

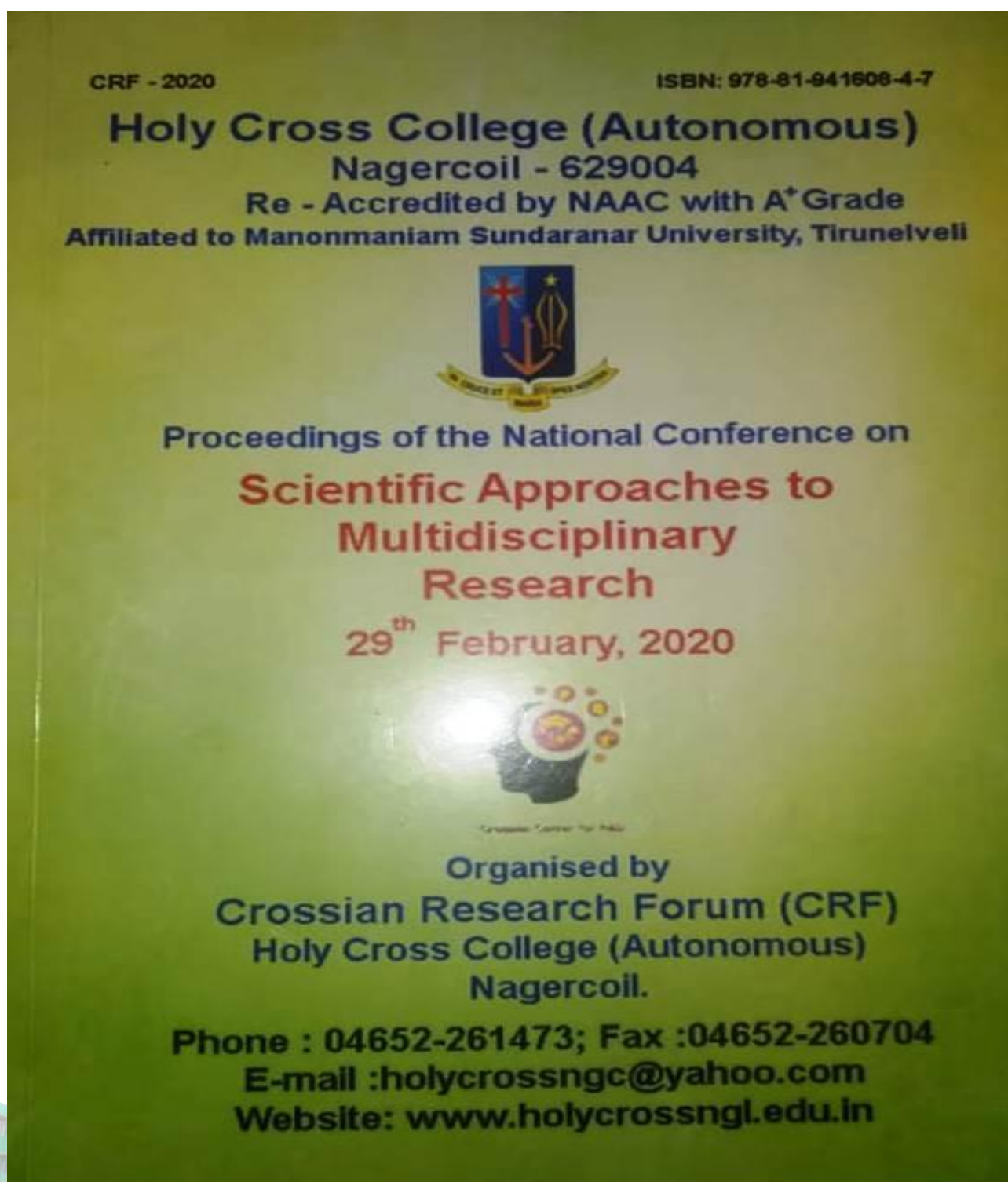


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Perfect Mean Cordial Labeling of Fan Related Graphs

A. Annie Lydia,
Reg.No.18223112092007,
Department of Mathematics,
MS University, Tirunelveli 627 012,
Tamil Nadu, India,
e-mail: anniel Lydia25@gmail.com

M.K. Angel Jebitha,
Department of Mathematics,
Holy cross college(Autonomous),
Nagercoil 629 004,
Tamil Nadu, India,
e-mail: angeljebitha@holycrossngl.edu.in

Abstract

A vertex labeling $f : V(G) \rightarrow \{0,1,2,3\}$ is said to be perfect mean cordial labeling of a graph G if it induces an edge labeling f^* defined as follows :

$$f^*(uv) = \begin{cases} 1 & \text{if } 2|(f(u) + f(v)) \\ 0 & \text{otherwise} \end{cases}$$

with the condition that $|e_f(0) - e_f(1)| \leq 1$ and $|v_f(i) - v_f(j)| \leq 1$ for all $i, j \in \{0,1,2,3\}$, where $e_f(m)$ is number of edges label with m ($m = 0, 1$) and $v_f(k)$ denote the number of vertices labeled with k ($k = 0, 1, 2, 3$). A graph G is said to be perfect mean cordial graph if it admits a perfect mean cordial labeling. In this paper, we prove that some fan graphs are perfect mean cordial.

Keywords - perfect mean cordial graph, perfect mean cordial labeling.
AMS Subject Classification 05C78.

1. Introduction

In 1987 Cahit introduced the concept of cordial labeling as a weaker version of graceful and harmonious labeling. In [1] perfect mean cordial graph was introduced and proved that some standard graphs are perfect mean cordial graphs.

Definition 1.1 [1] A vertex labeling $f : V(G) \rightarrow \{0,1,2,3\}$ is said to be a perfect mean cordial labeling of G if it induces an edge labeling f^* defined as follows :

$$f^*(uv) = \begin{cases} 1 & \text{if } 2|(f(u) + f(v)) \\ 0 & \text{otherwise} \end{cases}$$

with the condition that $|e_f(0) - e_f(1)| \leq 1$ and $|v_f(i) - v_f(j)| \leq 1$ for all $i, j \in \{0,1,2,3\}$, where $e_f(m)$ is number of edges label with m ($m = 0, 1$) and $v_f(k)$ denote the number of vertices labeled with k ($k = 0, 1, 2, 3$). A graph G is said to be perfect mean cordial graph if it admits a perfect mean cordial labeling.

Definition 1.3[3](Fan Graph). A fan graph $F_{m,n}$ is defined as the graph join $\overline{K_m} + P_n$, where $\overline{K_m}$ is the empty graph on m vertices and P_n is the path on vertices. The case $m = 1$ corresponds to the usual fan graphs, while $m = 2$ corresponds to the double fan, etc.,...

Definition 1.4 [5] Consider two copies of a graph G namely $G^{(1)}$ and $G^{(2)}$. Then the graph $G' = \langle G^{(1)} : G^{(2)} \rangle_x$ is the graph obtained by joining apex vertices of $G^{(1)}$ and $G^{(2)}$ to a new vertex x .

Definition 1.5 [4] Consider two copies of a graph G namely $G^{(1)}$ and $G^{(2)}$. Then the graph $G' = \langle G^{(1)} \blacktriangle G^{(2)} \rangle_x$ is the graph obtained by joining apex vertices of $G^{(1)}$ and $G^{(2)}$ to a new vertex x as well as joining apex vertices of $G^{(1)}$ and $G^{(2)}$ by an edge.

Terms not defined are used in the sense of [2]. In this paper, we prove that some fan graphs are perfect mean cordial graphs.

2. Main Results

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The connectivity number of complement of an Arithmetic Graph $G = V_n$ Mary Jenitha.L¹ and Sujitha.S²¹ Department of Mathematics

Manonmaniam Sundaranar University

Abishekapatti, Tirunelveli, Tamil nadu, India.

² Department of Mathematics

Holy Cross College (Autonomous), Nagercoil, India.

¹ jeni.mathematics@gmail.com, ² sujitha.s@holycrossngl.edu.in

Abstract

The complement of a graph G is a graph \bar{G} on the same vertices such that two distinct vertices of \bar{G} are adjacent if and only if they are non adjacent in G . In this article, the connectivity number of complement of an arithmetic graph is studied. Also, it is shown that $\kappa(\bar{G}) = \frac{(r-4)}{2}$ for an arithmetic graph $G = V_n$, where $n = P_1 \times P_2 \times P_3 \times \dots \times P_r, r > 2$.

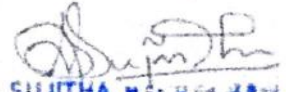
Keywords : arithmetic graph, connectivity, complement.

AMS Subject Classification : 5C40.

1 Introduction

For notation and graph theory terminology not given here, we follow [2]. The connectivity is one of the major concepts in graph theory. The connectivity number is defined to be the minimum number of vertices in a set whose deletion results in a disconnected or a trivial graph. The arithmetic graph V_n is defined as a graph with its vertex set is the set consists of the divisors of n (excluding 1) where n is a positive integer and $G = V_n, n = p_1^{a_1} \times p_2^{a_2} \times \dots \times p_r^{a_r}$ where p_i 's are distinct primes and $a_i \geq 1$ and two distinct vertices a, b which are not of the same parity are adjacent in this graph if $(a, b) = p_i$ for some $i, 1 \leq i \leq r$. The vertices a and b are said to be of the same parity if both a and b are the powers of the same prime, for instance $a = p^2, b = p^5$. This concepts was studied from [7]. Also various authors studied different parameters of an arithmetic graph. In [4] the connectivity number of an arithmetic graph is studied by L.Mary Jenitha and S.Sujitha. Later the average connectivity of the same graph is discussed by the same authors in [5]. In this paper the concepts of Connectivity of complement of an Arithmetic Graph $G = V_n$ is studied. The following theorems are used in sequel.

Theorem 1.1. [2] For a connected graph $G, \kappa \leq \kappa' \leq \delta$.


Dr. S. SUJITHA, M.Sc., M.Ed., M.Phil., Ph.D.
Assistant Professor
Department of Mathematics
Holy Cross College (Autonomous)
Nagercoil - 625 894.

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The Complement of a Ferrers Tree

R. ChenthilThangaBama

Department of Mathematics

ManonmaniamSundaranar University

Tirunelveli, India.

chenthilthangabama@email.com

S.Sujitha

Department of Mathematics

Holy Cross College(Autonomous)

Nagercoil, India.

sujitha.s@holycrossngl.edu.in

Abstract

A simple graph $G = (V, E)$ is a Ferrers graph if for all distinct $x, y, z, w \in V$ if $xy \in E$ and $zw \in E$ then either $xw \in E$ or $yz \in E$. Since $xy \in E \Leftrightarrow yx \in E$ holds for all simple graphs, the definition of Ferrers graph must be extended to if $xy \in E$ and $zw \in E$ then either $xw \in E$ or $yz \in E$ or $yw \in E$ or $xz \in E$. It is shown that, the complement of a Ferrers tree $d(u, v) \leq 3$ for all vertices $u, v \in V(\bar{G})$.

Keywords: Ferrers tree, distance, complement, diameter, radius.

AMS Subject Classification: 05C12

1. Introduction

By a graph $G = (V, E)$, we mean a finite undirected connected graph without loops or multiple edges. The order and size of G are denoted by p and q respectively. For basic definitions and terminologies we refer to [1], [2]. The degree of a vertex v in a graph G is the number of edges of G incident with v and is denoted by $deg_G v$ or $degv$. A vertex of degree 0 in G is called an isolated vertex and a vertex of degree 1 is called a pendent vertex or an end-vertex of G . For vertices u and v in a connected graph G , the distance $d(u, v)$ is the length of a shortest $u-v$ path in G . If no such path exists (if the vertices lie in different connected components), then the distance is set equal to ∞ . The eccentricity $e(v)$ of a vertex v in G is the maximum distance from v and a vertex of G . The minimum eccentricity among the vertices of G is the radius, $rad G$ or $r(G)$ and the maximum eccentricity is its diameter, $diam G$ of G . Two vertices u and v of G are antipodal if $d(u, v) = diam G$ or $d(G)$. A bipartite graph G is a graph whose vertex set $V(G)$ can be partitioned into two subsets V_1 and V_2 such that every edge of G joins V_1 with V_2 ; (V_1, V_2) is called a bipartition of G . If G contains every edge joining V_1 and V_2 , then G is called a complete bipartite graph. The complete bipartite graph with bipartition (V_1, V_2) such that $|V_1| = m$ and $|V_2| = n$ is denoted by $K_{m,n}$. A star is the complete bipartite graph $K_{1,n}$. A graph G is called acyclic if it has no cycles. A connected acyclic graph is called a tree. A non-trivial path is a tree with exactly two end-vertices. A caterpillar is a tree of order 3 or more, for which the removal of all end-vertices leaves a path. The compliment of a graph G is a graph \bar{G} on the same vertices such that two distinct vertices in \bar{G} are adjacent if and only if they are not adjacent in G . If a relation R over a set A is a Ferrers relation, it holds if aRb and cRd then either aRd or bRc for all distinct

elements $a, b, c, d \in A$. Ferrers relation was introduced in [3] for the first time has been utilized for different purposes in extensive and various science fields. The relation was used with concept lattices in formal concept analysis. Some graphs associated by the relation were linked together concept lattices again. This concept was studied by R. ChenthilThangaBama and S.Sujitha in [4]. Throughout the paper we consider G is a simple connected graph with atleast four vertices. Our other notations are standard and taken mainly from [1].

Definition 1.1.[3] A simple graph G is a Ferrers graph if for all distinct $x, y, z, w \in V$ if $xy \in E$ and $zw \in E$ then either $xw \in E$ or $yz \in E$. Since $xy \in E \Leftrightarrow yx \in E$ holds for all simple graphs, the definition of ferrers graph must be extended to if $xy \in E$ and $zw \in E$ then either $xw \in E$ or $yz \in E$ or $yw \in E$ or $xz \in E$.

Theorem 1.2.[4] Let $G = (V, E)$ be a simple graph where $|V| \geq 4$. If G is ferrers then $d(u, v) \leq 3$ for all $u, v \in V(G)$

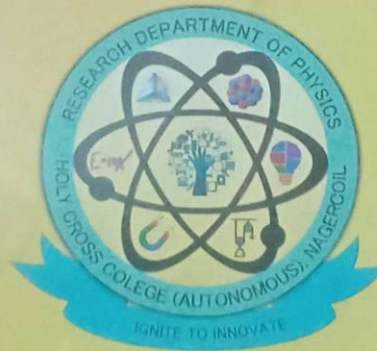
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PEG ASSISTED SYNTHESIS, CHARACTERIZATION, IN VITRO
BIOACTIVITY OF DIVALENT (Ni^{2+}) METAL ION DOPED
HYDROXYAPATITE

S. Sebastiammal^a, S. Virgin Jeba^b, T. Satheesh Kumar^c and A. Lesly^b

^aResearch Scholar (Reg.No:17213042132003), Department of Physics, Holy Cross College (Autonomous), Nagercoil-629004, Tamil Nadu, India. (Affiliated to Manonmaniam Sundaranar University, Abishekapatti, Tirunelveli 627012, Tamil Nadu, India)

^bDepartment of Physics, Holy Cross College (Autonomous), Nagercoil-629004, Tamil Nadu, India.

(Affiliated to Manonmaniam Sundaranar University, Abishekapatti, Tirunelveli 627012, Tamil Nadu, India)

^cDepartment of Physical Education, Pioneer Kumaraswamy College, Nagercoil-629004, Tamil Nadu, India.

(Affiliated to Manonmaniam Sundaranar University, Abishekapatti, Tirunelveli 627012, Tamil Nadu, India)

Abstract

In this study, nickel (Ni^{2+}) doped hydroxyapatite (HAp) nanoparticles prepared by sol-gel method and its antibacterial, antifungal effect investigated. Calcium deficient apatites with di-valent ion substitutions are a focused area of research on biological apatites. Hydroxyapatite (HAp) nanopowders were prepared and the effect of Ni^{2+} incorporation on the resulting solid solution was investigated. Incorporating metal ions into a calcium hydroxyapatite structure is a successful pathway to increase their physicochemical and biological properties. The calcium hydroxyapatite was obtained by sol-gel method using $\text{Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$ and $(\text{NH}_4)_2\text{HPO}_4$ as sources of calcium and phosphorus respectively. Metal ion (Ni^{2+}) incorporation was carried out in solutions of calcium hydroxyapatite and the corresponding nitrate salt. On the other hand, the Ni^{2+} doped HAp nanoparticles were also characterized by several techniques including powder X-ray diffraction (XRD), Fourier transform infrared (FTIR) spectroscopy, Raman Spectroscopy, Field emission scanning electron microscopy (FESEM) and energy dispersive X-ray (EDX) spectroscopy. From XRD analysis, it is found that the synthesized HAp nanoparticles have hexagonal structure with nanosize distribution. The observed structural and morphological properties can lead the HAp nanoparticles as a functional material. Field emission scanning electron microscopy and energy dispersive X-ray spectroscopy (FESEM-EDX) analysis showed that Ni, Ca, P and O elements were confirmed.

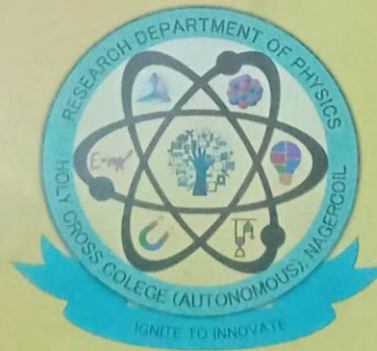
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NOVEL MATERIALS FOR EVOLVING TECHNOLOGICAL APPLICATIONS**

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Dr. A. Lesly Fathima
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and particles were evenly distributed. The analysis of in vitro antibacterial activity against *Shigella flexneri*, *Escherichia coli*, *Pseudomonas aeruginosa*, *Klebsiella pneumonia* and *Staphylococcus aureus* revealed that Ni²⁺ doped HAp samples possessed good antibacterial properties. The antifungal activity against fungal pathogens such as *Odium caricae*, *Aspergillus niger* and *Aspergillus flavus* of synthesized Ni²⁺ doped HAp nanoparticles were analyzed and exhibited high zone of inhibition. The multifunctional properties of the samples enable them to be a promising candidate for biomedical applications.

Keywords: Hydroxyapatite, Structural

*Corresponding author mail id:leslysat@gmail.com

SYNTHESIS AND CHARACTERIZATION OF CERIUM OXIDE NANOPARTICLES

T. Beley, V. Shally, M. Priya Dharshini and Sr. Gerardin Jayam

Research Department of Physics, Holy Cross College, Nagercoil – 629 004,
Tamil Nadu, India

Abstract

Ceria (CeO₂) is a technologically important rare earth material because of its unique properties and various engineering and biological applications. The structural features of the nanoparticles were determined by X-ray powder diffraction (XRD), Field Emission Scanning Electron Microscope (FESEM), and EDAX. The average crystallite size was estimated from the XRD pattern using Scherrer equation. The Cell volume, dislocation density of the CeO₂ nanoparticles is calculated. Lattice parameters were also determined and it is verified by Bradley Jay plot and Nelson Riley plot. The EDAX analysis shows the chemical compositions of nanoparticles.

Keywords: Rare earth, XRD, cell volume, dislocation density



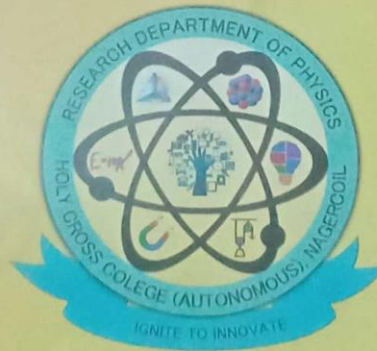
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INVESTIGATIONS OF STRUCTURAL, OPTICAL AND MAGNETIC PROPERTIES OF NICKEL FERRITE NANOPARTICLES BY EGG WHITE MEDIATED COMBUSTION TECHNIQUE

P. Aji Udhaya^{1,2*}, M. Meena³, M. Abila Jeba Queen¹, T. Regin Das^{2,4}

¹Department of Physics, Holy Cross College, Nagercoil, Affiliated to Manonmaniam Sundaranar University, Abishekapatti, Tirunelveli-627012, India.

²Research Scholar, Department of Physics, S.T. Hindu College, Nagercoil.

³Department of Physics, S.T. Hindu College, Nagercoil, Affiliated to Manonmaniam Sundaranar University, Abishekapatti, Tirunelveli-627012, India.

⁴Department of Physics, Lekshmiipuram Arts and Science College, Neyyoor, Nagercoil

*Corresponding Author: ajiudhaya@gmail.com, (Reg. No. 18123152132038)

Nanosized inverse spinel ferrites are the most confined class of magnetic materials, which have greatly intensified the researchers' attention due to their critical properties. A easy and economically feasible combustion method using egg white as fuel via green synthesis route was used to synthesize Nickel Ferrite (NiFe₂O₄) nanoparticles. Synthesized samples attributed to their significant crystalline existence were characterized by X-ray diffraction of the powder and found that the sharp crystallographic profile contours the prominent peak following (311) plane with crystallite size 36 nm. Particle size was also assessed using High Resolution Transmission Electron Microscopy and found to be in the range 20-30 nm. Photoluminescence and UV-visible spectral analysis validate the optical properties of nickel ferrite nanoparticles. Bandgap is calculated to be 1.7016 eV from the Kubelka-Munk plot. Retentivity and coercivity were measured to be 0.07848 emu and 159.38 Oe at room temperature (303 K), using a vibrating sample magnetometer.

