SELECT  
SHORT STORIES OF MULK RAJ ANAND

Dr. E. Latha Asst. Prof., Department of English Auxilium College, Vellore-6 :  
[lathaphd65@gmail.com](mailto:lathaphd65@gmail.com)

**Abstract**

Indian novelist, short story writer and art critic, Mulk Raj Anand sketches realistic and sympathetic pictures of the Indian poor in his works, tuning his readers to feel the intensity of emotions experienced by his characters and witness the insipid realities as they are encountered in course of the situations and circumstances. This research paper emphasizes on the theme of the position of women in traditional Indian society as portrayed by Anand, in some of his short stories in which women play the lead- role, and concentrates on the aspect of the 'Culture of Survival' imbibed into the instincts of women despite the challenges encountered. A deep sense of awareness of both the strengths and the short-comings of the traditional Indian way of life and a rich understanding of the impact of it, especially on women, exposing the limitations of tradition, Anand's mood is in turn truthful, resentful, ironical and satirical, as the subject and the condition demand. The locale for most of his stories is India. The present paper is a study on some of his very best literary pieces compiled in the book, *Greatest Short Stories*, containing his masterpieces which interpret the lives of Indian women visualizing and verbalizing their heart wrenching agonies and helpless conditions. His stories reveal a strong social satire, acute psychological perception synchronized with imaginative and emotional apprehension of certain aspects of life, and comprehend on the life of rustic Indian women who succumb to the life the way tradition binds them to lead, mustering courage to accept life by the culture of survival.

**Keywords:** Tradition, Culture, Survival, Sustenance

**Introduction**

As a prolific writer, Mulk Raj Anand has authored about fifteen novels; some of them are *Untouchable* (1935), *Coolie* (1936), *Two Leaves and a Bud* (1937), *The Village* (1939), *Across the Black Waters* (1941), *The Sword and the Sickle* (1942), *The Big Hearts* (1945), *Seven Summers* (1951), *The Private Life of an Indian Prince* (1953), *The Death of a Master of Arts* (1964), *Confessions of a Lover* (1976), *The Bubble* (1984), etc. Besides it, he has produced more than six collections of short stories, such as *The Lost Child and Other Stories* (1934), *The Barber's Trade Union and Other Stories* (1944), *The Tractor and the Corn Goddess and Other Stories* (1947), *Reflection on the Golden Bed and Other Stories* (1953), *The Power of Darkness and Other Stories* (1959), *Lajwanti and Other Stories* (1973). A variegated spectrum of themes touching religious hypocrisy, social injustice, exploitation of the have-nots, tradition versus modernity, and the position of women in the traditional Indian society add a unique colour to his short stories. Mulk Raj Anand is a humanist whose province is human nature. His novels and short stories embrace human experiences and convey a sense of life and character. Anand's skillful depiction of the Indian society which is hostile and callous to the lots of the down-trodden and weak reflect the humanist touch in his compositions.

**A Scrutiny**

Anand has worked on a variety of themes which have provided him ample scope to invest on psychological interest in reading through the part of his female characters and understanding their position in this traditional setting. The Indian woman has been living in the male dominant, patriarchal, traditional, religious, caste and class ridden society pulling on with oppression, exploitation, victimization in the name of social and cultural restraints. The Indian woman has all along maintained the tradition of tolerance, patience and persistence and has endured all kinds of exploitation – physical, mental, psychological, emotional ~~apart from~~ social, religious, cultural, economic and political exploitation finally emerging as unalloyed gold ready to face the challenges



## FACTORS THAT IMPACT THE ACQUISITION OF ENGLISH LANGUAGE PROFICIENCY AT THE TERTIARY LEVEL : A STUDY

**Dr. Amala Valarmathy A**, Assistant Professor

**Dr. D. Chitralekha**, Assistant Professor

PG and Research Department of English, Auxilium College (Autonomous), Vellore

### Abstract

The English language has become inseparable and unavoidable in the Indian Education system after colonialism. In the era of globalization learning English has become more of a requisite than a good-to-have kind of skill. Learning new ideas and concepts in a regional language gives a better understanding to the young minds but most of the disciplines in higher studies are taught in English so it is necessary that the students learn an additional language other than their mother tongue. In India, English is the working language in most industries as well. It is a fact that the English language serves as a medium of communication that connects us to the rest of the world. The present study is an analysis of the factors which affect the English proficiency level of the college students. The undergraduate students were provided with the link to take the proficiency test (a free online English test) offered by English Radar English level test CEFR A1-C2. A survey was conducted to find out the significant difference, if any, in the causes of problems in learning English with regard to Medium of instruction, learning environment, motivation, confidence, educational background, marks secured at the entry level. The study attempts to find out the leading factors in learning English at the tertiary level.