Keywords: ferrite, egg white, optical, structural, magnetic, XRD, HR-TEM, UV-DRS, PL, VSM

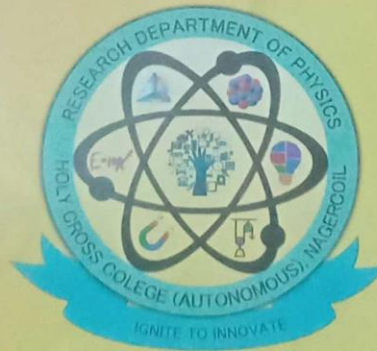
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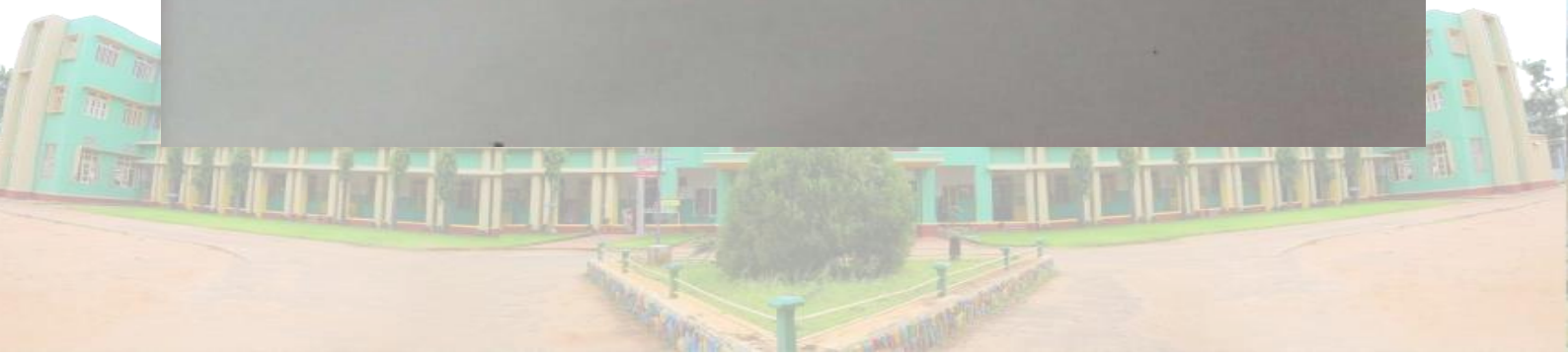
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GROWTH OF MULTIFORM MORPHOLOGIES OF NICKEL OXIDE NANOSTRUCTURES: STRUCTURAL AND OPTICAL PROPERTIES**S. Virgin Jeba^a, S. Sebastiammal^b, S. Sonia^b and A. Lesly Fathima^{b*}**

^aResearch Scholar, Register No. 18113042132018, Research Department of Physics, Holy Cross College (Autonomous), Nagercoil-629004, Tamil Nadu, India. (Affiliated to Manonmaniam Sundaranar University, Abishekapatti, Tirunelveli-627012, Tamil Nadu, India)

^bResearch Department of Physics, Holy Cross College (Autonomous), Nagercoil-629004, Tamil Nadu, India. (Affiliated to Manonmaniam Sundaranar University, Abishekapatti, Tirunelveli-627012, Tamil Nadu, India)

^{b*} Research supervisor, Research Department of Physics, Holy Cross College (Autonomous), Nagercoil-629004, Tamil Nadu, India. (Affiliated to Manonmaniam Sundaranar University, Abishekapatti, Tirunelveli-627012, Tamil Nadu, India)

Abstract

Evolution of morphologies for different materials becomes a phenomenal challenge as they act as the key role in defining their functional properties and desired applications. Here, we report the synthesis of Nickel Oxide nanostructures with multiform morphologies using surfactant, such as microsphere, sphere, mini rod bundles and capsules were constructed from their respective nanoscale building blocks through a simple and cost-effective hydrothermal technique. Structural analysis based on X-ray diffraction (XRD) confirms the purity of the NiO structures. Field Emission Scanning Electron Microscope (FESEM) corroborates the multiform morphologies of NiO.

Keywords: Nickel Oxide, hydrothermal technique, surfactant

Corresponding author mail id: leslysat@gmail.com



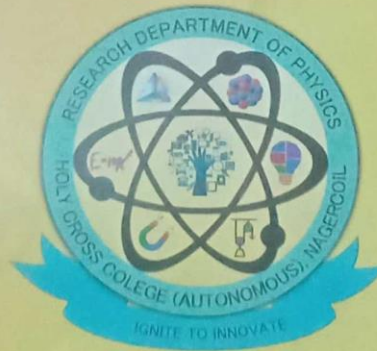
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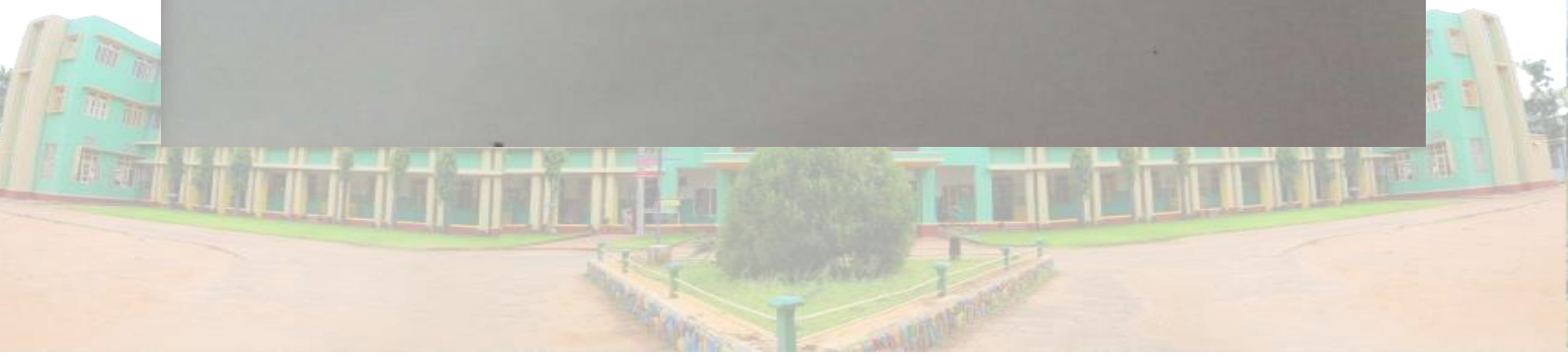
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**STRUCTURAL AND PHOTO LUMINESCENT PROPERTY OF NiO
NANOPARTICLE**

V.AjishThanga Monica, M. Priya Dharshini, V.Shally, Sr.GerardinJayam

Research Department of Physics, Holy Cross College, Nagercoil – 629004

Email id: ajishmonica9943@gmail.com

Abstract

The method used to synthesis NiO nanoparticle was co-precipitation method. Nickel oxide (NiO) nanoparticles with a uniform size and well dispersion are desirable for many applications in designing ceramic, magnetic, electrochromic and heterogeneous catalytic materials. The PXRD studies revealed that NiO nanoparticle possessed cubic structure and confirmed the presence of polycrystallinity nature of NiO in the nanoparticle. Raman peaks of NiO located at 165, 510, 1042 cm^{-1} confirms the characteristic feature of NiO. In the PL spectra, green emission was observed in the NiO nanoparticle. Thus the synthesized NiO nanoparticle are suitable for electrocatalysis application in future.

Keywords: Nickel oxide, nanoparticle, crystallinity, co-precipitation method



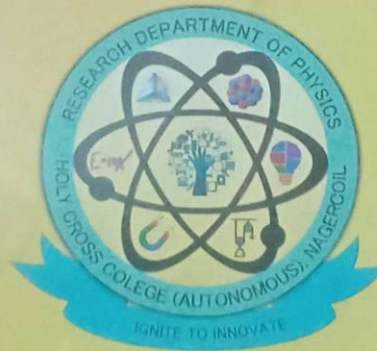
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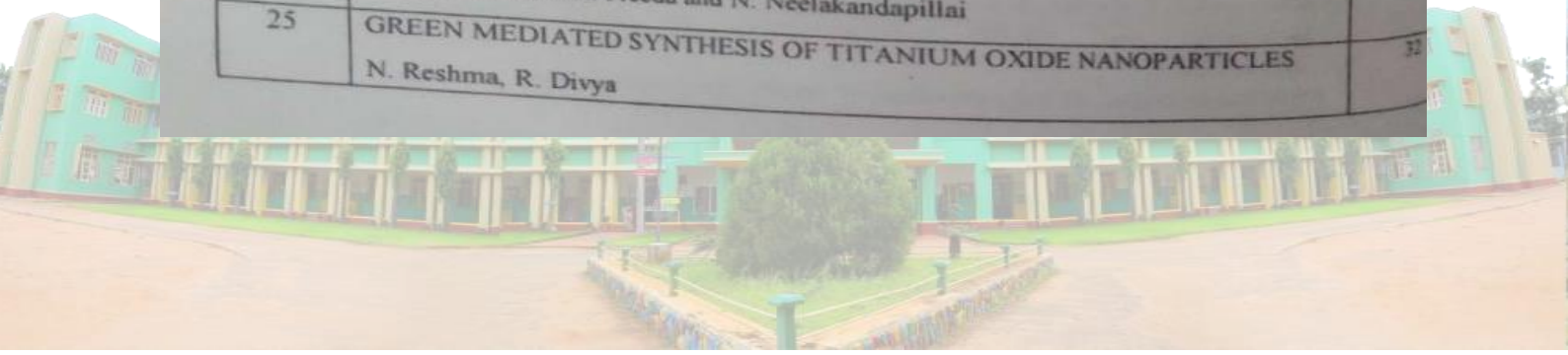
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ALBUMEN ASSISTED SYNTHESIS OF COPPER ZINC FERRITE NANOPARTICLES

R. Iswarya Rani¹, P. Aji Udhaya^{1,2*}, N. Siva Sankari¹, M. Meena³, M. Abila
Jeba Queen^{*},

¹Department of Physics, Holy Cross College, Nagercoil, Affiliated to Manonmaniam Sundaranar University, Abishekapatti, Tirunelveli-627012, India.

²Research Scholar, Department of Physics, S.T. Hindu College, Nagercoil.

³Department of Physics, S.T. Hindu College, Nagercoil, Affiliated to Manonmaniam Sundaranar University, Abishekapatti, Tirunelveli-627012, India.

*Corresponding Author: ajiudhaya@gmail.com, (Reg. No. 18123152132038)

Abstract

Spinel ferrites with general formula AB_2O_4 possess fascinating magnetic and electrical properties due to their thermal and chemical firmness. Zinc and Copper ferrites well known members of vital spinel ferrite having inverse spinel structure showing ferrimagnetism that originates from magnetic moment of anti-parallel spins linking the metal ions (Zn^{2+} , Cu^{2+} and Fe^{3+}). Here a simple technique of self-combustion with aid of albumen is made to synthesize nano crystalline Copper Zinc ferrite ($Cu_{0.25}Zn_{0.75}Fe_2O_4$) particles. The egg white (albumen) used in the synthesis process plays the role of fuel in the combustion process. The powder X - ray diffraction (PXRD) and Fourier Transform Infrared Spectroscopy (FTIR) results indicated that the synthesized nanoparticles are of single phase and show evidence of spinel structure. The Photoluminescence studies showed a doublet peak at 360-380nm. Also, the functional groups present in the synthesized nanoparticles was found using FTIR. From UV DRS analysis using the Kubelka-Munk relation the Tauc plot is made and energy band value is calculated from Tauc plot.

Keywords: ferrite; egg white; PXRD; FTIR; UV DRS.



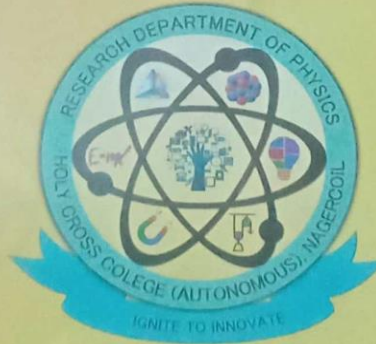
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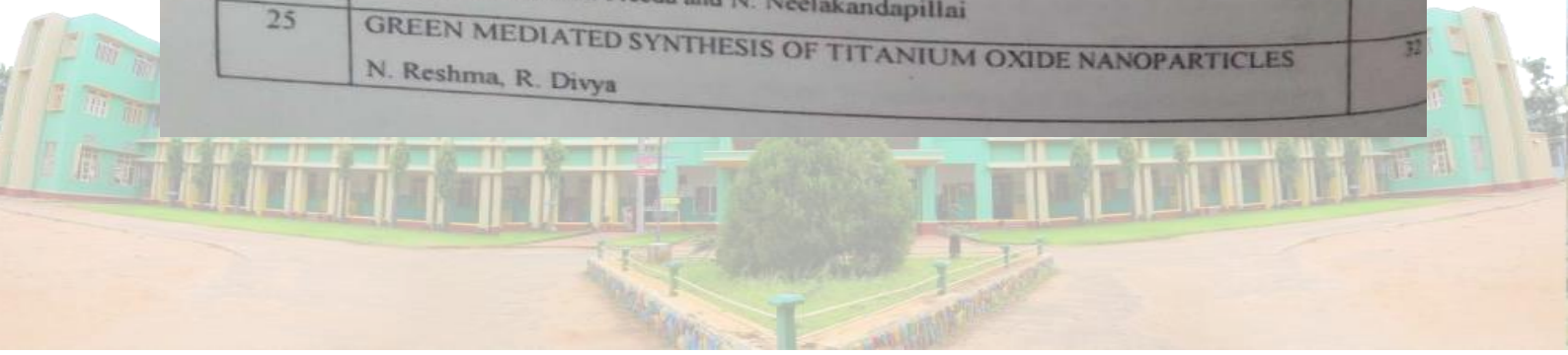
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BY CO-PRECIPIATION METHOD**

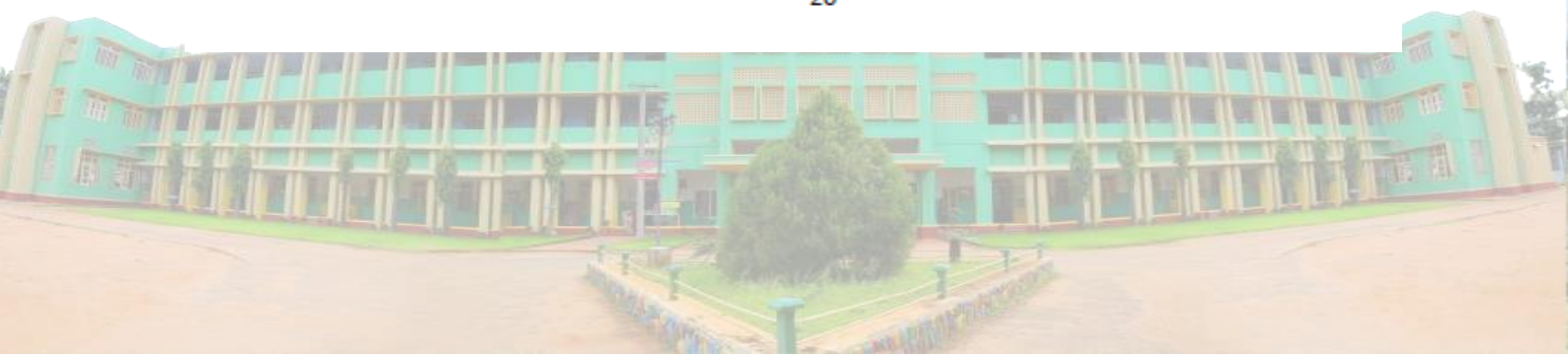
J. Prithisya, V. Shally, M. Priya Dharshini, Sr. GerardinJayam*

Research Department of Physics, Holy Cross College, Nagercoil – 629 004,
Tamil Nadu, India

Abstract

Due to their properties and applications in various fields nowadays nanomaterials gain a lot of importance. In the present paper we report the synthesis of NiS nanoparticle by co-precipitation method and characterization of NiS nanoparticle. Nickel acetate was used as a precursor to prepare pure NiS nanoparticle. Sodium sulphide and Sodium hydroxide is added to this solution. On calcinating the sample at 5000C and 10000C for 1 hour, β -NiS nanoparticle was obtained. The prepared sample has been characterized by powder XRD and UV-VIS Spectroscopy. The average grain size was obtained through powder XRD. UV-VIS spectroscopy was used to determine the band gap of these nanoparticles. The band gap of NiS nanoparticles of 5000C and 10000C was found to be 4.8eV and 2.8eV.

Keywords: Nanoparticles, nickel sulphide, XRD, UV-VIS spectroscopy



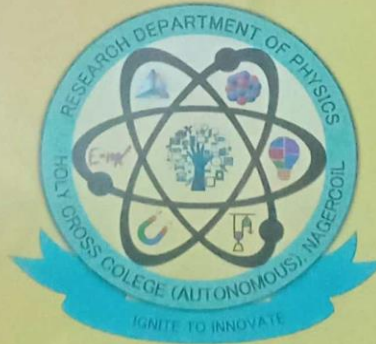
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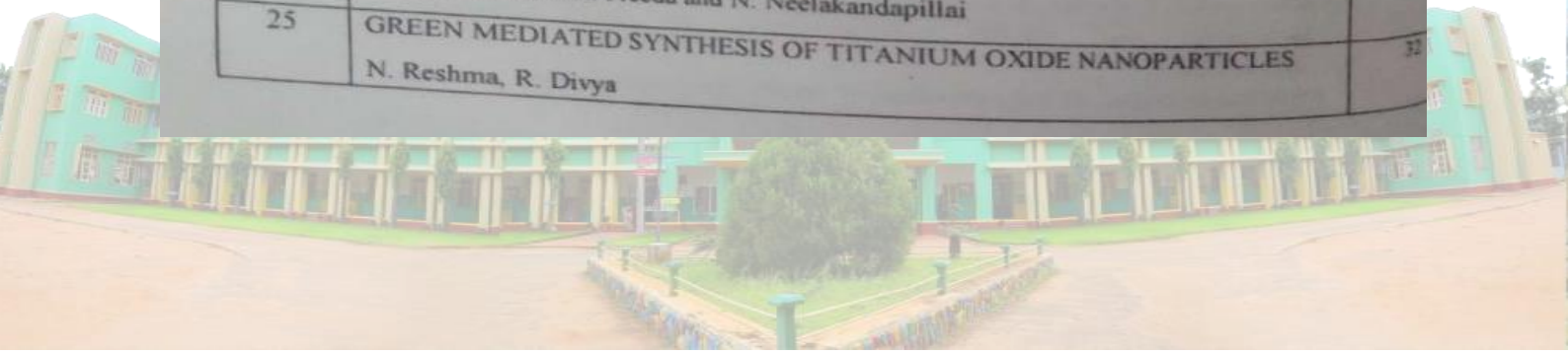
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NANOCOMPOSITES VIA AUTO COMBUSTION METHOD USING EGG
WHITE

N. Siva Sankari¹, R. Iswarya Rani¹, P. Aji Udhaya^{1,2*}, M. Meena³, M. Abila
Leha Queen¹

¹Department of Physics, Holy Cross College, Nagercoil, Affiliated to
Manonmaniam Sundaranar University, Abishekapatti, Tirunelvel-627012, India.

²Research Scholar, Department of Physics, S.T. Hindu College, Nagercoil.

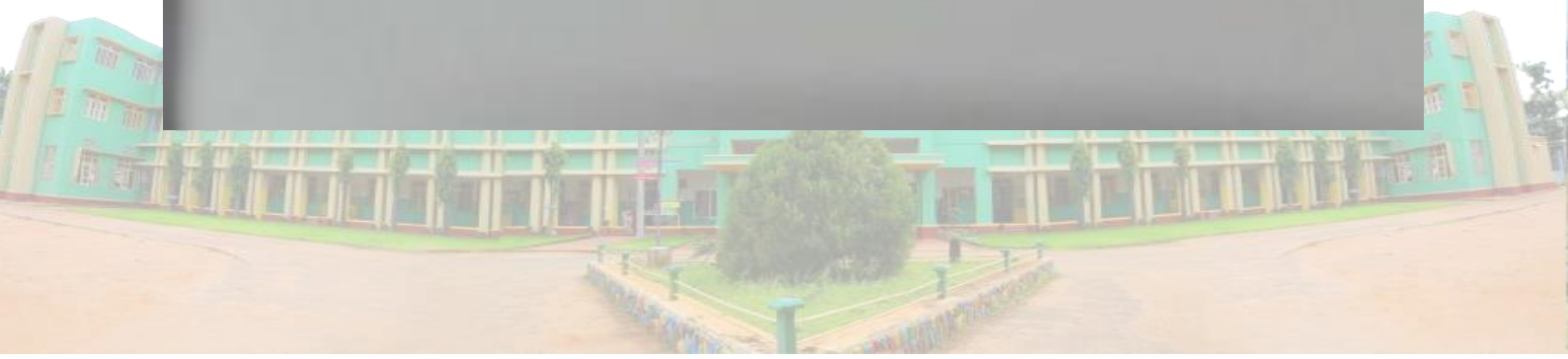
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*Corresponding Author: ajiudhaya@gmail.com, (Reg. No.
18123152132038)

Abstract

Nowadays it has become essential to find nontoxic, cheap and eco-friendly precursors for synthesizing nanoparticles. So, Plant extracts and animal by-products has become the choice of researchers as they serve as fuels, capping agents, reducing agents and stabilizing or chelating agents for capturing metal ions in nanoparticle synthesis. In this present work, $\text{Cu}_{0.75}\text{Zn}_{0.25}\text{Fe}_2\text{O}_4$ nanoparticles were synthesized via green synthesis route through self-combustion method using egg white. The structural and elemental properties of the synthesized nanoparticles were characterized by powder XRD, FT-IR and UV-DRS. PXRD pattern confirm the single-phase cubic spinel structure of the synthesized particles with size varying from 20 to 56 nm. The FTIR spectra confirm the spinel structure and the functional groups present. From UV- Diffuse Reflectance Spectrum (UV-DRS) of the $\text{Cu}_{0.75}\text{Zn}_{0.25}\text{Fe}_2\text{O}_4$ using the Kubelka-Munk relation the tauc plot is made and the band energy is calculated from tauc plot.

Keywords: ferrite; egg white; PXRD; FTIR; UV DRS.



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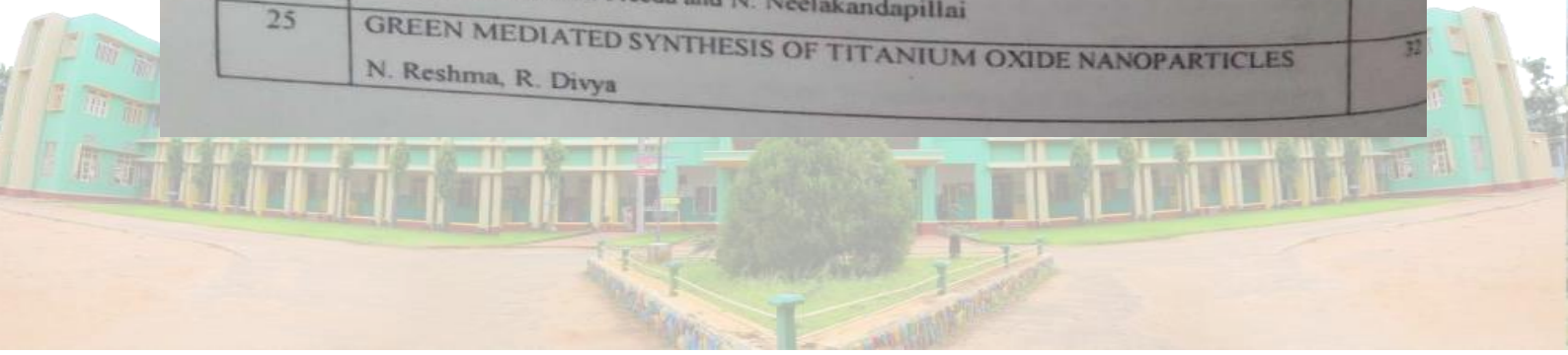
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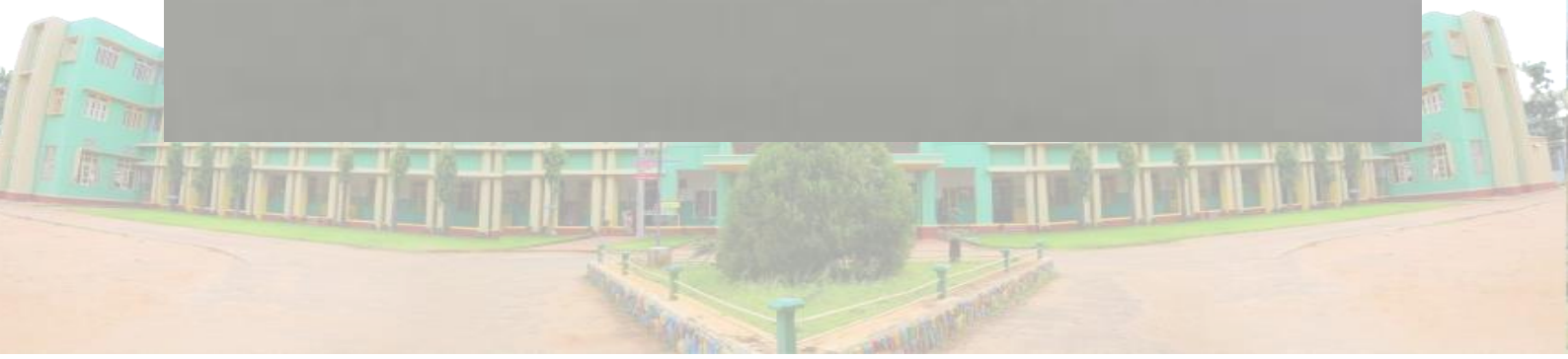
Research Department of Physics, Holy Cross College, Nagercoil - 62

Email id: taniamanoj141297@gmail.com

Abstract

Co-precipitation method was used to synthesize NiO - Mn_2O_3 nanocomposites. The procedure developed in the present study ensures homogenous particle distribution, good reactivity between components, small particles and allows lower processing temperature. The PXRD studies confirm that both NiO and Mn_2O_3 possessed cubic structure and confirmed the polycrystallinity nature of NiO and Mn_2O_3 in the nanocomposites. Raman spectra exhibited characteristic peaks of NiO - Mn_2O_3 in the synthesized nanocomposites. In the PL spectra, blue and green emission was observed in the sample. The blue and green luminescence demonstrated the good quality of the synthesized nanocomposites. Thus, the synthesized NiO- Mn_2O_3 nanocomposites are suitable for electrocatalysis application in future.

Keywords: Nickel oxide, manganese oxide, nanocomposites



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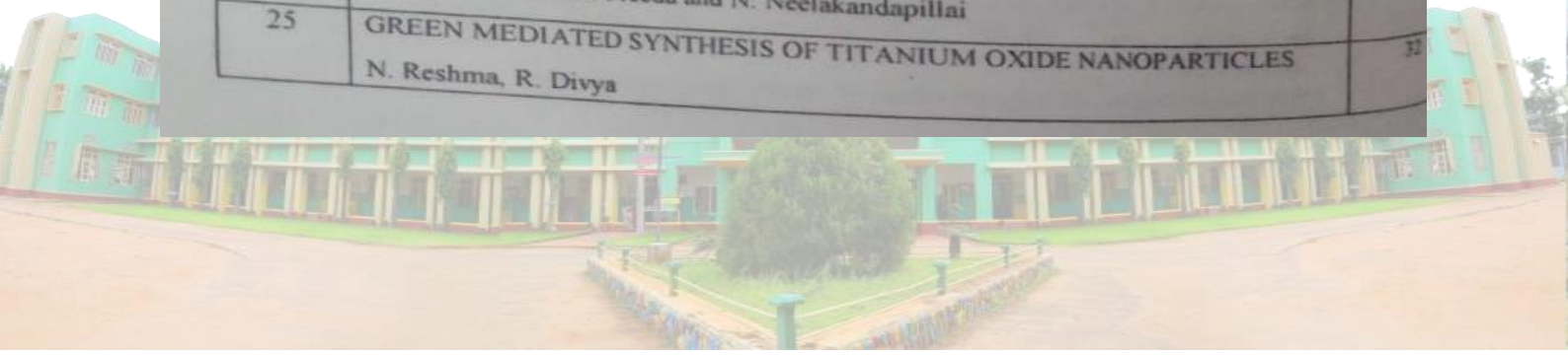


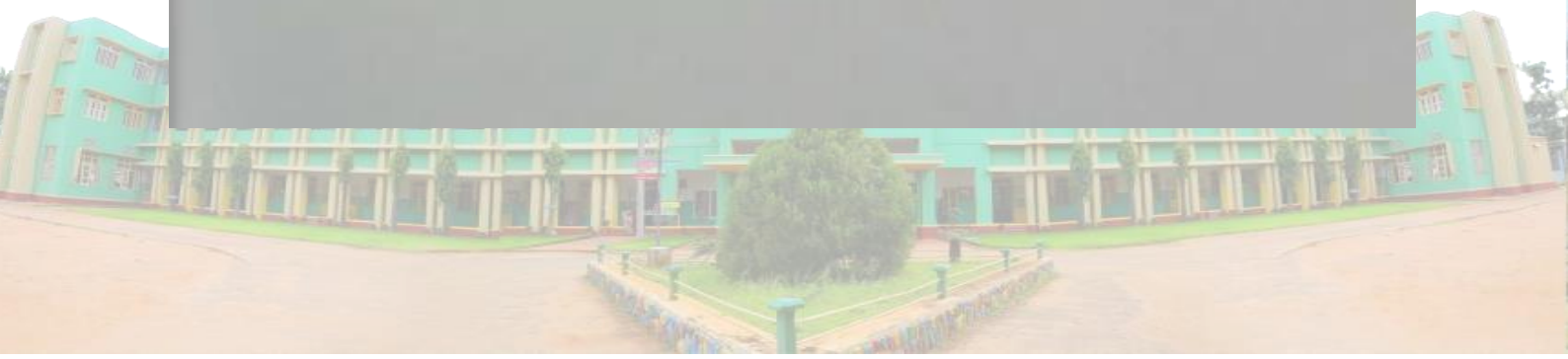
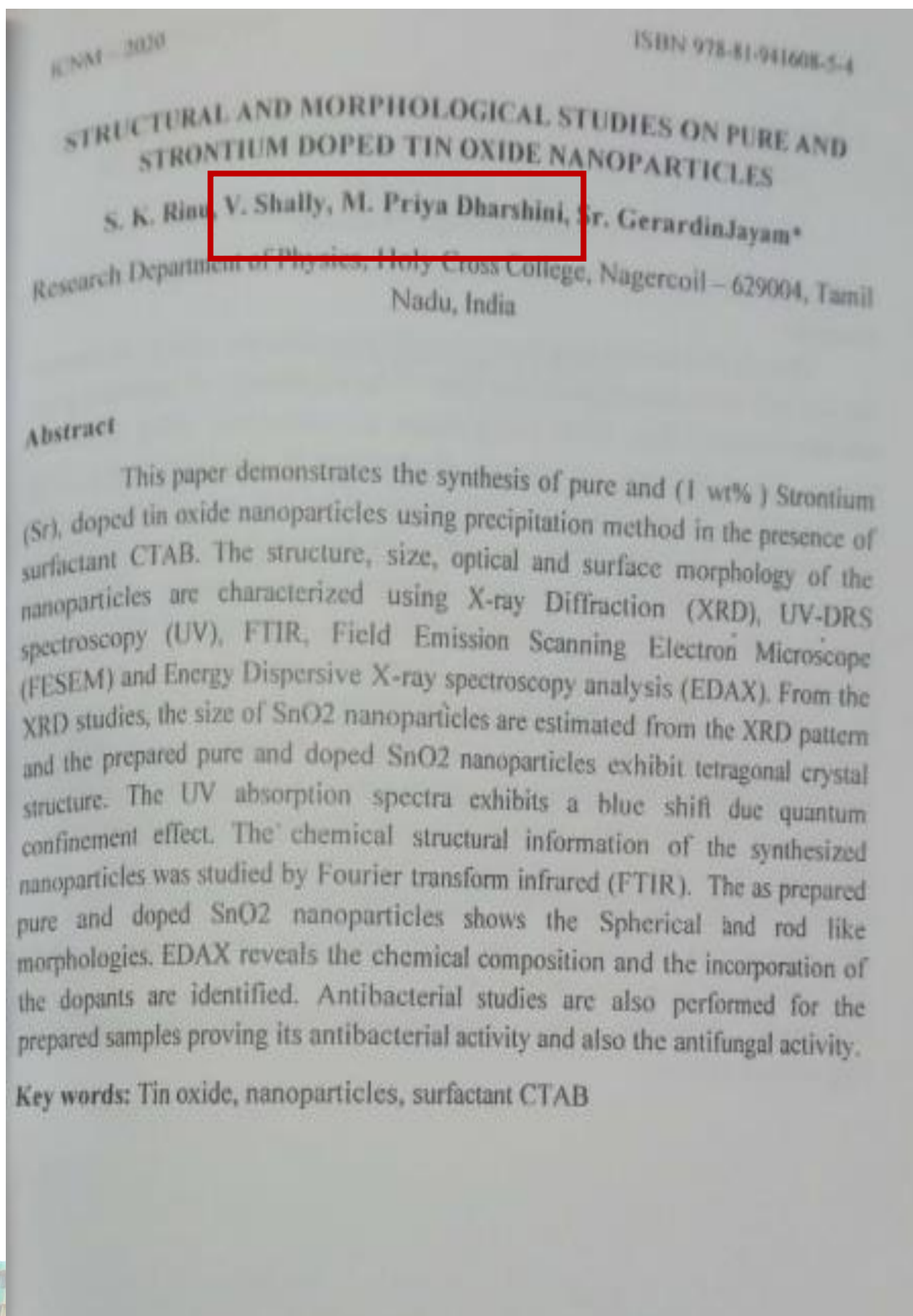
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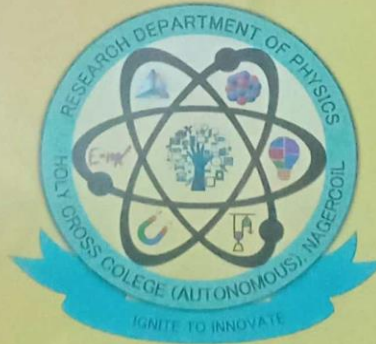
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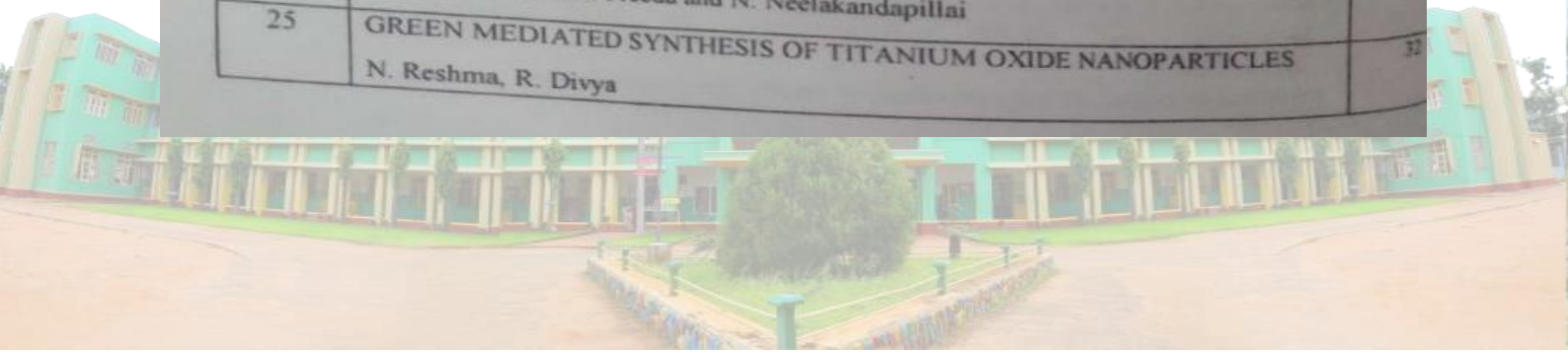
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STRUCTURAL AND OPTICAL STUDIES OF LA DOPED ZNO NANORODS

V. Shally, M. Priya Dharshini, Sr. Gerardin Jayam*

Research Department of Physics, Holy Cross College, Nagercoil - 629004, Tamil Nadu, India

shallyregin05@gmail.com

Abstract

La-doped (1 wt% and 5 wt %) ZnO nanorods are synthesized by using novel wet chemical method. This method is simple; calcination temperatures are not required. Nanorods are prepared by low temperature. The as-prepared samples are characterized by X-Ray Powder Diffraction, Field Emission Scanning Electron Microscopy, UV-Vis spectroscopy (UV), EDAX and PL. The XRD analysis showed hexagonal structure. The band gap of La doped ZnO nanorods are estimated. It was found that luminescence property is enhanced for the La doped ZnO nanoparticles. Field Emission Scanning Electron Microscopy (FESEM) result reveals that the doped ZnO nanoparticles are rod like shape. EDAX analysis shows the incorporation of dopants in the samples.

Keywords: Precipitation method, XRD, Hexagonal, Nanorods, Grain size.



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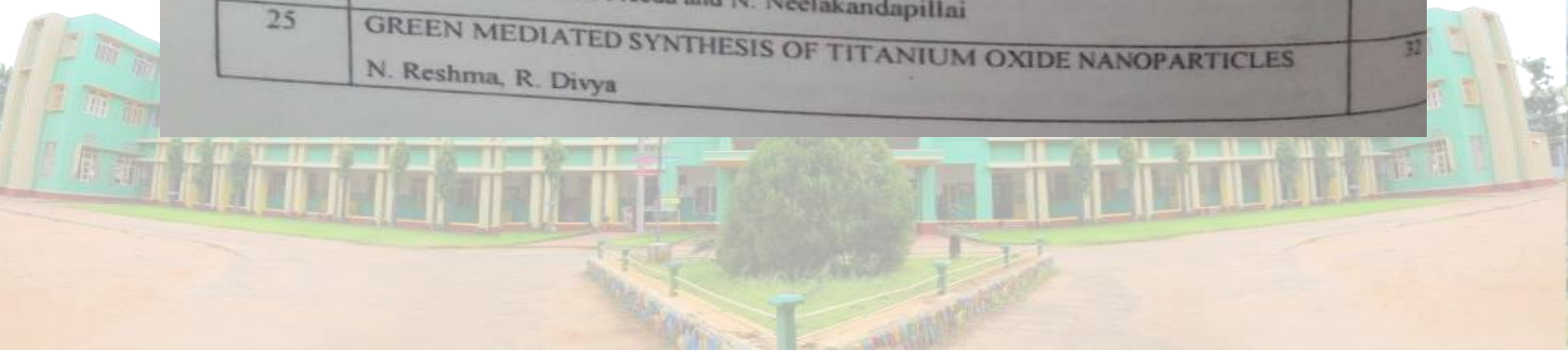
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STRUCTURAL AND OPTICAL PROPERTIES OF NiO-CdO, NiO-Pb₂O₃, NiO-ZnO NANOCOMPOSITES

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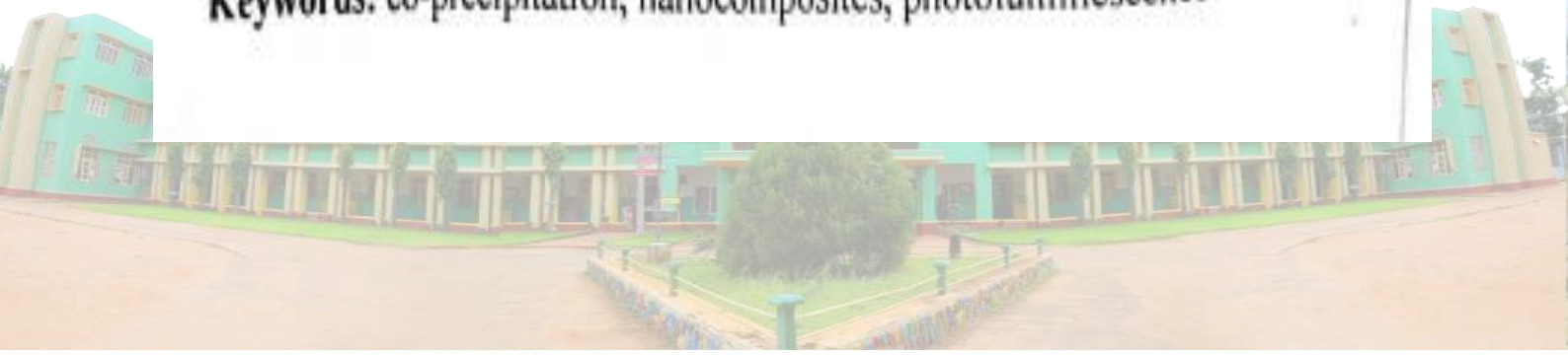
Research Department of Physics, Holy Cross College, Nagercoil – 629004

Email id: vishaka8397@gmail.com

Abstract

NiO-CdO, NiO-Pb₂O₃ and NiO-ZnO nanocomposites were synthesized by co-precipitation method. The PXRD studies revealed that both NiO and CdO possessed cubic structure, Pb₂O₃ possessed monoclinic structure, ZnO possessed hexagonal structure and confirmed the presence of NiO, CdO, Pb₂O₃ and ZnO in the nanocomposites. Raman spectra exhibited characteristic peaks of NiO-CdO, NiO- Pb₂O₃, NiO-ZnO in the synthesized nanocomposites. In the PL spectra, blue and green emission was observed in the samples. UV-VIS spectra revealed that the absorption edges corresponding to NiO-CdO at 443 nm, NiO-Pb₂O₃ at 372 nm and NiO-ZnO at 323 nm. Thus the synthesized NiO - CdO, NiO - Pb₂O₃ and NiO - ZnO nanocomposites can be suitable materials for electrocatalysis applications.

Keywords: co-precipitation, nanocomposites, photoluminescence



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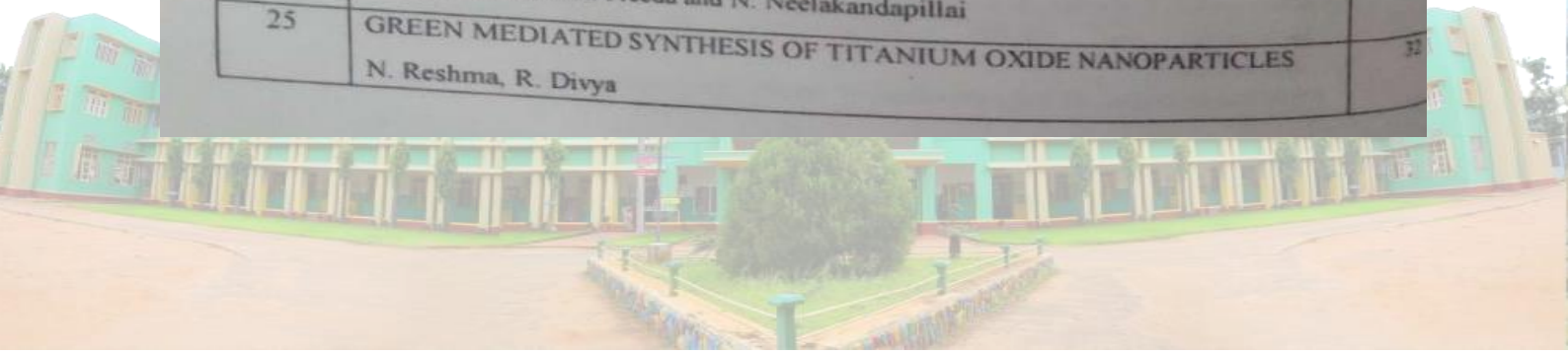
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PREPARATION OF CUO NANO FLOWERS THINFILMS FOR NH₃ GAS
DETECTION

P.Abisha^a, Jinitha .C.G^a, S.Sonia^{a*}, Naidu Dhanpal Jeyram^b

^aDepartment of Physics, Holy Cross College (Autonomous),
Nagercoil - 629 004

^bKalasalingam academy of research and education, Srivilliputhur,
Viruthunagar - 626 126

Corresponding author email id: sonianst10@gmail.com (S. Sonia)

Abstract

CuO nanoflowers were grown on glass substrates by Successive Ionic Layered adsorption reaction (SILAR) process and subjected to different physico-chemical characterization techniques such as X-Ray diffraction pattern (XRD), Field Emission Scanning electron microscope (FESEM) and UV-visible analysis. From the diffraction pattern of the prepared CuO nanostructured thinfilms it is obvious that they belong to the monoclinic system and are in average crystalline size of 13 - 16 nm. Surface analysis reveals that the prepared CuO films exhibit flower-like and bud like shape. EDX spectra proved the purity of the prepared nanostructured thinfilms. The absorbance spectra of CuO nanostructured thinfilms depicts that the prepared nanostructured thinfilms are in visible region. Since the nanoflowers offer a greater number of facets to observe the gases, the prepared CuO nanoflower thinfilms were used to detect the ammonia (NH₃) gas.

Keywords: CuO nanoflowers; SILAR process; Gas sensor

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EFFECT OF METAL OXIDE NANOFILLER ON THE PHYSICAL PROPERTIES OF EPOXY COMPOSITES

A. Lesly Fathima, S. Sebastianmammal and S. Virgin Jetha

Research Department of Physics, Holy Cross College (Autonomous), Nagercoil-629004, Tamil Nadu, India.