**Keywords:** *English proficiency – tertiary level - learning resources – factors - medium of instruction - learning environment – motivation - confidence - educational background*

The English Language has gained the status as an official Language in our country and most parts of the world. Universities worldwide use English as the common mode of communication and learning. This study is an analysis of the factors that influence learning the English language and provides possible solutions to overcome the barriers to attain highest levels of proficiency standards. The objective of the study is to find out the impediments faced by students in learning the English language at the tertiary level and the impact of various factors such as Medium of instruction, learning environment, motivation, confidence and educational background, marks secured at the entry level, the habit of reading English dailies and habit of listening to English news.

In general, students from rural backgrounds are perceived to have fewer opportunities to learn English than students from urban areas. Rural students from economically lower backgrounds perceive the English language as alien to them. The students are not able to construct sentences without grammatical errors in English. Most students try to memorize the lessons and exercises as they are not

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Department of Philosophy  
Rabindra Bharati University  
56A, Barrackpur Trunk. Road, Kolkata – 700 050

*Dr. Jaya Baskar*

PRINCIPAL

AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006,  
Vellore District, Tamil Nadu.

**A STUDY ON CUSTOMER SATISFACTION ON GREEN BANKING WITH SPECIAL  
REFERENCE TO RANIPET, VELLORE**

**Dr. R. GAYATHIRI**, Head i/c, Assistant Professor, Department of Commerce (Banking & Insurance), Auxilium College (Autonomous), Vellore, Tamilnadu  
**S. SANGEETHA**, Assistant Professor, Department of Commerce (Banking & Insurance), Auxilium College (Autonomous), Vellore, Tamilnadu  
**N. ASWINI**, Assistant Professor, Department of Commerce (Banking & Insurance), Auxilium College (Autonomous), Vellore, Tamilnadu

**Abstract**

In today's world, Global warming is a major issue of global economies. Countries across the world strive to protect their environment for the safest survival of the mankind. The present scenario necessitates every business irrespective of their nature and size, to focus and adapt Green approach in their operations. Banking industry is one of the key industry for economic development of the country. The green approach of banking sector is termed as Green Banking. Green banking practices includes technological advancements in day to day operations of banking sector which ensures environmental protection by reducing carbon footprints. This study is undertaken to identify customer awareness about Green banking with special reference to Ranipet. This study focus on the satisfaction level of respondent on the basis of their demographic variables such as Educational qualification, Gender, Age and Income of the respondents and also the problems faced by them while using Green Banking. It offers suggestions and conclusion based on Percentage analysis and chi-square test.

**Key words:** Global warming, green banking, environmental protection.

**Introduction**

Green Banking is like traditional banking performs all banking activities on internet platform. It is the initiative taken by the banks to develop their industry in green approach and a mission driven to protect environment. Green banking can also be referred as ethical banking. It uses technology and change the operating and usage pattern of banks as well as customers. Traditional services like application forms, pass book entries, using withdrawal and deposit slips, paper statements, letters to customers, etc are replaced with ATM Cards, Online banking, mobile banking, e-statements, SMS, e-cheque, e-applications etc. Banks can go green in 3 different ways: a.) Green Accounts b.) Online Statements c.) Internet Banking. Green banking reduces the operating cost, usage of paper and improves performance of banks in eh competitive market. As the idea of Green Banking is at developing stage in Ranipet. This study gives data about the client mindfulness about green Banking of different banks in Ranipet.

**Objectives of Study**

1. To assess the satisfaction level of customers regarding Green Banking.
2. To find out the problems faced by customer in Green Banking.

**Statement of the Problem**

The study aims to identify the Green Banking services rendered by various banks in Ranipet. The disadvantages of traditional banking system necessitate the introduction of Green Banking system, though it protects environment, it should be customer friendly and satisfy them in all aspects like safety, security, ease to use etc. In order to identify the customer satisfaction this study is undertaken.

**Limitations of the Study**

1. The study was conducted only in Ranipet district



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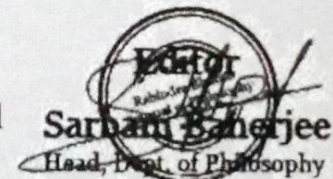
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**Sarbani Banerjee**  
Head, Dept. of Philosophy



AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006.  
Vellore District, Tamil Nadu.



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**N.ASWINI,**

Assistant Professor, Department of Commerce (Banking & Insurance), Auxilium College(Autonomous), Vellore,  
Tamilnadu

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*Sarban Banerjee*  
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*Authored By*

**S. SANGEETHA,**

Assistant Professor, Department of Commerce (Banking & Insurance), Auxilium College (Autonomous), Vellore,  
Tamilnadu

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*Sarbanil Banerjee*  
Head, Dept. of Philosophy

PRINCIPAL  
AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006.  
Vellore District, Tamil Nadu.