(Affiliated to Manonmaniam Sundaranar University, Abishekapatti, Tirunelveli-627012, Tamil Nadu, India)

Abstract

Polymers are used in many areas such as automotive, electronics and different construction equipments. Generally, they are used after being reinforced with various nanofillers to provide unique properties such as aspect ratio, low weight, and easy formability. Nanocomposites are new materials made with fillers having nanosize. The purpose of this study is to analyze the physical properties of epoxy resin with zirconia nanoparticles. In this present work, Zirconia nanoparticles were prepared by precipitation method, zirconium oxychloride ($ZrOCl_2 \cdot 8H_2O$) and ammonia (NH_3) as starting materials. The synthesized Zirconia nanoparticles were characterized by XRD and the grain size in nanoscale is confirmed. The sheets of neat epoxy resin and epoxy with addition of ZrO_2 nanoparticles are primed by solution casting method. The structure of epoxy polymer and hardener were confirmed using FTIR analysis. The thermal properties were analyzed using Thermo Gravimetric Analysis (TGA) and Differential Thermal Analysis (DTA). Thermo gravimetric analysis has been employed to investigate the thermal characteristics and their mode of thermal degradation. Differential thermal analysis has been used to determine the glass transition temperature of epoxy nanocomposites. The various mechanical properties were studied and the influences of nanofiller loading on these parameters were observed.

Keywords: Epoxy, Polymer nanocomposite, Glass transition temperature, Tensile strength

Corresponding author mail id: leslysat@gmail.com



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INFLUENCE OF NICKEL OXIDE NANOPARTICLES ON EPOXY MATRIX

M.Lourdu Akirthammal Shylaja^a, S. Sebastiammal^a, S. Virgin Jeba^a and Lesly Fathima^{a*}

^aResearch Department of Physics, Holy Cross College (Autonomous), Nagercoil, 629004, Tamil Nadu, India.

(Affiliated to Manonmaniam Sundaranar University, Abishekapatti, Tirunelveli-627012, Tamil Nadu, India)

Corresponding author: leslysat@gmail.com

Abstract

Polymer nanocomposites have attained great interests in recent years, they offer added advantages such as improved thermal, magnetic and mechanical properties along with their specific functional properties. The purpose of this study is to analyze the thermal and magnetic properties of Nickel Oxide nanoparticles combined with epoxy resin. Nickel Oxide nanoparticles were prepared using sol-gel method which involves Nickel Nitrate and Sodium Hydroxide as precursors. The sheets of neat epoxy resin and epoxy with addition of NiO are prepared using solution casting method, which undergoes two different processing techniques: mechanical mixing and ultrasonication. The NiO/epoxy nanocomposites were prepared for 1wt%, 3 wt%, 5 wt% and 7 wt% by mixing and pouring the nanoparticles with epoxy resin and required amount of hardener into the matrix. The prepared Nickel Oxide nanoparticles were analysed by XRD, thermal stability and VSM studies. The thermal stability was not enhanced in NiO/Epoxy polymer nanocomposite when compared with Neat epoxy. An improved Glass transition temperature of NiO/Epoxy nanocomposite was observed when compared to Neat Epoxy. It was also observed from VSM analysis that the addition of Nickel Oxide nanoparticles exhibit an increase in the magnetic behaviour of NiO/Epoxy nanocomposites.

Keywords: Epoxy resin, Nanocomposite, Nickel Oxide, Thermal stability



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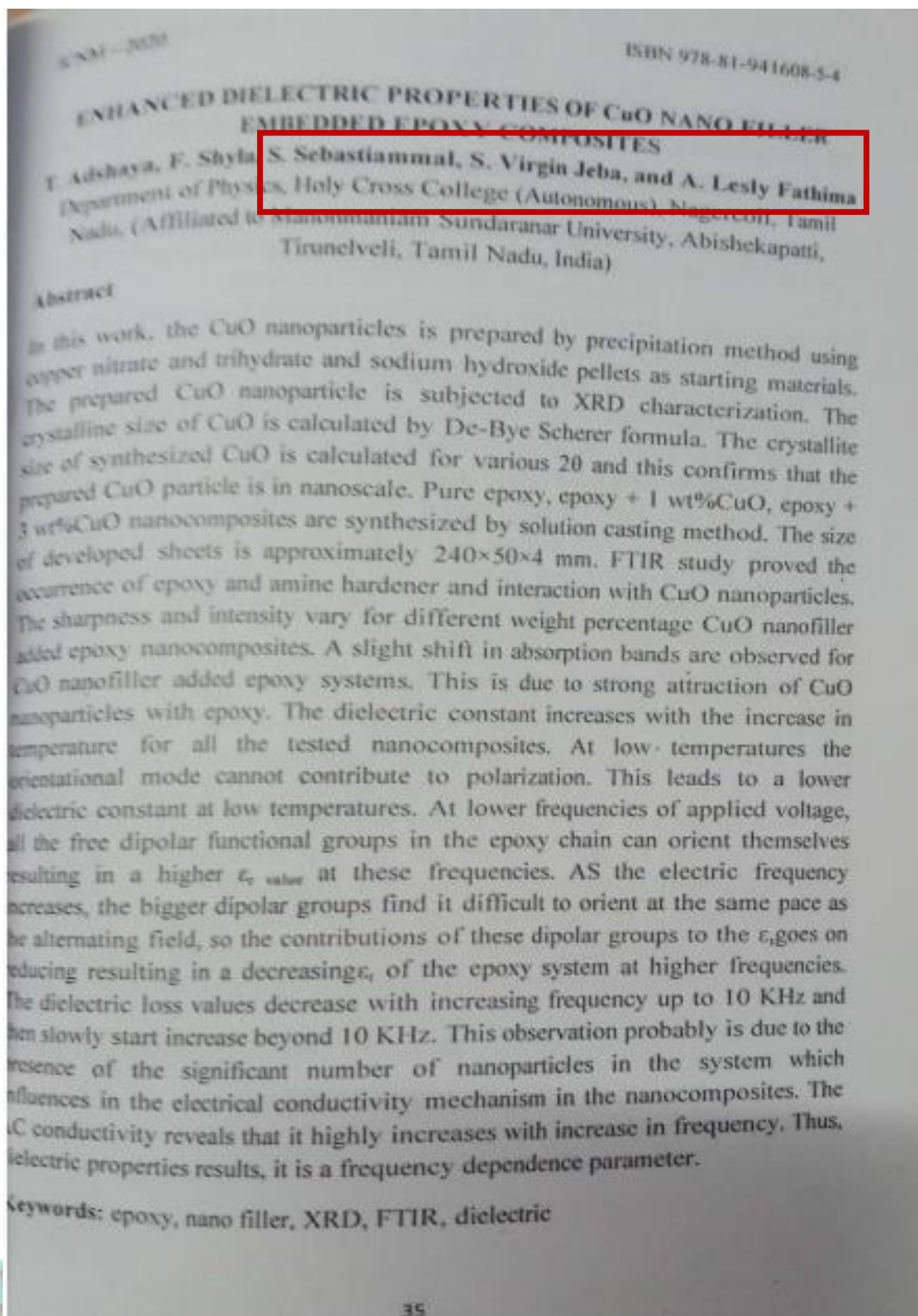


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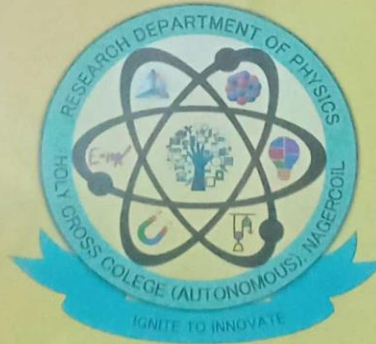
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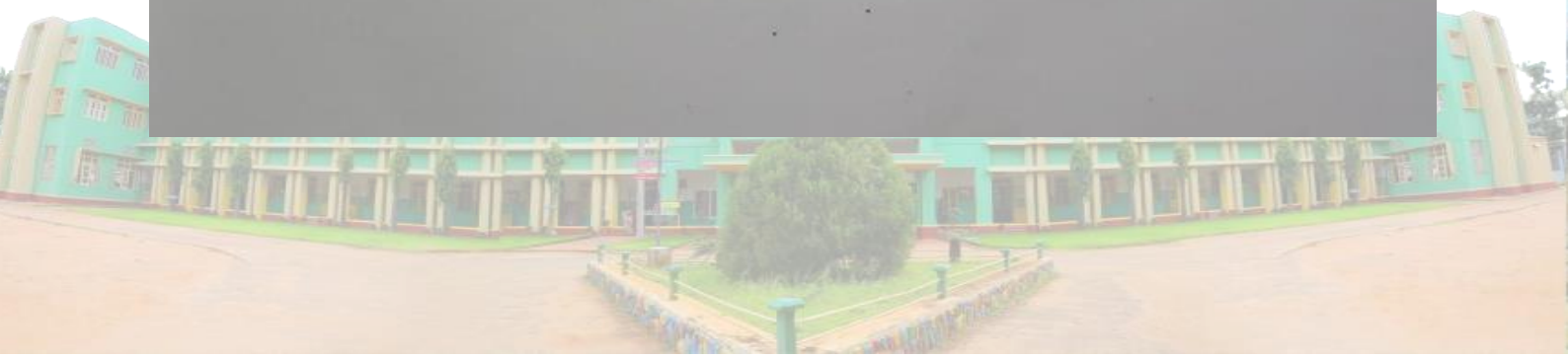


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MECHANICAL AND DIELECTRIC PROPERTIES ENHANCEMENT IN
DEVELOPED EPOXY TiO₂ NANOCOMPOSITES AT SPECIFIC RATIOS

N. AnnlinBezy, A. Lesly Fathima* S. Virgin Jeba, Sr Sebastiammal

Research Department of Physics

Holy Cross College (Autonomous), Nagercoil, TamilNadu

Email: annlinphysics@gmail.com

Abstract

Inorganic nanoparticles incorporated with Epoxy improves fracture resistance and exhibit conductivity. In this work Titanium dioxide nanoparticle is prepared by sol gel method and the grain size is found as 15.98nm from XRD. Using solution casting method, neat epoxy and epoxy with nanosize TiO₂ at different weight percentage sheets are developed. Developed five samples undergoes Mechanical and dielectrical analysis. Due to the dispersion of fillers with Epoxy mechanical studies results high variation. Dielectric measurements result it is a frequency dependence parameter and in external field new dipoles are observed due to the presence of fillers in nanocomposites

Keywords: Sol Gel method, Solution Casting method, Impact strength, Dielectric constant, AC conductivity



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**GROWTH AND CHARACTERIZATION OF ORGANIC
MATERIAL 3-HYDROXY-4-METHOXYBENZALDEHYDE
SINGLE CRYSTAL FOR OPTICAL APPLICATIONS**

C.Smitha Rose¹, T. Suthan², S. Mary Delphine³

¹Research scholar (Reg.No: 18113062132010), Holy Cross College(Autonomous), Nagercoil-629004, Tirunelveli -627012, Tamil Nadu, India.

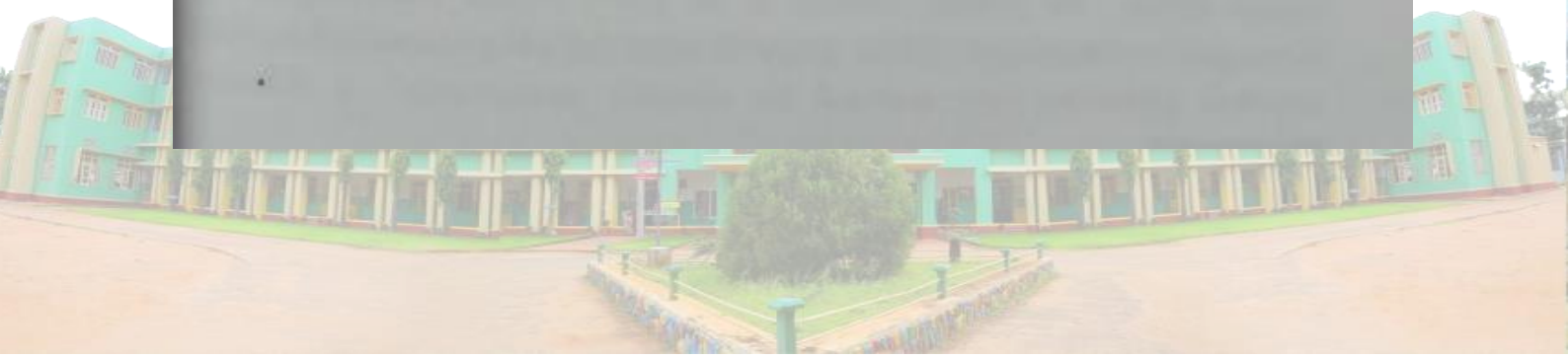
²Research Supervisor, Department of Physics, Lekshmipuram College of Arts and Science, Neyyoor -629802(Affiliated to M.S. University, Tirunelveli -627012, Tamil Nadu, India)

³Research Co-Supervisor, Department of Physics, Holy Cross College(Autonomous), Nagercoil - 629004(Affiliated to M.S. University, Tirunelveli -627012, Tamil Nadu, India)
Email id: mesmithajustus@gmail.com

Abstract

Single crystals of the organic NLO material, 3-hydroxy-4-methoxybenzaldehyde, were grown by slow evaporation method using methanol as a solvent. The grown crystals were pale yellow in colour. The obtained crystal was subjected to single crystal X-ray diffraction analysis. The Powder X-ray diffraction studies have been carried out to confirm the grown crystal. FTIR and FT-Raman spectra were recorded to identify the functional groups present in the crystal. The optical property of the grown crystal was analysed by UV-Vis-NIR measurement. From the absorption study it was found that the lower cut off wavelength value is about 366 nm and hence it suggests that the crystal is transparent in UV-Visible region. The band gap and refractive index of the crystal have also been studied. The dielectric studies were analyzed by using the parallel plate capacitor method. The dielectric constant, dielectric loss and AC conductivity are calculated for 3-hydroxy-4-methoxybenzaldehyde crystal.

Keywords: NLO, single crystal, XRD, FTIR



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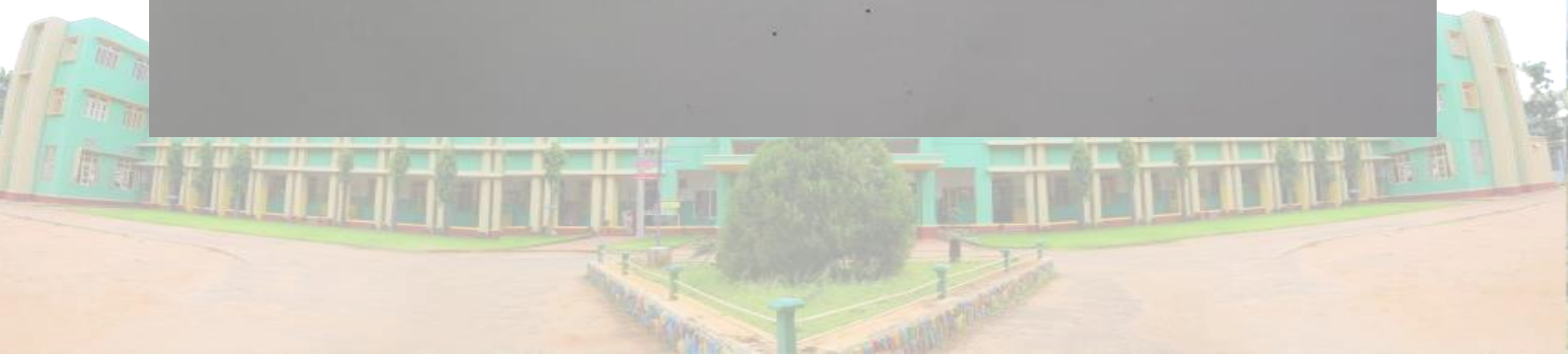
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GROWTH AND CHARACTERIZATION OF COPPER SULPHATE DOPED L- ALANINE CRYSTALS

S. Jasvy*, J. Babisha, S. Mary Delphine

Research department of Physics, Holy Cross College (Autonomous),
Nagercoil - 629004.

*Corresponding Author: Email: jascaine07@gmail.com

Abstract

The production of Nonlinear optical crystals has expanded recently because of their diversified applications like Harmonic generation, frequency doubling, high laser threshold etc. The addition of inorganic compounds to these organic materials provides better stability to the crystals, making these semi organic crystals highly sought after. L- Alanine an organic amino acid known to possess Nonlinear optical properties is doped with CuSO_4 , an inorganic compound to form a semi organic crystal. The single crystals of CuSO_4 doped L- Alanine were grown in three different concentrations 0.1 mol%, 0.2 mol%, 0.3 mol% respectively, by slow evaporation technique. The grown crystals were subjected to characterisation studies like X- Ray diffraction from which lattice parameters, unit cell volume and crystal system were analysed. The crystal system was found to be orthorhombic. The transmission range was determined by UV-Vis spectroscopy and the crystal was found to display high transmission and low absorbance. FT-IR spectroscopy was used to study the functional groups present in the crystal.

Keywords: alanine, crystal, PXRD, FTIR, UV-Vis



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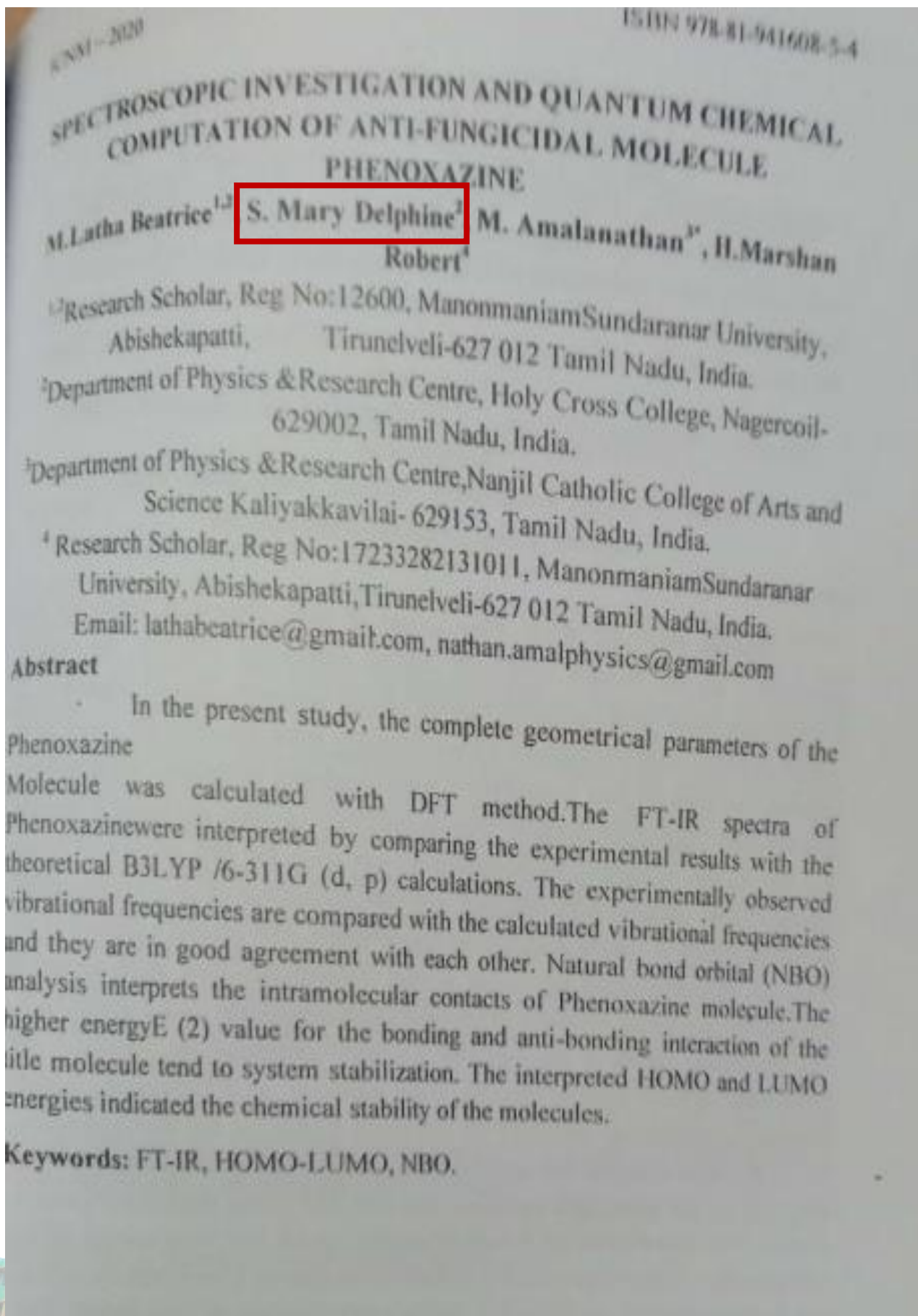


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SPECTROSCOPIC INVESTIGATION AND QUANTUM CHEMICAL COMPUTATION OF ANTI-FUNGICIDAL MOLECULE PHENOXAZINE

M.Latha Beatrice^{1,2} **S. Mary Delphine³** M. Amalanathan^{3*}, H. Marshan
Robert⁴

^{1,2}Research Scholar, Reg No:12600, Manonmaniam Sundaranar University,
Abishekapatti, Tirunelveli-627 012 Tamil Nadu, India.

³Department of Physics & Research Centre, Holy Cross College, Nagercoil-
629002, Tamil Nadu, India.

⁴Department of Physics & Research Centre, Nanjil Catholic College of Arts and
Science Kaliyakkavilai- 629153, Tamil Nadu, India.

* Research Scholar, Reg No:17233282131011, Manonmaniam Sundaranar
University, Abishekapatti, Tirunelveli-627 012 Tamil Nadu, India.
Email: lathabeatrice@gmail.com, nathan.amalphysics@gmail.com

Abstract

In the present study, the complete geometrical parameters of the Phenoxazine Molecule was calculated with DFT method. The FT-IR spectra of Phenoxazine were interpreted by comparing the experimental results with the theoretical B3LYP /6-311G (d, p) calculations. The experimentally observed vibrational frequencies are compared with the calculated vibrational frequencies and they are in good agreement with each other. Natural bond orbital (NBO) analysis interprets the intramolecular contacts of Phenoxazine molecule. The higher energy E (2) value for the bonding and anti-bonding interaction of the title molecule tend to system stabilization. The interpreted HOMO and LUMO energies indicated the chemical stability of the molecules.

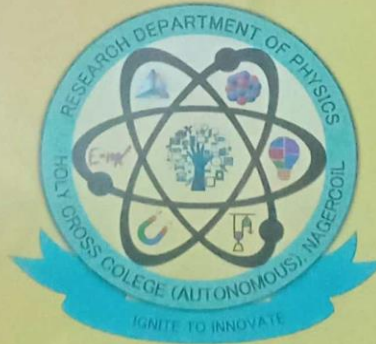
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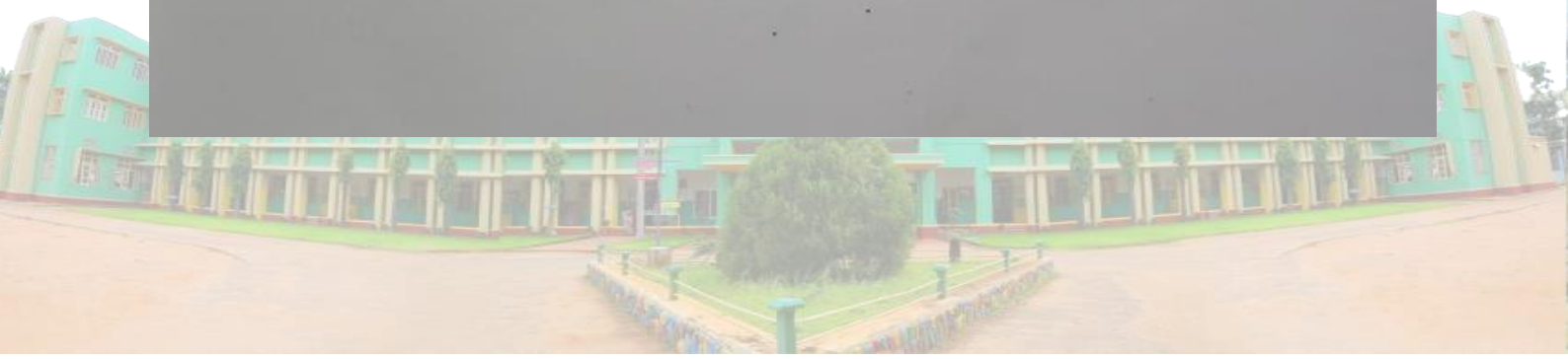
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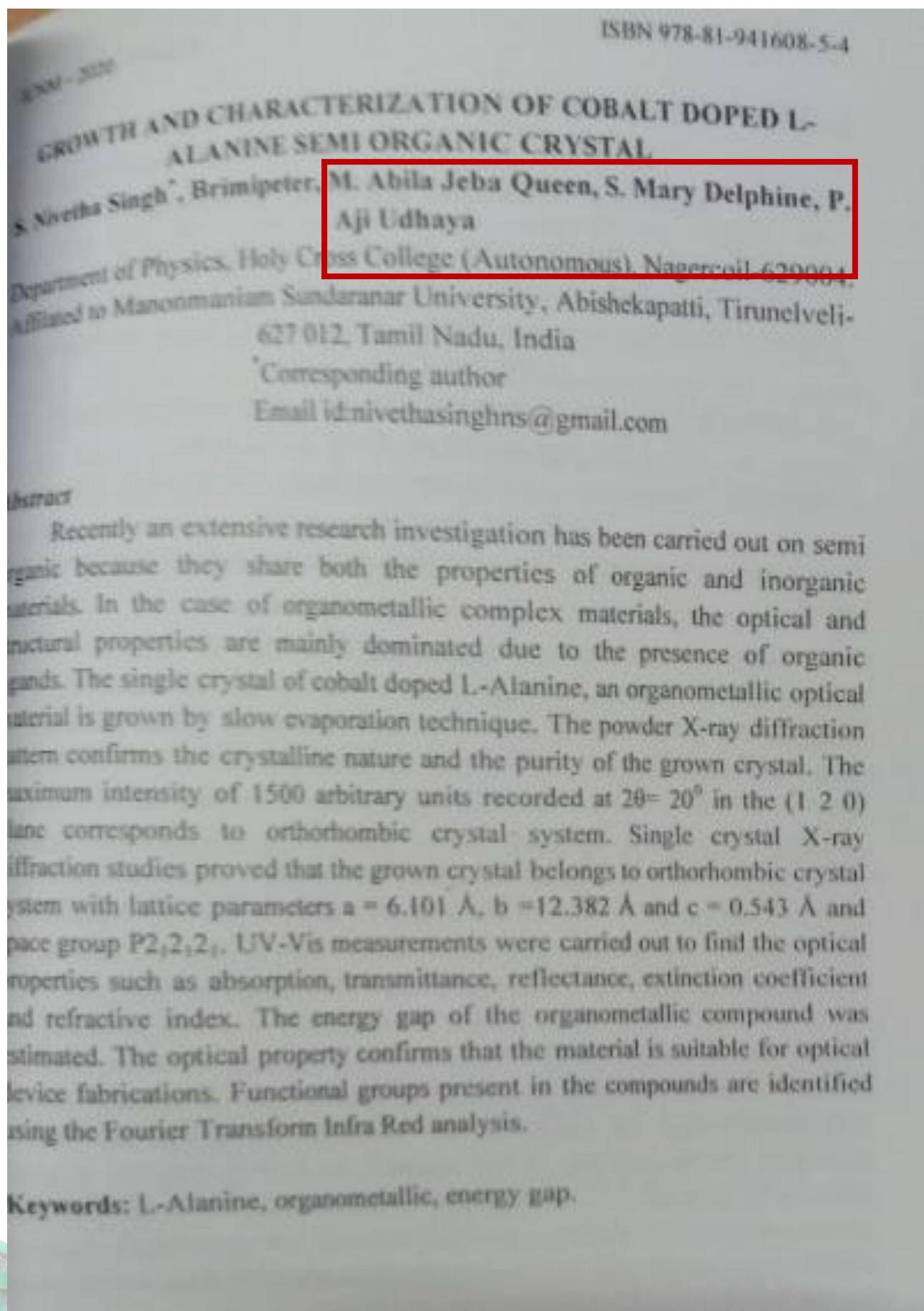


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GROWTH AND CHARACTERIZATION OF COBALT DOPED L-ALANINE SEMI ORGANIC CRYSTAL

S. Nivetha Singh*, Brimipeter, M. Abila Jeba Queen, S. Mary Delphine, P. Aji Udhaya

Department of Physics, Holy Cross College (Autonomous), Nagercoil-629004, Affiliated to Manonmaniam Sundaranar University, Abishekapatti, Tirunelveli-627 012, Tamil Nadu, India

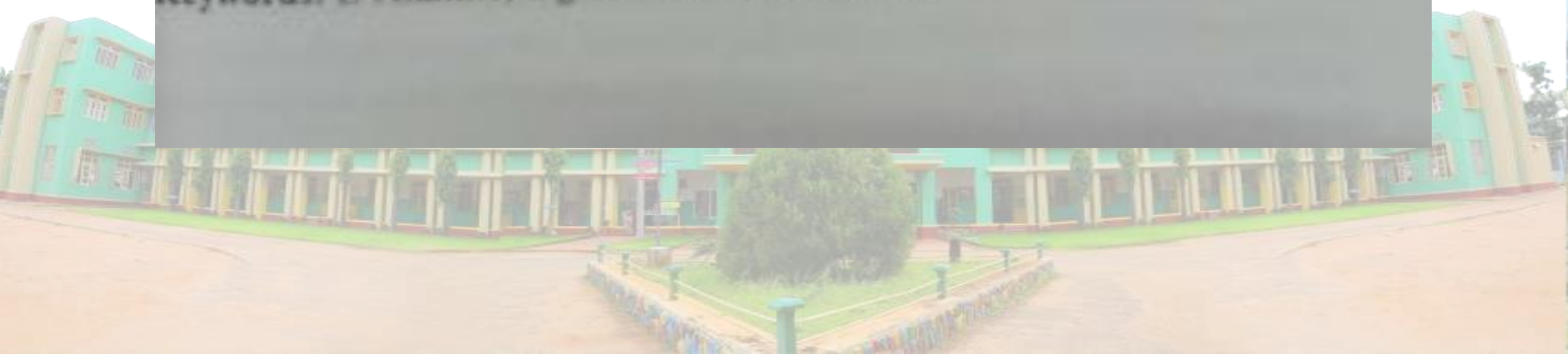
*Corresponding author

Email id: nivethasinghns@gmail.com

Abstract

Recently an extensive research investigation has been carried out on semi organic because they share both the properties of organic and inorganic materials. In the case of organometallic complex materials, the optical and structural properties are mainly dominated due to the presence of organic ligands. The single crystal of cobalt doped L-Alanine, an organometallic optical material is grown by slow evaporation technique. The powder X-ray diffraction pattern confirms the crystalline nature and the purity of the grown crystal. The maximum intensity of 1500 arbitrary units recorded at $2\theta = 20^\circ$ in the (1 2 0) plane corresponds to orthorhombic crystal system. Single crystal X-ray diffraction studies proved that the grown crystal belongs to orthorhombic crystal system with lattice parameters $a = 6.101 \text{ \AA}$, $b = 12.382 \text{ \AA}$ and $c = 0.543 \text{ \AA}$ and space group $P2_12_12_1$. UV-Vis measurements were carried out to find the optical properties such as absorption, transmittance, reflectance, extinction coefficient and refractive index. The energy gap of the organometallic compound was estimated. The optical property confirms that the material is suitable for optical device fabrications. Functional groups present in the compounds are identified using the Fourier Transform Infra Red analysis.

Keywords: L-Alanine, organometallic, energy gap.



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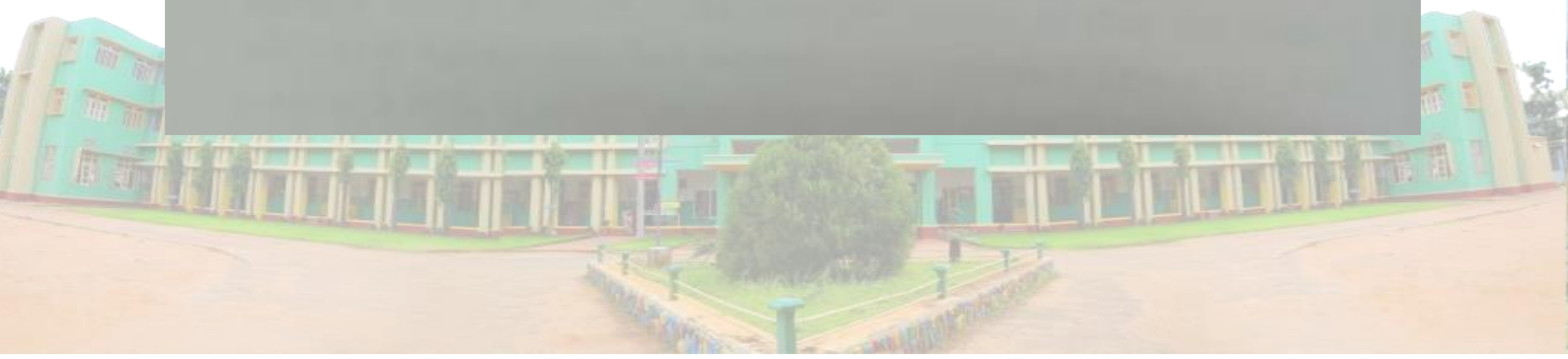
GROWTH AND STUDIES ON POTASSIUM DIHYDROGEN
PHOSPHATE DOPED ZINC TRIS THIOUREA SULPHATE (ZTS)
SINGLE CRYSTALS

B.R. Princy¹, A. Shamini¹, **Fernando Loretta¹**

¹Research Department of Physics, Holy Cross College, Nagercoil -629004,
Tamil Nadu, India

Nonlinear optical semi organic crystals have been in demand over the last several decades due to their technological importance in the fields of optical communication, optical data storage, frequency conversion, signal processing, electro-optical Q-switching and instrumentation. Transition metal thiourea complexes are potentially useful candidates for such organometallic systems. These metal organic complexes have NLO activities, the organic ligand is usually more dominant in the NLO effect and the metallic part results in a high transparency in the UV region. Zinc tris-thiourea sulphate (ZTS) is a metal-organic crystal which plays an important role in the emerging photonic and optoelectronic technologies. In the present study single crystals of pure and 1 mole % Potassium dihydrogen phosphate doped ZTS were grown from aqueous solutions by slow evaporation technique. The grown crystals were characterized by powder X-ray diffraction analysis to confirm their crystalline nature and also to calculate the lattice parameters. The mechanical strength of the grown crystals was analyzed using Vickers microhardness test. The UV-Visible spectra were recorded for the grown crystals to determine the optical behavior of the crystals. These studies reveal that 1 mole % Potassium dihydrogen phosphate doped ZTS crystal is a good candidate in the field of optoelectronics and laser technology.

Keywords: crystal, NLO, PXRD, ZTS, UV-Vis



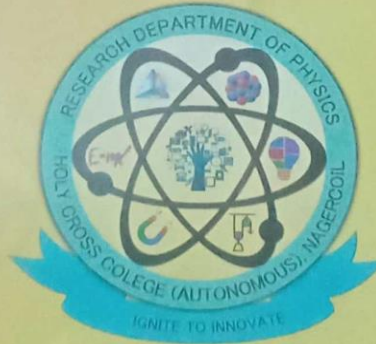
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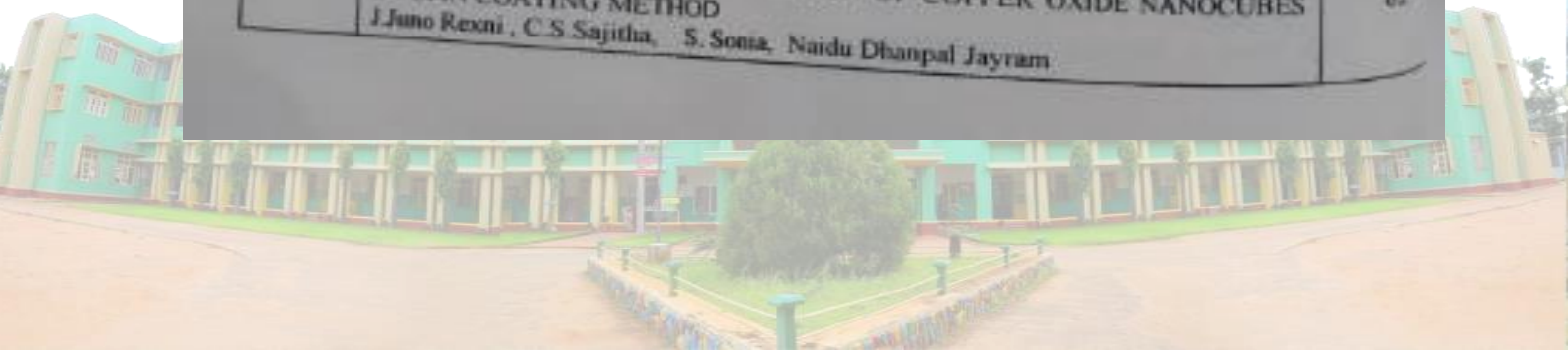
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SYNTHESIS OF NATURAL CELLULOSIC FIBER FROM THE PEDUNCLE OF *ARTOCARPUS HETEROPHYLLUS*

*M. Abisha, *R. Krishna Priya, *SuthaShobana,
*JeyaprakashDharmaraja, *ManokaranVadivel, *Sundaram Arvindnarayan
*Department of Physics, Holy Cross College (Autonomous), Nagercoil.
E-mail: priyanaga2111@gmail.com
*Department of Chemistry & Research Centre, Mohamed Sathak Engineering
College, Ramanathapuram, Tamil Nadu, India.
*Division of Chemistry, Faculty of Science and Humanities, Sree Sowdambika
College of Engineering, Aruppukottai, Virudhunagar, Tamil Nadu, India
*Department of Mechanical Engineering, Rajas Engineering College,
Vadakkankulam, Tamil Nadu, India

Abstract

Natural fiber-reinforced composites are now replacing many synthetic fibers due to their cheap availability and favorable ecological impact. This work mainly involves the extraction of new cellulosic fibers from peduncle part of the jack fruit. Further, functionality, crystalline and surface roughness of *Artocarpus heterophyllus* fibers (AHFs) were analyzed via Fourier transform infrared, X-ray diffraction, Scanning electron microscopy. The physical properties of AHFs and the crystallinity index (39.3%) were compared to those of other natural fibers.

Keywords: Natural fibers, X-ray diffraction, Fourier transform infrared, Scanning electron microscopy



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COMPARATIVE STUDY MADE ON STRUCTURAL
CHARACTERIZATION OF NATURAL CELLULOSIC FIBER
MATERIAL DERIVED FROM *FICUS BENGHALENSIS* AND *MUSA
ACUMINATA*

^aV.SahayaRansifa, ^aV.Namitha, ^aK.R.Jaya Sheeba, ^aR. Krishna Priya*,
^bSutha Shobana

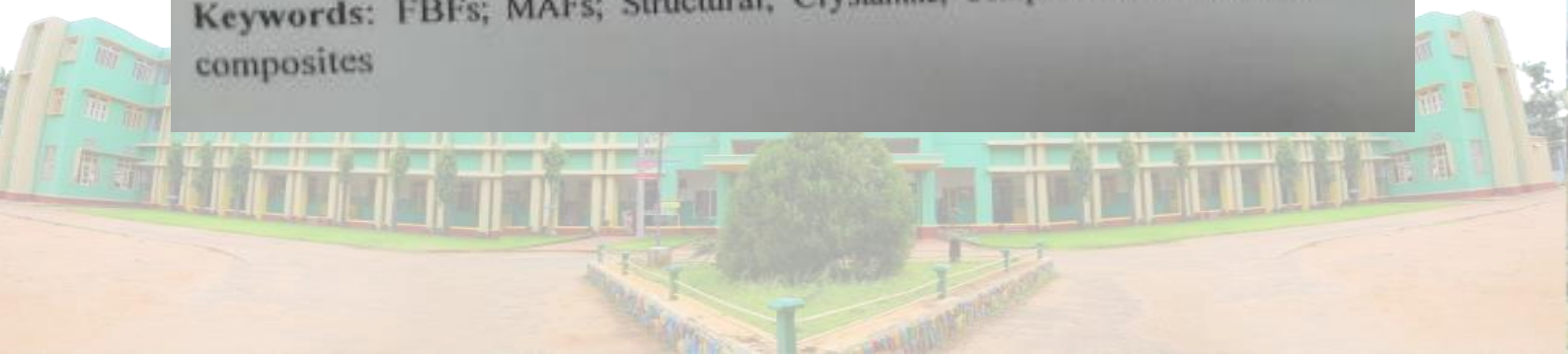
^aDepartment of Physics, Holy Cross College (Autonomous), Nagercoil.
E-mail: priyanaga2111@gmail.com

^bDepartment of Chemistry & Research Centre, Mohamed Sathak Engineering
College, Ramanathapuram, Tamil Nadu, India.

Abstract

In this investigation the structural, crystalline characteristics and surface morphology of *Ficus benghalensis* fibres (FBFs) and *Musa acuminata* fibre (MAFs) were studied. The Crystalline index of the banyan fibre is higher than the plantain fibre which indicates that it is suitable for composite reinforcement for potential applications. *PXRD* pattern of the MAF replicates the semi-crystalline nature of the material and that of the banyan fibre shows their crystallinity. The crystallite size of the banyan fibre is greater than that of the plantain fibre, which shows the moisture absorption capacity of the banyan fibre will be reduced and thereby improves the compatibility with the matrix composite. Physical properties indicate the aspect ratio of the plantain fiber is higher than that of the banyan fiber. FT-IR results show the various vibrational band assignment of the fiber material. The presence of strong hydrogen bonds on the treated fiber results in good mechanical behaviour of the fibres. The SEM reveals that surface morphology was altered, because of the reduced amount of existed waxy substances. The decrease in the amorphous content is more in banyan fiber, as compared to the plantain fiber, which all clearly depicted in the SEM micrograph. Finally, the characterization results concluded that the extracted FBFs and MAFs fibres can be successfully used in reinforcement process for making green composites.

Keywords: FBFs; MAFs; Structural; Crystalline; Comparative study; Green composites



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**ALBUMEN ASSISTED SYNTHESIS OF NANOCRYSTALLINE
COPPER FERRITE PHOTOCATALYST****P. Aji Udhaya^{1,2}, M. Meena³, M. Abila Jeba Queen¹, T. Regin Das^{2,4}**

¹Department of Physics, Holy Cross College, Nagercoil, Affiliated to Manonmaniam Sundaranar University, Abishekapatti, Tirunelveli-627012, India.

²Research Scholar, Department of Physics, S.T. Hindu College, Nagercoil.

³Department of Physics, S.T. Hindu College, Nagercoil, Affiliated to Manonmaniam Sundaranar University, Abishekapatti, Tirunelveli-627012, India.

⁴Department of Physics, Lekshmiapuram Arts and Science College, Neyyoor, Nagercoil

*Corresponding Author: ajiudhaya@gmail.com, (Reg. No. 18123152132038)

Abstract

As a simple step to eradicate the polluting dyes in aqua ecosystem, CuFe_2O_4 nanoparticles well known for its ferromagnetic properties, low conductivity and high electrochemical stability was prepared by simple auto combustion technique using egg white as fuel via green synthesis route. The structural, morphological and magnetic properties of prepared CuFe_2O_4 were analyzed. The desirable phase purity of the prepared spinel ferrite was deliberated by powder X-ray Diffractometer (PXRD), Fourier Transform Infrared Spectrometer (FTIR), Scanning Electron Microscopy (SEM), Energy Dispersive and Vibrating Sample Magnetometer (VSM). XRD predicts the phase formation, particle size and lattice parameter of the spinel ferrites. The FTIR spectrum confirms the ferrite structure. The Morphological and Elemental analysis was made using SEM and EDAX. The hysteresis curve reveals the magnetic properties such as remanence magnetization (M_r), coercivity (H_c) and saturation magnetization (M_s). The photocatalytic efficiency of the synthesized sample was determined from degradation of Methylene blue dye. The whole process was monitored using spectrophotometer at regular intervals of time. The maximum photocatalytic degradation efficiency for CuFe_2O_4 is around 98 %.

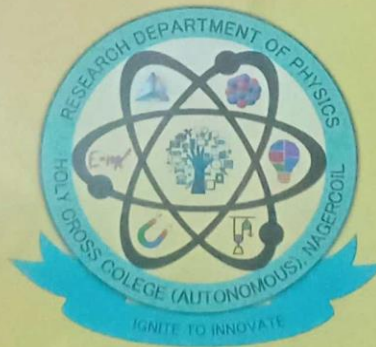
Keywords: CuFe_2O_4 , Ferrite, green synthesis, egg white, Combustion, Photocatalyst.