## Plants Secondary Metabolites as Medicines: A Review

Munasira Begum V.S.<sup>1\*</sup>, Mohamed Tariq N.P.M.<sup>2</sup>, Hemapriya J.<sup>3</sup> and Muhammed Shariq K.<sup>4</sup>

<sup>1</sup>Department of Microbiology, Auxilium College (Autonomous), Katpadi, India

<sup>2</sup>Department of Biotechnology, Islamiah College (Autonomous), Vaniyambadi, India

<sup>3</sup>Department of Microbiology, DKM College for Women, Vellore, India

<sup>4</sup>Department of Biochemistry, Islamiah College (Autonomous), Vaniyambadi, India

\*Corresponding Author

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**Abstract:** Medicinal plants are the most important source of life saving drugs for the majority of the world's population. Plants are an important source for the discovery of new products of medicinal value for drug development as they produce a wide variety of secondary metabolites which serve them as defense compounds against herbivores and microbes. Secondary metabolites produced by plants do not aid in the growth and development of plants but are required for the plants to survive in its environment. They have been described as antibiotic, antifungal, antiviral and they are able to protect plants from pathogens. Products isolated from them have been used to treat infections, health disorders or diseases. In modern medicine, they provided lead compounds for the production of medications for treating various diseases from migraine up to cancer. This review deals with the Pharmacological activity and important functions of secondary metabolites in valuable medicinal herbs as Antimalarial, Antidiabetic, Hepatoprotective, Antitumor, Antiinflammatory, Antimicrobial.

**Keywords:** Secondary metabolites, Antibiotic, Antifungal, Antiviral, Antidiabetic, medicinal plants

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### Introduction

Secondary metabolites are numerous chemical compounds produced by plants. The toxic and repellent activity of secondary metabolites help in defending against pathogens. When a plant is attacked by herbivores or pathogens, the production of secondary metabolites increased (Devika and Koilpillai, 2012). Many plants synthesize a number of organic compounds which are not involved in primary metabolism and have no function in growth and development of plants. Such compounds are called secondary metabolites

or secondary plant products. According to their chemical structure, the secondary metabolites are classified into several classes (Rehab and Amira, 2018). It includes—Phenolics, Alkaloids, Saponins, Terpenes, Lipids and Carbohydrates (Rehab and Amira, 2018).

#### Phenolics:

The Phenolic molecules are effective antioxidants and free radical scavengers e.g. Flanonoids. The largest group of Plant Secondary

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*Dr. Jaya Sankar*  
PRINCIPAL  
AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006.  
Vellore District, Tamil Nadu.

*Munasira*  
V.S. MUNASIRA BEGUM



## Biological Evaluation of *Cissus vitifolia* Leaves Ethanol Extract with Anticancer Activities against MCF-7 and Vero Cell Lines

Munasira Begum V.S.<sup>1\*</sup>, Mohamed Tariq N.P.M.<sup>2</sup>, Hemapriya J.<sup>3</sup>, Muhammed Shariq K.<sup>4</sup> and Farook M.A.<sup>2</sup>

<sup>1</sup>Department of Microbiology, Auxilium College (Autonomous), Vellore, India

<sup>2</sup>Department of Biotechnology, Islamiah College (Autonomous), Vaniyambadi, India

<sup>3</sup>Department of Microbiology, DKM College for Women, Vellore, India

<sup>4</sup>Department of Biochemistry, Islamiah College (Autonomous), Vaniyambadi, India

\*Corresponding Author

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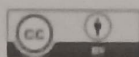
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**Abstract:** The present study investigated the phytoconstituents and anticancer potential followed by apoptotic studies of *Cissus vitifolia* leaves ethanol extracts on MCF-7 and Vero cells. Qualitative phytochemical analysis revealed the presence of carbohydrate, saponins, flavonoids, alkaloids, anthocyanin and betacyanin, quinones, glycosides, cardiac glycosides, terpenoids, triterpenoids, phenols, coumarins, acids, protein and steroids. On the other hand, tannins were absent in the ethanol extract. A dose-dependent anti-proliferative assay revealed that the 50% cell viability was observed at the concentration of 125 µg/ml with the ethanol extract. The maximum cell growth inhibition was observed at the concentration 1000 µg/ml (24.64 %). From the obtained data the ethanol extract were able to reduce the viability of MCF-7 cell line in direct dose dependent manner and thereafter, ethanol leaf extract was taken for further studies to assess its biocompatibility with Vero cells. Treatment of Vero cells with 24 h at different concentration of ethanol extract did not cause any changes in the Vero cells. From the results, it is clear that ethanol extract is biocompatible and can be used as a drug for treating various diseases including cancer.

**Keywords:** *Cissus vitifolia*, Ethanol extract, Flavonoids, MCF-7, GC-MS, Cytomorphological, Phytochemicals, Vero cells

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### Introduction

Cancer is a broad group of diseases involving unregulated cell growth. In cancer, cells divide and grow uncontrollably, forming malignant tumours and invade nearby parts of the body. The cancer

may also spread to more distant parts of the body through the lymphatic system or the blood stream (Anand *et al.*, 2008). Chemotherapy is the treatment of cancer with one or more cytotoxic

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*Dr. Jaya Sankar*

PRINCIPAL  
AUXILIUM COLLEGE (Autonomous)  
Gandhi Nagar, Vellore - 632 006.  
Vellore District, Tamil Nadu.

*Munasira*  
Y.S. MUNASIRA BEGUM