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STRUCTURAL AND SURFACE BEHAVIOUR OF CuO AND Pt/CuO NANOSTRUCTURED THINFILMS

Jinitha. C.G. *, M. Abisha* **S. Sonia***

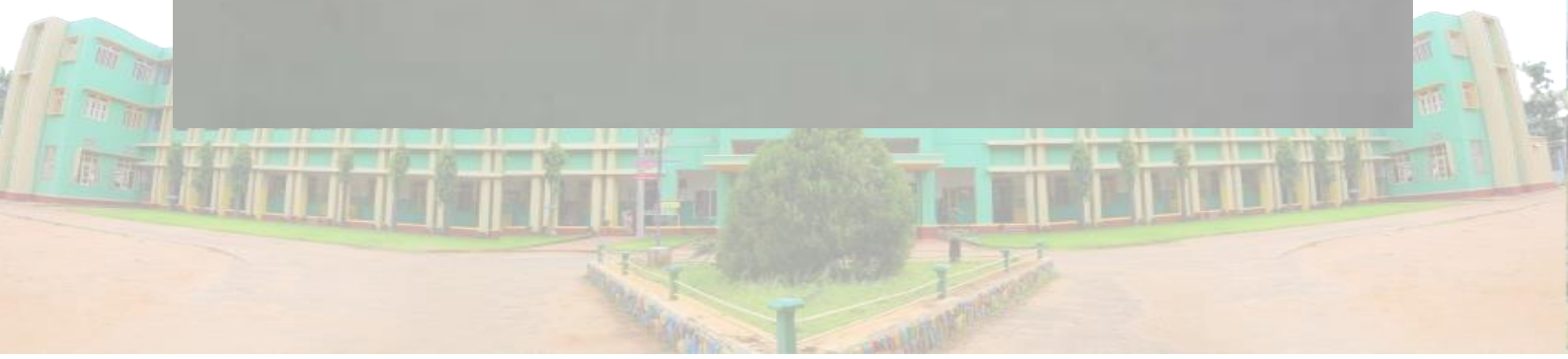
*Department of Physics, Holy Cross College (Autonomous), Nagercoil - 629 004

*Corresponding author: sonianst10@gmail.com (S. Sonia)

Abstract

The most prominent and utilizable Platinum coated Copper Oxide nanostructured thin film is prepared using the SILAR method. Their structural properties have been studied using X-ray diffraction pattern (XRD) and RAMAN spectroscopy. XRD pattern reveals the phase purity and crystallinity of CuO nanostructures. The average grain size estimated from XRD gives the diameter in the range of 14 - 27 nm. Raman spectra explains the structural information of CuO and Pt/CuO nanostructured thinfilms, in which, the peaks observed at 328 cm^{-1} , 609.32 cm^{-1} and 1141.77 cm^{-1} are the different phonon modes of CuO. The peak at 2136 cm^{-1} provides the strong evidence for the formation of platinum on CuO nanostructures. The SEM micrograph confirms the floral morphology, which is composed of nano petals. From the observed morphology, it is observed that the deposited thin films such as CuO and Pt/CuO will give an interesting application to our society by being an self cleaning agent, photocatalyst, semiconductor devices, optical fibres etc.

Keywords: CuO ; Pt/CuO ; Structural analysis



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SYNTHESIS AND CHARACTERIZATION OF COPPER OXIDE
NANOCUBES BY SPIN COATING METHOD

J.Juno Revul^{*}, C.S.Sajitha^{*}, S. Sonia^{**}, Naidu Dhanpal Jayram^{*},

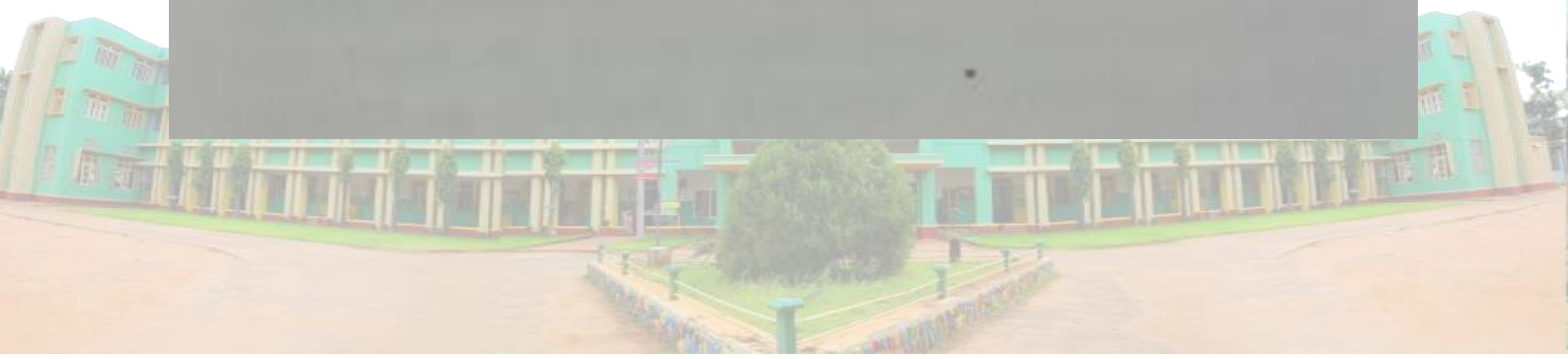
^{*}Department of Physics, Holy Cross College (Autonomous) Nagercoil-629004

Abstract

CuO nanocubes were deposited over the Glass substrate by spin coating technique without any surfactants for reaction speed 120s. 0.2 mol of Copper Sulphate is used as copper source and dil. NH₃ is used to form gel. This gel serves as the pre-cursor for the fabrication of CuO thinfilm on the glass substrate. XRD analysis confirms the monoclinic phase of CuO and purity of nanostructures. FESEM analysis proves the Cube-like morphology of CuO thinfilm and the optical properties has been studied by UV-is spectroscopy. Refractive index was calculated from the absorption spectra and the value is 3.25

Key Words: Nanocubes; Spin coating Technique; Refractive index

^{**}Corresponding Author : sonia.s@holycrossncl.edu.in (S.Sonia)



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Growth and optical properties of cobalt doped L-Alanine crystal for optoelectronic applications

Brimipeter, S. Nivetha Singh, M. Abila Jeba Queen, S. Mary Delphine, P.Aji Udhaya

Department of Physics, Holy Cross College (Autonomous), Nagercoil-627004.

Email id: jeba.abi@gmail.com

Abstract The single crystal of cobalt doped L-Alanine; an organometallic optical crystal is successfully grown by slow evaporation technique. UV-Vis measurements were carried out to study the optical properties such as absorption, transmittance, reflectance, extinction coefficient and refractive index. The energy gap of the organometallic compound was estimated. The optical property confirms that the material is suitable for optical device fabrications.

Keywords: L-Alanine, organometallic, energy gap.

1. Introduction

Recently an extensive research investigation has been carried out on organometallic and coordination materials because they share both the properties of organic and inorganic materials. In the case of organometallic complex materials the optical and structural properties are mainly dominated due to the presence of organic ligands [1]. Among the VII B transition metals, the compound nickel has high transparency in the UV region. Therefore cobalt compounds are used as coatings, batteries, kitchen wares, mobile phones, power generation, ornaments etc. Nickel with electronic configuration [Ar] 3d⁷ 4s² having more strength, greater toughness act as a better corrosion resistance material for electronic and magnetic materials. Alanine is α-amino acid which contains amine, carboxyl and methyl group exist in a zwitterionic form [2]. In this emerging context organic non linear materials have been recognized as a forefront candidate for fundamental and applied investigations including, in a joint effort of chemists, material scientists and optical engineers [3-7]. In this paper, we have reported the growth, structural and optical properties of a cobalt doped L-Alanine single crystals.

2. Experimental Procedure

Slow evaporation is a simple technique used to grow single crystals at ambient temperature and pressure. Deionised water was chosen as a solvent because the precursor materials are readily soluble in water. The selected precursor materials are L-Alanine and cobalt chloride. The solution was prepared by dissolving 1: 0.1 molar ratio of L-Alanine and cobalt chloride. Then the solution heated at 45^o C using a temperature controlled stirrer to get the homogenized mixture. Afterwards the solution is filtered and then allowed for slow evaporation. Nucleation occurs after 9 days and good quality crystals of 1.5×1×0.2cm size are harvested after 30 days.

3. Result and Discussion

In order to study the optical properties of the cobalt doped crystal, cobalt doped L-Alanine crystal of 3.25 mm thickness is subjected to UV/Vis/NIR spectrophotometer. The spectrum was recorded in the wavelength range of 200 - 900 nm. It was observed that the crystal has good transmittance and lower cut off wavelength is found to be 235 nm and its transparent power is 98%. The optical band gap (E_g) at the lower cutoff wavelength (λ) for the crystal is evaluated using the relation,

$$E_g = \frac{hc}{\lambda} \tag{1}$$

Furthermore, the position of the valance and conduction band of the cobalt doped crystal can be determined using the relations as follows;

$$E_{(CB)} = \chi - E^o - 0.5 E_g \tag{2}$$

$$E_{(VB)} = E_{(CB)} + E_g \tag{3}$$

Where h is planks constant and c is the velocity of light. χ represents absolute electronegativity of the compound. E^o denotes the energy of free electrons on the hydrogen scale (4.5 eV). Where E_(CB), E_(VB) are the band edge position of the valance and conduction band respectively. Refractive index is considered as a most important optical property. In order to determine the refractive index of the crystal, the absorption coefficient (α), extinction coefficient (K) and reflectance (R) were evaluated using the following relations;

$$\alpha = \frac{2.303 \times \log \frac{1}{T}}{t} \tag{4}$$

$$K = \frac{\lambda \alpha}{4\pi} \tag{5}$$

$$R = \frac{\exp(-at) + \sqrt{\exp(-at)T - \exp(-3at)T + \exp(-2at)T^2}}{\exp(-at) + \exp(-2at)T} \tag{6}$$

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Synthesis of Nickel Oxide nanostructures by hydrothermal method: Effect of surfactant on morphology

S. Virgin Jeba^a, S. Sebastiammal^b, S. Sonia^b and A. Lesly Fathima^{*}

^a Research Scholar, Register No. 18113042192018, Research Department of Physics, Holy Cross College (Autonomous), Nagercoil-629004, Tamil Nadu, India. (Affiliated to Manonmaniam Sundaranar University, Abishekapatti, Tirunelveli-627012, Tamil Nadu, India)

^b Research Department of Physics, Holy Cross College (Autonomous), Nagercoil-629004, Tamil Nadu, India. (Affiliated to Manonmaniam Sundaranar University, Abishekapatti, Tirunelveli-627012, Tamil Nadu, India)

Abstract

Evolution of morphologies for different materials becomes a phenomenal challenge as they act as the key role in defining their functional properties and desired applications. Here, we report the synthesis of Nickel Oxide nanostructures with different morphologies, such as beads, microsphere and mini rod bundles were constructed from their respective nanoscale building blocks through a simple and cost effective hydrothermal technique. Structural analysis based on X-ray diffraction (XRD) confirms the purity of the NiO structures. Field Emission Scanning Electron Microscope (FESEM) corroborates the multiform morphologies of NiO.

Keywords: Nickel Oxide, hydrothermal technique, surfactant.

^{*}Corresponding Author: leslysat@gmail.com

1. Introduction

Nanostructured materials have attracted great interest due to their outstanding physical and chemical properties and also promising applications in nanodevices in both fundamental as well as applied research areas [1]. When compared with bulk properties nanometer scale results in various interesting properties when there is a reduction in their particle size. Nickel oxide (NiO) is a material that has been the subject of a considerable number of research studies, mostly on the basis of the unique electrical, optical and magnetic properties of the material [2]. NiO is considered a prototypical p-type, wide band gap (3.6–4.0 eV) semiconductor [3, 4]. In accomplishing manipulation of the nanostructured nickel oxide, a variety of strategies have been employed, such as evaporation [5] sputtering [6], electrodeposition [7], hydrothermal [8] and sol-gel techniques [9]. Hydrothermal method has some advantages such as simple process, low-cost and easiness to obtain high purity products hence it is quite promising and facile route for industrial applications.

To exhibit the size-dependent properties of the materials, it is important to prepare nanomaterials with controlled size and even distribution. Surfactants play an important role in controlling the growth of the particles and a narrow size distribution. In addition these surfactants also play an important role as precursors with special structures and shapes which prevent agglomeration

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SURFACTANT ASSISTED SYNTHESIS OF MONOVALENT (Ag^+) DOPED NANO
HYDROXYAPATITE (nHAp) AND ITS ANTIBACTERIAL ACTIVITY

S. Sebastiammal^a, S. Virgin Jeba^b and A. Lesly Fathima^{b*}

^aResearch Scholar (Reg.No:17213042132003), Department of Physics, Holy Cross College
(Autonomous), Nagercoil-629004, Tamil Nadu, India.

(Affiliated to Manonmaniam Sundaranar University, Abishekapatti, Tirunelveli-627012, Tamil Nadu,
India)

^bDepartment of Physics, Holy Cross College (Autonomous), Nagercoil-629004, Tamil Nadu, India.

Abstract

Nanosized silver doped Hydroxyapatite particles with CTAB surfactant (Ag HAp-CTAB) were prepared by sol-gel method. The phase purity and particle size of the powder samples were determined by X-ray diffraction analysis and the present study aims to synthesize biomaterial that has effective antibacterial properties. The antibacterial test showed that silver doped hydroxyapatite was very sensitive to different bacterial pathogens and has potential importance in a variety of clinical applications.

Keywords: Hydroxyapatite, CTAB, XRD, antibacterial.

*Corresponding Author mail ID: leslysat@gmail.com

1. Introduction

In recent years the nanomaterials has been widely studied due to several application in the field of medicine, biomedicine, catalysis, optics and electronics [1-2]. On the other hand, Ag^+ doped Hydroxyapatite with CTAB surfactant (Ag HAp-CTAB) have been also studied due to their properties and multiples applications in the biomedicine field [3]. Ag^+ doped HAp exhibits many advantages over other materials, such as excellent biocompatibility and good antibacterial ability [4-5]. The heterogeneous nucleation process employed to doping the HAp, offer a functional route to obtain a green composite with potential applications in multiple fields, such as tissue engineering and bone repair.

2. Materials and methods

2.1 Materials

All the chemicals used for synthesizing Ag^+ doped HAp nanoparticles were of analytical reagent grade. The Ag^+ doped HAp nanoparticles were prepared using Calcium nitrate $[Ca(NO_3)_2 \cdot 4H_2O]$, Silver nitrate $[Ag(NO_3)_2]$, Di-ammonium hydrogen phosphate $[(NH_4)_2HPO_4]$, Cetyl trimethyl ammonium bromide (CTAB) and Ammonia $[NH_3]$. The double distilled (DD) water was used throughout the experiment.

2.2 Preparation of CTAB assisted Ag^+ doped Hydroxyapatite

0.9 M of calcium nitrate and 0.1 M of silver nitrate was dissolved in 50 ml of de-ionized water separately and stirred for 30 min using magnetic stirrer. 0.1 M of CTAB surfactant was dissolved in 50

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Synthesis, Structural and Magnetic Properties of Zinc Ferrite Nanoparticles
 P. Aji Udhaya^{1,2*}, M. Meena³, M. Abila Jeba Queen¹, T. Regin Das^{3,4}
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¹Department of Physics, Holy Cross College, Nagercoil, Affiliated to Manonmaniam Sundaranar University, Abishekapatti, Tirunelvel-627012, India.

²Research scholar, Department of Physics, S.T. Hindu College, Nagercoil.

³Department of Physics, S.T. Hindu College, Nagercoil, Affiliated to Manonmaniam Sundaranar University, Abishekapatti, Tirunelvel-627012, India.

⁴Department of Physics, Lekshmipuram Arts and Science College, Neyyoor, Nagercoil, Affiliated to Manonmaniam Sundaranar University, Abishekapatti, Tirunelvel-627012, India.

*Corresponding Author: ajiudhaya@gmail.com, (Reg. No. 18123152132038)

Abstract:

Ferrite nanoparticles have reached considerable attention in the recent times due to their unmatched biological applications and also feasibility in the scientific and technological areas of research. Nanosized spinel ferrites are the most important class of materials, that have significantly tempered the contemplation of researchers due to their exceptional structural, optical and magnetic properties. These properties are accommodated in $ZnFe_2O_4$ which make it a suitable competitor in the field of electronics, areas of applied optics and telecommunication. A plausible and economically viable self-combustion method using egg white as fuel has been adapted to synthesize the nanoparticles. The powder X - ray diffraction (PXRD) and Fourier Transform Infrared Spectroscopy (FTIR) results indicated that the synthesized nanoparticles are of single phase and show evidence of spinel structure. Also the functional groups present in the synthesized nanoparticles were identified from FTIR spectra. Magnetic moment and retentivity of the as synthesized Zinc ferrite ($ZnFe_2O_4$) nanoparticles were obtained using Vibrating Sample Magnetometer (VSM) analysis.

Keywords: ferrite; egg white; PXRD; FTIR; VSM.

1. Introduction:

Magnetic nanoparticles (MNPs), infer an array of exclusive magnetic wonders that are extremely exposing from those at bulk, gathering much attention straddling from magnetic memory devices to biomedical sensors for applications such as examining of perennial diseases, magnetic storage devices, actuators, magnetic resonance imaging, gas sensors, etc. The nano-sized ferrites grab to have extraordinary electrical resistivity which prevents induced eddy current and the trouncing of energy, and in this correlation, the favourable fundamental properties are robustly dominated by the nanoscaling laws. Nanosized ferrites of the form MFe_2O_4 ($M = Zn, Co, Cu, Ni, \text{etc.}$) are the most imperative magnetic materials that hitherto be well investigated for their physical and chemical properties. The metal-iron ratio plays a leading and vital role in controlling the magnetic nature of MFe_2O_4 nanoparticles. On reduction of the dimensions of particle, surface effects might turn out to be vital due to the augmented volume fraction of surface atoms [1]. As a gifted add-on of ferrite family, $ZnFe_2O_4$ has engrossed researchers due to its invigorating magnetic properties than other ferrites. Bulk zinc ferrite belongs to a typical spinel having antiferromagnetic properties underneath the Néel temperature, whereas it behaves as ferromagnetic at room temperature.

2. EXPERIMENTAL PROCEDURE

Zinc ferrite nanoparticles were prepared using ferric nitrate nonahydrate and zinc nitrate hexahydrate of high chemical purity along with freshly prepared egg white. Egg white rich in protein is easily soluble in water which makes it associate with metal ions easily egg white also serves as binder cum gel for shaping materials. Egg White and double distilled water is mixed in 2:1 ratio to form homogeneous solution by vigorous stirring at room temperature for two hours. $Zn(NO_3)_2 \cdot 6H_2O$

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CYBERCRIMES IN INDIA: CYBER SECURITY TRENDS, CYBERCRIME VICTIMIZATION & PREVENTION

Jinitha. C.G^a, P. Abisha^b, S. Sonia^{b*}

^aPh.D. Research Scholar in Physics. Reg.No. 19213042132016, Holy Cross College (Autonomous), Nagercoil.

^bM.Phil. Research Scholar in Physics, Holy Cross College (Autonomous), Nagercoil - 629 004.

Affiliated to Manonmaniam Sundaranar University, Tirunelveli, Tamilnadu, India

^{b*} Department of Physics, Holy Cross College (Autonomous), Nagercoil - 629 004.

*Corresponding author: sonianstl0@gmail.com (S. Sonia)

ABSTRACT

The Internet is fast becoming a way of life for millions of people and also a way of living because of growing dependence and reliance of the mankind on these machines. Cybercrime may be committed irrespective of organizations trying to prevent hackers and blocking pornography. This has generated major risk exposure, including exposure to financial losses, regulatory issues, data loss, damage to brand, and loss of client and public assurance. In This year only, attacks on cloud shared security model will mount manifold to protect infrastructure by authorizing on personal access. This will involve the adoption of technologies like Cloud Access security broker (CASB) for additional security controls. In digital economy, the organizations that have fear of fraud, blockchain will show them silver lining to prevent data theft. norms and protocols to protect their infrastructure from cyber-attacks. Similarly, Armed forces too have their own agencies for cyber security. College students have been identified as an at-risk group for a wide range of personal and property victimization experiences. Their high level of risk coupled with a propensity to routinely stay socially connected through a variety of electronic media including online social networks, text messages, and instant messages makes college students an ideal population for studying cyberstalking victimization. Prior research examining college student populations has focused on property victimization.

1. INTRODUCTION

India ranks 3rd followed by USA and China in terms of the highest number of internet users in the world. Indian is ranked among top five countries to be affected by cybercrime. Military organizations and Government store and process large volume of relevant data and transmit

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CYBERCRIMES AND THEIR IMPACTS

P. Abisha^a, Jinitha. C.G^b S. Sonia^{b*}

^aM.Phil Research Scholar in Physics.(Reg.No. 191408), Holy Cross College (Autonomous), Nagercoil.

^b Ph.D Research Scholar, Department of Physics, Holy Cross College (Autonomous), Nagercoil - 629 004

Affiliated to Manonmaniam Sundaranar University, Tirunelveli, Tamilnadu, India

^{b*} Department of Physics, Holy Cross College (Autonomous), Nagercoil - 629 004

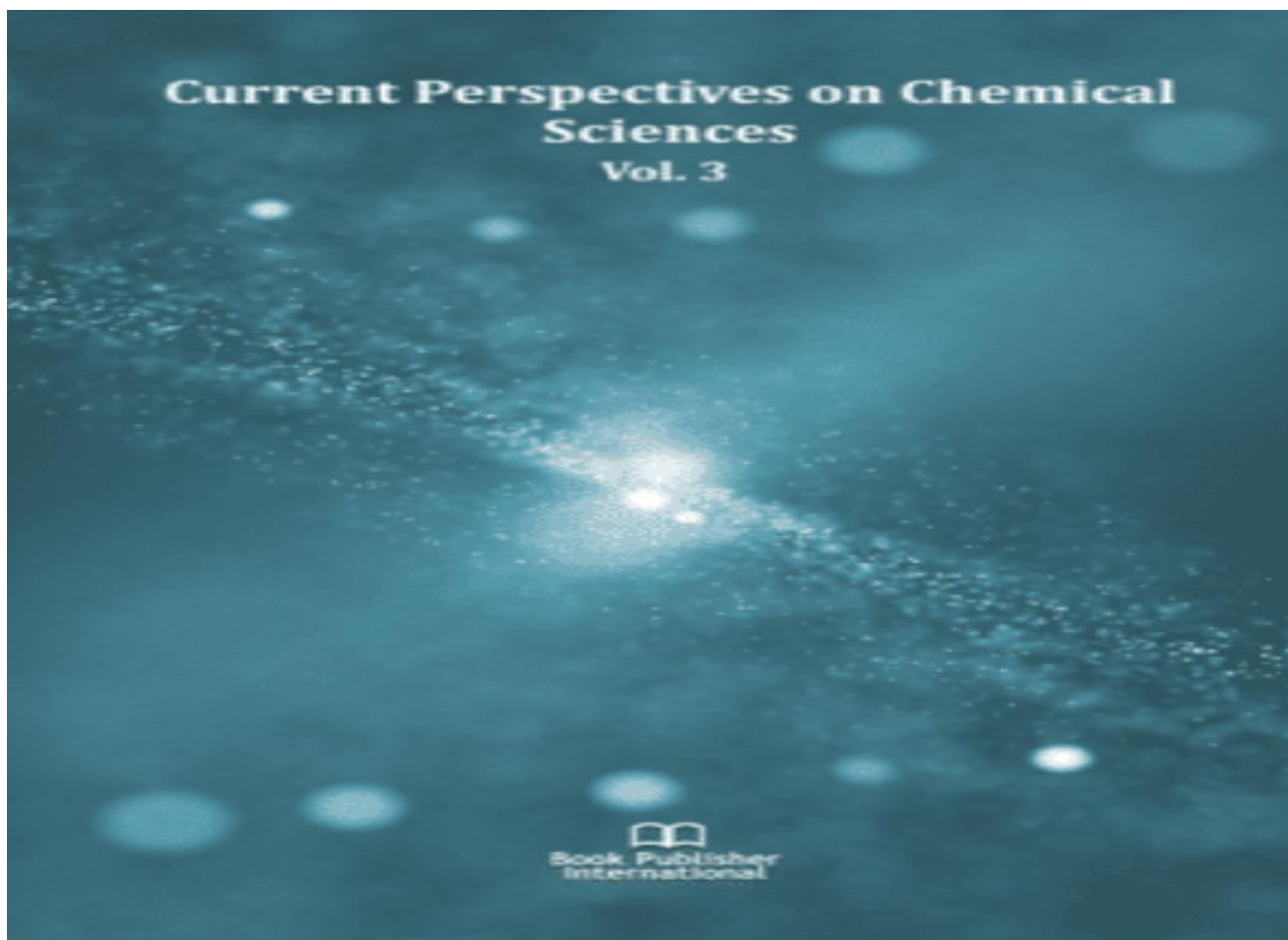
*Corresponding author: sonianstl0@gmail.com (S. Sonia)

ABSTRACT

The world today relies heavily on the use of electricity and numerous to keep everything running smoothly. No matter where one goes, there is some sort of technology that has a drastic impact on life. Whether it be to the grocery store, the movie theatre or the gas station most of these places would cease to be able to operate if there were no more access to the technology, they have become dependent. At the same time that the world has become overly dependent on technology criminals have taken advantage of this situation to use it for their benefit and to make committing crimes easier for them and in many cases the very people who are victims can unknowingly make themselves targets simply by not protecting their presence in this technology based world. Cybercriminals are not constrained by geographical limitations as cyberspace is a free-flowing, borderless and a global problem. As technology evolves and people undoubtedly become increasingly more, dependent on this technology they will get more and more careless with the important information. As technology grows and cybercrime because more prevalent then so do the steps and precautions taken to prevent it.

1. INTRODUCTION

Current era is too fast to utilize the time factor in order to improve the performance factor. It is only possible due the use of Internet. The term Internet can be defined as the collection of millions of computers that provide a network of electronic connections between the computers. There are millions of computers connected to the internet. Everyone appreciates the use of Internet but there is another side of the coin that is cybercrime by the use of Internet. The term cybercrime can be defined as “An act committed or omitted in violation of a law forbidding or commanding it and for which punishment is imposed upon conviction”. Other words represent



Qing Zhou, Cheng-Hong Zou, Lei Wang, Chun-Yang Su

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Natural Acid Catalyzed Synthesis and Biological Evaluation of Dihydropyrimidinone Derivative Synthesised from Vanillin, Ethylacetoacetate and Urea

Sheeba Daniel^{1*}, K. Saraniya¹, P. Vinitha¹ and T. R. Scotlin Blessy¹

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ABSTRACT

Green synthesis of organic compounds using solvent-free condition has gained popularity in recent years, since the majority of solvents are either toxic or flammable. Dihydropyrimidinones are very important heterocyclic motif in the realm of natural and synthetic organic chemistry. Natural acid catalyst is employed for organic synthesis, which effectively catalyses various organic transformations. The objective of the present research consists of green methodology for the synthesis of dihydropyrimidinone derivative. The present study focuses on the synthesis, characterization and biological evaluation of dihydropyrimidinone derivative ethyl-4-(4-hydroxy-3-methoxyphenyl)-6-methyl-2-oxo-1,2,3,4-tetrahydropyrimidine-5-carboxylate from vanillin, ethylacetoacetate and urea using gooseberry extract. The antimicrobial activity reveals that the synthesised dihydropyrimidinone can be used for the treatment of diseases caused by microbes. The synthesised compound is characterized by UV-Visible and FT-IR spectroscopy. The synthesised compound shows antibacterial, antifungal, antioxidant and anti-helminthic activities. This natural acid catalysed synthesis is safe, eco-friendly and does not employ any toxic materials and quantifying it as a green approach for the synthesis of organic compounds.

Keywords: Green synthesis; dihydropyrimidinone derivative; antimicrobial activity; antioxidant activity; anti-helminthic activity.

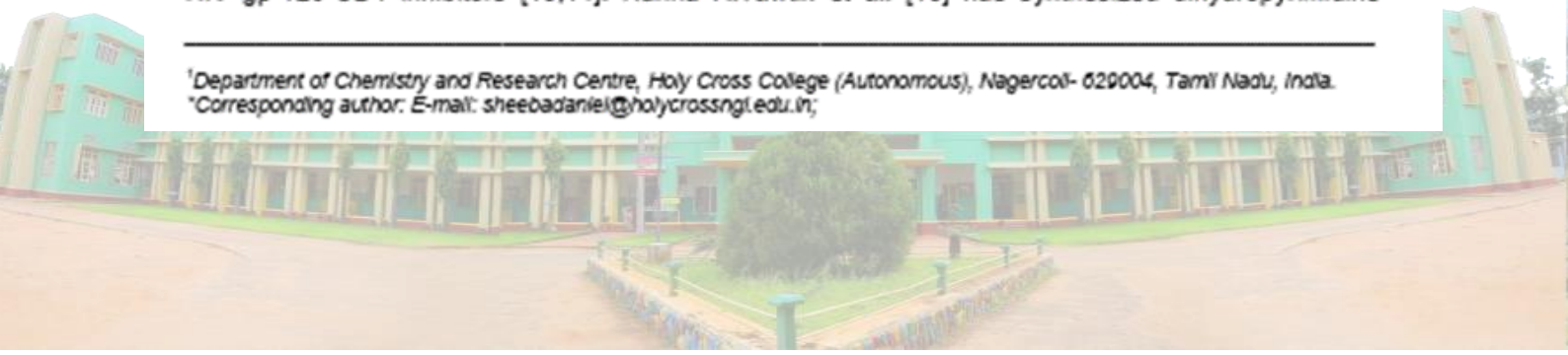
1. INTRODUCTION

Green synthesis of organic compounds using solvent-free condition has gained popularity in recent years, since the majority of solvents are either toxic or flammable [1]. Compared with conventional method this solvent free method is more convenient, simple to run, provide higher yield and shows maximum efficiency [2]. Green Chemistry can be comprehensively illustrated as a set of 12 principles, which were proposed by Anastas and Warner [3-6]. Recently fruit juice is known to be the potential organic solvent for the synthesis of pharmaceutically important organic compounds [7]. Fruit juices are used for various organic transformation reactions [8,9], and its widespread applications are due to their non-toxic, safe, inexpensive and environmentally benign nature [10].

Dihydropyrimidinones, the products of the Biginelli reaction, are widely used in the pharmaceutical industry. Dihydropyrimidinones and their derivatives show wide range of applications in natural, synthetic, pharmacological, therapeutic and bioorganic chemistry mainly due to their biological activities [11,12]. Moreover, dihydropyrimidinones have been suggested to be useful building blocks for the synthesis of batzelladine a marine alkaloid, which have been found to be potent HIV gp-120-CD4 inhibitors [13,14]. Hanna A.Tawfik et al. [15] has synthesised dihydropyrimidine

¹Department of Chemistry and Research Centre, Holy Cross College (Autonomous), Nagercoil- 629004, Tamil Nadu, India.

*Corresponding author: E-mail: sheebadaniel@holycrossngt.edu.in;



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Antimicrobial Evaluation of Benzhydryl Benzoate Derivative Synthesised from Vanillin and Benzophenone: A Grind-Stone Chemistry Approach

V. Anu Praba, K. Anu and Sheeba Daniel

Department of Chemistry, Holy Cross College (Autonomous), Nagercoil-629 004.

E-mail: sheebadaniel@holycrossngl.edu.in

Abstract

The present investigation deals about the base catalysed green synthesis of benzhydryl benzoate derivatives from vanillin and benzophenone using grind-stone chemistry approach. The synthesised benzhydryl benzoate derivative is characterized by UV and FT-IR spectroscopy. The antimicrobial activity of benzhydryl benzoate is tested against bacteria and fungi and it shows activity on *Escherichia coli*, *Staphylococcus aureus*, *Bacillus cereus*, *Pseudomonas aeruginosa*, *Candida albicans* and *Aspergillus* ~~fungi~~. The results revealed that the synthesised benzhydryl derivative may have a potential use in the biomedical applications due to its antimicrobial activity. This solvent free grinding method is more convenient, cost effective, simple to run, provide higher yield and shows maximum efficiency with reduced reaction time.

Keywords: Grind-stone technique, Benzhydryl benzoate derivative, Antimicrobial activity

1. Introduction

In recent years, the development of efficient green chemistry methods has received more attention as suitable alternative to conventional chemical procedures. Toda *et al.* has described that many reactions can be performed in high yields by simply grinding two or more solids together [1]. A grind stone method is one of the green chemistry methods used for the synthesis of organic compounds by simply grinding the reactants in a mortar and pestle and in such methods the chemical reaction is induced by the direct absorption of mechanical energy. This type of organic synthesis has become an expanding field in synthetic research because of many advantages compared to the conventional reactions. Benzhydryl Benzoate (~~diphenylmethyl benzoate~~) is widely used in the perfume and pharmaceutical industries [2]. The objective of the present investigation is to synthesise eco-friendly benzhydryl benzoate derivative from vanillin and benzophenone. The synthesised compound is characterized by UV and FT-IR spectral techniques. The antimicrobial evaluation of the synthesized compound is tested against bacteria and fungi.

2. Experimental Section

A mixture of vanillin, benzophenone and NaOH were grind together in a mortar with a pestle for 5 min and left to harden at room temperature. The colourless solid obtained was dissolved in cold water, acidified with dil HCl and kept aside for overnight. The colourless benzhydryl benzoate was filtered dried and recrystallised from ethanol.

The synthesized compound is characterized by UV and FT-IR spectroscopy. The antimicrobial activity of benzhydryl benzoate derivative was carried out on *Escherichia coli*, *Staphylococcus aureus*, *Bacillus cereus*, *Pseudomonas aeruginosa*, *Candida albicans* and *Aspergillus* ~~fungi~~ using Agar-well diffusion method.

3. Results and Discussion

The absorption spectrum of benzhydryl benzoate derivative synthesised from vanillin and benzophenone shows absorption band at 251 nm indicated the presence of $\pi-\pi^*$ transition (Fig.1).

The FT-IR spectrum of benzhydryl benzoate synthesised from vanillin and benzophenone shows the absorption bands at 3605, 3498, 3073, 2967, 1736, 1665, 1512, 1323, 1145, 1074, 909, 814, 743, 696 cm^{-1} respectively (Fig. 2). The medium sharp band at 3605 cm^{-1} is due to the free O-H stretching of the phenolic group. The band at 3498 cm^{-1} indicates the presence of hydrogen bonded –OH group. The presence of weak band at 3073 cm^{-1} corresponds to aromatic C-H stretching whereas the weak bands at 2967 cm^{-1} corresponds to alkene C-H stretching. The IR band at 1736 cm^{-1} is due to the presence of C=O stretching of an ester. IR spectrum exhibits weak band at 1665 and 1512 cm^{-1} due to the stretching vibration of aromatic C=C bond. The band at 1323 cm^{-1} is due to O-H bending vibration. The weak band at 1145 cm^{-1} indicates the C-O stretching of the phenolic group. The band at 1074 cm^{-1} is due to the C-O stretching of methoxy group. The band at 909 cm^{-1} is due to C=C bending

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Comparative Study on the Binding of Ruthenium(II)-Polypyridyl-Phendione Complexes with Aromatic Amino Acids in Aqueous Medium

R.S. Anusha Kumari, X. Diana and Sheeba Daniel*

Department of Chemistry, Holy Cross College (Autonomous), Nagercoil-629 004.

*E-mail: sheebadaniel@holycrossngl.edu.in

Abstract

Binding of $[\text{Ru}(\text{bpy})_2(\text{phendione})]^{2+}$ and $[\text{Ru}(\text{phen})_2(\text{phendione})]^{2+}$ (bpy = 2,2'-bipyridine, phendione = 1,10-phenanthroline-5,6-dione and phen = 1,10-phenanthroline) complexes with aromatic amino acids (histidine and tyrosine) in aqueous medium has been investigated by UV-Visible absorption spectral techniques. The binding constant (K_b) values of these complexes with histidine and tyrosine are determined, histidine shows higher K_b values in both the complexes and it shows better binding property with these complexes based on the factors of aromatic planarity, hydrophobicity and polar nature. The substituent present in the amino acid plays a vital role on the binding of the amino acids with these complexes. This study confirms the effect of substituents on the binding of Ru(II) complexes with biologically important amino acids.

Keywords: Ruthenium(II)-polypyridyl-phendione complexes, Amino acids, Benesi-Hildebrand equation, Binding constant

Introduction

Ru(II)-polypyridyl complexes undergo binding with DNA, RNA and proteins and act as therapeutic agents. The role of aromatic ligands may be prominent for enhancing the biological as well as the DNA binding properties of the Ru(II) complexes. Many researchers have reported that the binding of a drug to metalloprotein enhances its activity and in many cases the complex possesses even more significant activity than the parent compound [1]. Amino acids are important biological-active substances and basic structural units of proteins. Aromatic amino acids have unique and important properties. Based on the literature survey, the present study focuses on the binding of $[\text{Ru}(\text{bpy})_2(\text{phendione})]^{2+}$ and $[\text{Ru}(\text{phen})_2(\text{phendione})]^{2+}$ complexes with histidine and tyrosine.

Experimental Section

The complexes $[\text{Ru}(\text{bpy})_2(\text{phendione})]^{2+}$ and $[\text{Ru}(\text{phen})_2(\text{phendione})]^{2+}$ were synthesized by reacting the corresponding complexes of $[\text{Ru}(\text{bpy})_2\text{Cl}_2] \cdot 2\text{H}_2\text{O}$ or $[\text{Ru}(\text{phen})_2\text{Cl}_2] \cdot 2\text{H}_2\text{O}$ with phendione according to the procedure previously described [2]. The binding constant (K_b) of the two Ru(II) complexes with the amino acids histidine and tyrosine were determined from the Benesi-Hildebrand equation,

$$1/\Delta A = 1/K_b \Delta \epsilon [H] + 1/\Delta \epsilon [G]$$

The K_b can be obtained from the ratio of Y-intercept to the slope of the straight line.

Results and Discussion

The structure of the complexes used in the present study are shown in Fig.1. The absorption spectra of $[\text{Ru}(\text{bpy})_2(\text{phendione})]^{2+}$ and $[\text{Ru}(\text{phen})_2(\text{phendione})]^{2+}$ complexes in aqueous medium shows a low energy absorption at 438 and 440 nm assigned to the $d\pi - \pi^*$ MLCT (metal to ligand charge transfer) transition. The absorption spectral studies of $[\text{Ru}(\text{bpy})_2(\text{phendione})]^{2+}$ and $[\text{Ru}(\text{phen})_2(\text{phendione})]^{2+}$ complexes in aqueous medium with the incremental addition of histidine and tyrosine shows a slight increase in the MLCT absorption maximum, indicates the formation of ground state complexes. The K_b of these complexes with the corresponding amino acids are determined from the Benesi-Hildebrand plot (Table 1). The ground-state interactions between the amino acids and the ligands of $[\text{Ru}(\text{bpy})_2(\text{phendione})]^{2+}$ and $[\text{Ru}(\text{phen})_2(\text{phendione})]^{2+}$ complexes are hydrophobic or π -stacking in nature [3]. As the extent of π - π stacking interactions between the ligands of Ru(II) complexes and the amino acids increase the binding becomes stronger.

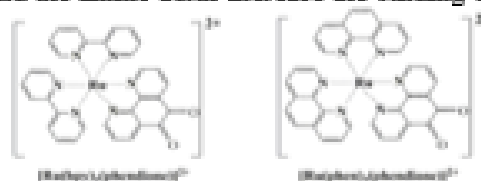


Fig. 1 Structure of Ru(II) complexes

Table 1 Binding constant, K_b (M^{-1}) of $[\text{Ru}(\text{bpy})_2(\text{phendione})]^{2+}$ and $[\text{Ru}(\text{phen})_2(\text{phendione})]^{2+}$ complexes with amino acids

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Effect of sodium dodecyl sulphate and Triton X-100 on the binding of tris(4,4'-dimethyl-2,2'-bipyridyl)ruthenium(II) cation with gallic acidSheeba Daniel¹ and G. Allen Gnana Raj²¹Department of Chemistry, Holy Cross College (Autonomous), Nagercoil - 4.²Department of Chemistry, Scott Christian College (Autonomous) Nagercoil - 3.

E-mail: sheebadaniel@holycrossnl.edu.in

Abstract

The binding of $[\text{Ru}(\text{dmppy})_3]^{2+}$ (dmppy = 4,4'-dimethyl-2,2'-bipyridine) complex with gallic acid in sodium dodecyl sulphate (SDS) and triton X-100 at pH 12.5 has been investigated by absorption spectral techniques. The binding constant (K_b) of $[\text{Ru}(\text{dmppy})_3]^{2+}$ complex with gallic acid is determined from the Benesi-Hildebrand equation. The K_b of gallic acid with $[\text{Ru}(\text{dmppy})_3]^{2+}$ complex in SDS and triton X-100 at pH 12.5 is 3.1×10^2 and $4.7 \times 10^2 \text{ M}^{-1}$. This lowering of K_b values in SDS and triton X-100 when compared to that in aqueous medium may be due to the operation of predominant electrostatic interaction of the cationic complexes with the anionic micelle and the hydrophobic interaction with the neutral micelle. Thus, the nature of the medium plays a vital role in the binding of $[\text{Ru}(\text{dmppy})_3]^{2+}$ complex with gallic acid.

Keywords: Sodium dodecyl sulphate; Triton X-100; Binding constant; Benesi-Hildebrand equation; Electrostatic interaction; Hydrophobic interaction

Introduction

The development of transition metal complexes that target and interact non-covalently with proteins and antioxidants is an emerging field that links inorganic chemistry with chemical and synthetic biology [1]. Among the transition metal complexes ruthenium(II)-polypyridyl complexes have been extensively used as probes in micellar media and the photophysical properties vary enormously with the nature of the surfactant and concentration. Furthermore, the presence of micelle significantly affects the kinetics of chemical reactions. The kinetics of micellar solution is governed by electrostatic and hydrophobic interactions between micelles and reactants. Gallic acid (3,4,5-trihydroxybenzoic acid) is a basic structural unit of hydrolysable tannins widely distributed in the plant kingdom especially in tanniferous plants in conjunction with other important polyphenolic compounds widely used as antioxidants. Gallic acid is a strong chelating agent and forms stable complexes with iron [2]. Based on the literature survey, the present study concentrates on the binding of $[\text{Ru}(\text{dmppy})_3]^{2+}$ complex with gallic acid in SDS and triton X-100 at pH 12.5. In order to know the role of SDS and triton X-100 in this reaction, the observed results are compared with the result obtained from aqueous medium at pH 12.5.

Experimental Section

The complex, $[\text{Ru}(\text{dmppy})_3](\text{BF}_4)_2$ was synthesized by refluxing $\text{RuCl}_3 \cdot 3\text{H}_2\text{O}$ and dmppy according to the procedure previously described [3]. The binding of $[\text{Ru}(\text{dmppy})_3]^{2+}$ complex with various concentrations (2×10^{-4} - 1.4×10^{-4} M) of gallic acid in 0.01M SDS and triton X-100 at pH 12.5 has been studied by absorption spectral techniques. The binding constant (K_b) of the $[\text{Ru}(\text{dmppy})_3]^{2+}$ complex with gallic acid in SDS was determined from the Benesi-Hildebrand equation.

Results and Discussion

The absorption maximum of the $[\text{Ru}(\text{dmppy})_3]^{2+}$ complex in aqueous, SDS and triton X-100 are 457, 450 and 456 nm respectively. The change of medium affects the metal to ligand charge transfer (MLCT) absorption maximum of the complex. In SDS and triton X-100 the MLCT absorption maximum of $[\text{Ru}(\text{dmppy})_3]^{2+}$ complex undergoes hypsochromic shift.

The absorption spectral studies of $[\text{Ru}(\text{dmppy})_3]^{2+}$ complex with the incremental addition of gallic acid shows a slight increase in the MLCT absorption maximum, indicates the formation of ground state complex (Fig. 1). Gallic acid binds with the $[\text{Ru}(\text{dmppy})_3]^{2+}$ complex, since gallic acid has weak absorption close to the region where $[\text{Ru}(\text{dmppy})_3]^{2+}$ complex have strong MLCT absorption [4]. The K_b of $[\text{Ru}(\text{dmppy})_3]^{2+}$ complex with gallic acid in SDS and triton X-100 is calculated from Benesi-Hildebrand plot (Fig. 2).



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SYNTHESIS AND CHARACTERIZATION OF QUERCETIN ENCAPSULATED LAYERED DOUBLE HYDROXIDE (LDH) NANOHYBRID AND THEIR ENHANCED ANTIOXIDANT ACTIVITY

A. Ashely Alex, **V. Christabel Shaji*** and S. Aiiith Simthua

Department of Chemistry, Holy Cross College(Autonomous), Nagercoil- 629 004

Abstract

2D Layered double hydroxide (LDH) nanohybrids intercalated with bioactive molecules have attracted great interests due to their biocompatibility and targeted drug delivery property in Nano medicine. At first, Pristine nitrate-type Zn_2Al -LDH was synthesized via Co-precipitation followed by hydrothermal treatment. For the encapsulation of bioactive molecule, Quercetin with antioxidant property is stabilized into synthesized Pristine LDH nano layer by ion exchange method. The synthesized Quercetin-LDH was characterized by XRD. From XRD studies it was found that Quercetin was completely deprotonated and stabilized in between LDH lattices via electrostatic interaction. The anti-oxidant property was discussed on the basis of DPPH method, and it was found that Quercetin released from the LDH layers aided as an outstanding antioxidants to scavenge DPPH radicals ~80% @ethanol solvent in depending on the concentration level. Therefore, we suggest that, the Quercetin-LDH can be considered as an excellent antioxidant material with potential drug delivery system

Keywords: Layer Double Hydroxide, Quercetin, Antioxidant activity, Biocompatibility

1. Introduction

The most fascinating aspect in the advent of nanotechnology is the invention of layered double hydroxide (LDH) nanomaterial that might rule the Pharmaceutical industry globally in near future. 2D layered resources, LDHs (Layered Double Hydroxides) or anionic clays is lamellar ionic compound containing a positively charged layer and exchangeable anions in the interlayer. They consist of brucite-like layers, and are represented by the general formula $M(II)_{1-x}M(III)_x(OH)_2(A_n)^{-x/n} \cdot mH_2O$ (M: metal, A: anionic classes, m and n: integer, $0 < x < 1$). When a part of M (II) cations in $M(II)(OH)_2$ structure is isomorphically replaced with M(III) ones, the layer of LDHs attains positive layer charge which is remunerated by the anions. Several varieties of biomolecules such as anticancer drugs, antibiotics, vitamins and antioxidants have been combined to LDHs for various biotic applications [1-3]. Drug intercalated LDH are more efficient in penetrating the cells when compared to free drugs maintaining high levels of intracellular drug concentration thereby overcoming multi-drug resistance in cancers [4]. Quercetin(3,3',4',5,7- pentahydroxy-flavone) a plant flavonol with natural antioxidant property is encapsulated into the LDH nano layer by Ion exchange method. Quercetin has radical scavenging potential, therefore, it is capable of preventing cancer induced by oxidative stress [5]. Quercetin are thought to be poorly absorbed in the body, hence when they are encapsulated between the LDH nanolayer they become chemically stable and can be more readily absorbed in the body with the controlled release in a target site.

2. Experiment

2.1 Preparation of pristine Zn_2Al -NO₃-LDH

At first pristine Zn_2Al -NO₃-LDH was prepared under a nitrogen atmosphere, an aqueous solution of $Zn(NO_3)_2 \cdot 6H_2O$ (0.012 M) and $Al(NO_3)_3 \cdot 9H_2O$ (0.006M) was titrated with a 0.5M NaOH solution. The pH of the solutions was adjusted as 7.5-8. The subsequent white precipitate was aged for 1hr, centrifuged, washed with decarbonated water and dried.

2.2 Ion Exchange method for synthesis of Quercetin-LDH nanohybrid

1.06g of Quercetin was dissolved in 50ml ethanol and water (1:1) and the solvent mixture was titrated with 1 M NaOH (pH is maintained at 7) and then added to 50ml of an aqueous interruption comprising 1.0 g Zn/Al LDH precursor sample. In a nitrogen atmosphere, this mixture was vigorously stirred for 24h at room temperature. The subsequent products were washed with a mixed solution of decarbonated water and ethanol (1:1) and then dried.

3. Results and Discussion

3.1 XRD Analysis

LDH structure with basal peaks of planes hkl (003), (006), and (009) reflections confirmed the layered structure of the $Zn-Al$ LDH materials. It is observed from the powder XRD pattern that the basal spacing increases from 0.88nm to 1.46nm after intercalation. It establishes the successful

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Evaluation of Green Synthesized Silver Nanoparticles Mediated by *Laurumnobilis* Extract

X.M. Jinsha and I. LizyRoselet

Department of Chemistry, Holy Cross College (Autonomous) Nagercoil.

Abstract

In the present study, fresh leaves of *Laurumnobilis* have been used for synthesis of silver nanoparticles. In this study, simple and economical procedure was adopted for silver nanoparticles synthesis. *Laurumnobilis* leaf was processed to obtain aqueous extract as a biological material for nanoparticles production. The synthesis was monitored and confirmed by UV-visible spectroscopy and X-ray powder diffraction (XRD). Surface Plasmon Resonance band is obtained at 450 nm and the synthesized particles were 27-80 nm in size. *Laurumnobilis* leaf extract shows strong antibacterial activity against gram positive and gram negative strains. This could be applied in pharmaceutical industry for formulation of new drugs.

Keywords: Silver nanoparticles, *Laurumnobilis*, Surface plasmon resonance, Antibacterial activity

1. Introduction

Silver nanoparticles have attracted much attention due to their unique characteristics for utilizing in various applications including pharmaceuticals, agriculture, etc., [1,2]. Furthermore, their predominant property is their high antibacterial activity against a broad range of bacteria without any toxicity to animal cells [3,4]. The major advantage of using plants for the synthesis of silver nanoparticles is they are easily available, economical, nontoxic and eco-friendly safe to handle and possess a broad changeability of metabolites when may support production.

2. Materials and Methods

2.1 Preparation of leaf extract of *Laurumnobilis*

Freshly plucked leaves of *Laurumnobilis* are taken and crushed using a blender and water is added and again blended. This extract is then filtered. The leaf extract is taken in a beaker and heated up to 20 minutes and cooled. Again the extract is filtered using a Whatman paper No.1.

2.2 Synthesis of silver nanoparticles from *Laurumnobilis*

Aqueous solution of silver nitrate (1 mM) was prepared and mixed with fresh plant extract of *Laurumnobilis* at a ratio of 9:1. This solution was placed on a stirrer with a magnetic pellet in the room temperature at $27 \pm 2^\circ\text{C}$ for 30 minutes. Silver ions are reduced to silver metal of nanodimensional range. During reduction process the temperature was kept at $30-35^\circ\text{C}$.

2.3 Antibacterial Activity -The Kirby-Bauer Method

For the evaluation of antibacterial activity four bacterial strains were selected namely, *Escherichia coli*, *Pseudomonas aeruginosa*, *Bacillus cereus* and *Staphylococcus aureus*.

3. Results and Discussion

3.1 UV-visible spectroscopic studies

The absorption spectrum of *Laurumnobilis* extract shows a peak at 270 nm. The absorption spectrum of the pale yellow – brown silver colloid prepared by *Laurumnobilis* leaf extract reduction showed a Surface Plasmon absorption band with a maximum of 450 nm indicating the presence of spherical or roughly spherical AgNPs (Fig. 1).



Fig. 1 UV-vis spectrum of AgNPs synthesized from *Laurumnobilis* extract

3.2 X-ray Diffraction Analysis

The peaks at $2\theta = 38.215^\circ$, 44.420° , 64.594° , reveal that it is a face centre cubic (FCC) structure (Fig. 2). The discernible peaks can be indexed to (111), (220), (221) planes of a cubic unit cell, which corresponds to cubic structure of silver (JCPDS card No. 89-3722).

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**PHYSICOCHEMICAL PROPERTIES OF 3-ETHOXY-4-HYDROXY BENZALDEHYDE
INCLUSION COMPLEX WITH α -CD**

M. Shilpa Treasa, Assistant Professor, Department of Chemistry, Holy Cross College (Autonomous),
Nagercoil – 629004

J. PremaKumari, Associate Professor, Department of Chemistry, Scott Christian College
(Autonomous), Nagercoil – 629003

Abstract

The present study aims to improve the hydrophilic property of 3-ethoxy-4- hydroxy benzaldehyde (EHB) by complexing with α -CD. The physicochemical properties of the complex were investigated by UV- Visible, Fluorescence and FTIR spectroscopy.

Keywords: EHB, α -CD, complexation, physicochemical property.

Introduction

3-ethoxy-4-hydroxy benzaldehyde (EHB) commonly known as ethyl vanillin is used as an intermediate reagent in the synthesis of many drugs. The effect of α -CD on the absorption and fluorescence spectra of 3-ethoxy-4-hydroxy benzaldehyde have been investigated. The possible inclusion complex and the physicochemical properties of these complex with α -CD are studied.

Material and methods

3-ethoxy-4-hydroxy benzaldehyde and α -CD was purchased from Sigma Aldrich. All other reagents and chemicals were of analytical grade. The liquid inclusion complex and the solid inclusion complex in 1:1 molar ratio were prepared and analyzed by UV-Visible, Fluorescence and Infrared spectroscopy.

Results and discussion

Absorption Study

Table 1, Fig.1 and Fig.2 represents the absorption and fluorescence spectra of 3-ethoxy-4-hydroxy benzaldehyde with varying concentration of α -CD. The inclusion complex formation generally leads to the change of excitation and emission wavelength of the drug [1]. A red shift with an increase in the absorbance and fluorescence intensity is noticed. The association constant (K) for the formation of inclusion complex is determined by using Benesi-Hildebrand equation [2]. The value of K is 143 and 361 for absorption and emission respectively.

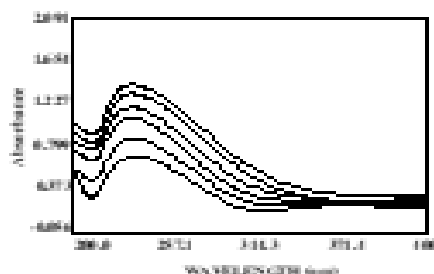


Fig. 1 Absorption spectra of EHB with α -CD

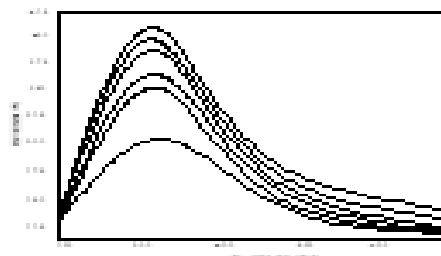


Fig. 2 Emission spectra of EHB with α -CD

Table 1 Absorption and fluorescence maxima of EHB at different concentration of α -CD

α -CD concentration	λ_{max} (nm)	Absorbance	λ_{em} (nm)	Intensity
0	233.0	0.586	327	314.307
0.002	234.5	0.803	332	350.254
0.004	235	0.996	333	362.150
0.006	236.5	1.035	334	381.150

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SYNTHESIS, CHARACTERIZATION AND ANTIMICROBIAL EVALUATION OF NOVEL SCHIFF BASE METAL COMPLEXES

S.M. Rama Devi, Y. Christabel Shaji* and S. Aithi Sindhua

Department of Chemistry, Holy Cross College (Autonomous), Nagercoil – 4.

Abstract

Schiff base ligand obtained by the condensation of Chlorobenzaldehyde with Phenyl hydrazine were complexed with Cu(II) and Ni(II) transition metal ions. Structural features were obtained from their elemental analyses, magnetic susceptibility measurements, molar conductance data, IR, UV-Vis, ¹H-NMR spectral studies and X-ray diffraction study. The UV-Vis and magnetic susceptibility studies suggest an octahedral geometry around the central metal ions. IR data show that the ligand behaves as tetradentate ligand coordinating through both carbonyl oxygen and terminal nitrogen atoms. The molar conductance measurements indicate that the complexes are non-electrolytic in nature. The powder XRD data shows that the complexes are microcrystalline. The antimicrobial activities of ligand and its complexes screened by Disc Diffusion method shows that the metal complexes were more potent than the parent Schiff base ligand against one or more bacterial and fungal species.

Key words: Magnetic Susceptibility, Chlorobenzaldehyde, Spectral studies, Disc Diffusion

1. Introduction

Bioinorganic chemistry usually deals the interaction of inorganic elements with the organism at the molecular level [1]. The interaction between small molecules and biological macromolecules has become an important research topic in bioinorganic chemistry; especially the interaction between transition metal complexes and DNA has aroused the widespread interest [2]. Schiff bases, whose metal complexes are of great interest, have often been employed as chelating ligands in the field of coordination chemistry [3]. They are able to coordinate metals through imine nitrogen and another group, more often than not, linked to aldehyde or ketone. In recent years, studies on the amino acid Schiff bases and their metal complexes are very active. Synthesis, characterization, structure, and thermodynamic and kinetic properties of this kind of compounds have been reported, and their antibacterial, anti-inflammatory, and anticancer activities have been widely studied [4]. Schiff base metal complexes also find diverse applications in industry and daily life. There exist myriad reports on the biological activities of Schiff base ligands and their metal complexes, including their use for enzyme modeling, catalytic activity and their function as antimicrobial, antifungal and antitumor agents [5]. Copper and Nickel are essential trace elements for the human body, and the metalloenzymes play important physiological functions in the organisms. They have been reported to act as anticonvulsant and antiepileptic agents or vitamins and presented antibacterial, antifungal, antimicrobial, antioxidant, and antiproliferative/anticancer activities. Therefore, the research on complexes has attracted more and more attention and become more and more important in the field of bioinorganic and coordination chemistry.

2. Experimental

2.1. Preparation of Schiff Base

Schiff base from phenyl hydrazine under investigation were prepared according to the following procedure. In a 50 ml conical flask, separate solutions were prepared by dissolving (1 g) of chlorobenzaldehyde and (0.75 g) of phenyl hydrazine in 15 ml of ethanol. Mix the chlorobenzaldehyde solution with the amino acid solution. The mixture was stirred for 8 hours on a water bath at 70°C. The obtained precipitate was filtered off and washed with cold ethanol. The solid products were recrystallized from hot ethanol to give yellow crystals, dried in vacuo over silica gel.

2.3. Preparation of Metal Complexes

The preparation of the metal complexes under study were prepared according to procedure previously described in the literature. The Cu(II) complex [CuL₂]·H₂O have been prepared by the reaction of (2 mmole) of ligands with (1 mmole) of Copper (II) nitrate dissolved in (20 ml) absolute ethanol and stirring for 24 hours. The obtained complexes were collected after evaporation of ethanol and was left in the desiccator to be dried under P₂O₅. Similarly the other complexes were also prepared according to the same procedure.

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DNA BINDING NATURE OF RUTHENIUM(II)-BIPYRIDINE-PHENDIONE COMPLEX ON *E. COLI*-GENOMIC DNA

Santhiya S¹ and Sheeba Daniel^{2*}

¹Research Scholar (Reg.No:18213042032009), Department of Chemistry, Holy Cross College (Autonomous), Nagercoil Affiliated to Marianamma Sundaramar University, Tirunelveli, Tamil Nadu, India.

²Department of Chemistry, Holy Cross College (Autonomous), Nagercoil, Tamil Nadu, India.

Email: sheebadaniel@holycrossngl.edu.in

Abstract

The interaction of Ruthenium(II)-bipyridine-phendione complex on isolated *E.coli*-genomic DNA is investigated using UV-VIS spectroscopy. The complex exhibits intercalative binding nature on *E.coli*-genomic DNA. The binding constant (K_b) value of the synthesized complex is calculated and it is found to be $2.79 \times 10^5 \text{ M}^{-1}$. The binding nature of the synthesized complex on DNA in the present investigation actively pursued in relation with the restriction of the synthetic enzymes, DNA-fluorescent probes and various biological foot prints.

Keywords: $[\text{Ru}(\text{bpy})_2(\text{phendione})]^{2+}$ complex, *E.coli*-genomic DNA, DNA Binding, Intercalative mode, Binding Constant

1. Introduction

DNA has received attention in the interaction of transition metal polypyridyl complexes as DNA secondary structural probes and photocleavage reagents. Ruthenium(II) complexes due to the strong DNA-binding and potential anticancer activity currently focus on the DNA binding extensively as the material of inheritance and control for the structure and functions of the cells [1]. Based on the literature survey, the present study focuses on the interaction of $[\text{Ru}(\text{bpy})_2(\text{phendione})]^{2+}$ (bpy = 2,2'-bipyridine and phendione = 1,10-phenanthroline-5,6-dione) complex on *E.coli*-genomic DNA, leads to better binding property which plays a way for applicability in various medicinal and biological field.

2. Methods and Materials

2.1 Materials

$\text{RuCl}_2 \cdot 3\text{H}_2\text{O}$, ligands (2,2'-bipyridine and 1,10-phenanthroline-5,6-dione) and ammonium hexafluorophosphate were procured from Sigma-Aldrich. The complex $[\text{Ru}(\text{bpy})_2(\text{phendione})]^{2+}$ was synthesized by refluxing $[\text{Ru}(\text{bpy})_2\text{Cl}_2] \cdot 2\text{H}_2\text{O}$ with phendione, according to the procedure previously described [2].

2.2 DNA Binding

DNA was isolated from the bacterial source and total DNA concentration was calculated. Equal concentration of *E. coli* genomic DNA (1.5 μg) was incubated with different concentrations (25, 50, 100 $\mu\text{g}/\text{mL}$) of the test samples in phosphate buffer (pH 7.4) and incubated at 37°C for 2 h. After incubation, UV-Vis. spectra were recorded on Aquasys 8000 UV-VIS spectrophotometer (Thermo Scientific) [3].

3. Result and Discussion

The structure of the synthesized complex used in the present study is shown in Fig. 1. The absorption spectrum of $[\text{Ru}(\text{bpy})_2(\text{phendione})]^{2+}$ complex in aqueous medium shows a high energy absorption in the region 284 nm corresponding to the ligand centered $\pi - \pi^*$ transition and the low energy absorption at 438 nm assigned to the $d\pi - \pi^*$ metal to ligand charge transfer (MLCT) transition. The absorption spectrum of the control DNA (1.5 $\mu\text{g}/\text{mL}$) shows a high energy absorption in the region of 215 and 260 nm and a low energy absorption of 423 nm respectively. The binding studies are carried out by varying the concentrations (25, 50 and 100 $\mu\text{g}/\text{mL}$) of the synthesized $[\text{Ru}(\text{bpy})_2(\text{phendione})]^{2+}$ complex against the control *E.coli*-genomic DNA (1.5 $\mu\text{g}/\text{mL}$).

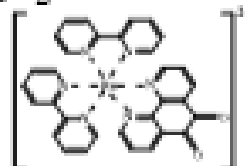


Fig. 1 Structure of $[\text{Ru}(\text{bpy})_2(\text{phendione})]^{2+}$ complex

The binding affinity of the complex is determined by the change in the absorbance of the DNA with the incremental addition of the complex. The addition of 25 $\mu\text{g}/\text{mL}$ of the synthesized

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COAGULATION OF LATEX IN NATURAL RUBBER

Lucky Chandra Paul¹ and Dr. M. Anitha Malbi²¹Reg: No: 18113042032014, Research Scholar, Holy Cross College, Nagercoil, Affiliated to M.S. University, Tirunelveli.²Assistant Professor, Department of Chemistry, Holy Cross College, Nagercoil.

Abstract

The method of coagulating a natural rubber comprises of two forms 1) adding acid and 2) adding bacteria. The influence of coagulation dosage, coagulation temperature and stirring rate on coagulation effect were studied through the analysis of coagulation mechanism of natural rubber latex, the addition of coagulating agent to latex also enables high speed coagulation.

Keywords: coagulation, natural rubber latex.

Introduction

Rubber is an example of an elastomer type polymer, where the polymer has the ability to return to its original shape after being stretched or deformed [1]. The rubber polymer is coiled when in the resting state. The elastic properties arise from its ability to stretch the chains apart, but when the tension is released the chains back to the original position [2].

Natural rubber also called India rubber is an elastomer (an elastic hydrocarbon polymer) that was originally derived from latex, a milky colloid produced by some plants. The plants are tapped by making an incision in the bark of tree and collecting the sticky, milk- coloured latex sap which is refined into usable rubber. The purified form of natural rubber is the chemical isoprene [3].

Natural rubber is an addition polymer that is obtained as a milky white fluid known as latex from a tropical rubber tree. Natural rubber is from the monomer isoprene (2- methyl-1,3- butadiene) [4].



Coagulation of latex

The milky fluid obtained from tapped rubber trees is called latex. It consists of an aqueous suspension of colloidal rubber particles. Each rubber particle is made up of rubber polymers covered by a layer of protein membrane making each rubber particle negatively charged. The negatively charged rubber particles repel each other, preventing themselves from combining and coagulating.



Fig. 1 Negatively charged rubber particle repel each other

Process of Coagulation

1. Addition of acid
2. Addition of bacteria

1. Addition of Acid

Acid such as (methanoic acid, ethanoic acid, formic acid) are added to make the latex coagulate. Hydrogen ions from the acid neutralize the negative charges on the surface of the membrane. A neutral rubber particle is formed. When these neutral particles collide with the membrane, neutral rubber particle is formed. When these neutral particles collide with each other, their outer membrane layers break up [5]. The rubber polymers are set free. The

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**SYNTHESIS AND CHARACTERIZATION OF SILVER
NANOPARTICLES USING *MANGIFERA INDICA* SEED EXTRACT AND
THEIR BIOLOGICAL ACTIVITY**

B.T. Delma¹, Dr.M.Anitha Malbi²

¹Research scholar (Reg.No:18123042032016), Department of Chemistry, Holy Cross College (Autonomous), Nagercoil, Affiliated to Manonmanium Sundaranar University, Tirunelveli.

²Assistant Professor, Department of Chemistry, Holy Cross College, Nagercoil.

Abstract

Environment friendly methods for synthesis of silver nanoparticle become a valuable method in the current scenario. The utilization of phytochemicals from plant extract has become a unique skill for the synthesis of nanoparticles as they possess dual nature of reducing and capping agent to the nanoparticles. In the present study silver nanoparticles were synthesized by using *Mangifera indica seed* extract as reducing and capping agent. The formation of nanoparticles is identified by the change of colour from colourless to yellow. The formed nanoparticles were characterized by UV-Vis, FT-IR, XRD, SEM and EDAX analysis. XRD shows the nanoparticles are crystalline in nature and average grain size of the nanoparticle is 30nm. FT-IR analysis shows that functional groups of *Mangifera indica* extract capping in silver nanoparticles and it has notable biological properties.

Key words: Silver nanoparticles, *Mangifera indica extract*, Biological property



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**PHOTOCATALYTIC DEGRADATION OF MALACHITE GREEN AND
RHODAMINE-B USING TITANIUM DIOXIDE AND SILVER
NANOPARTICLES**

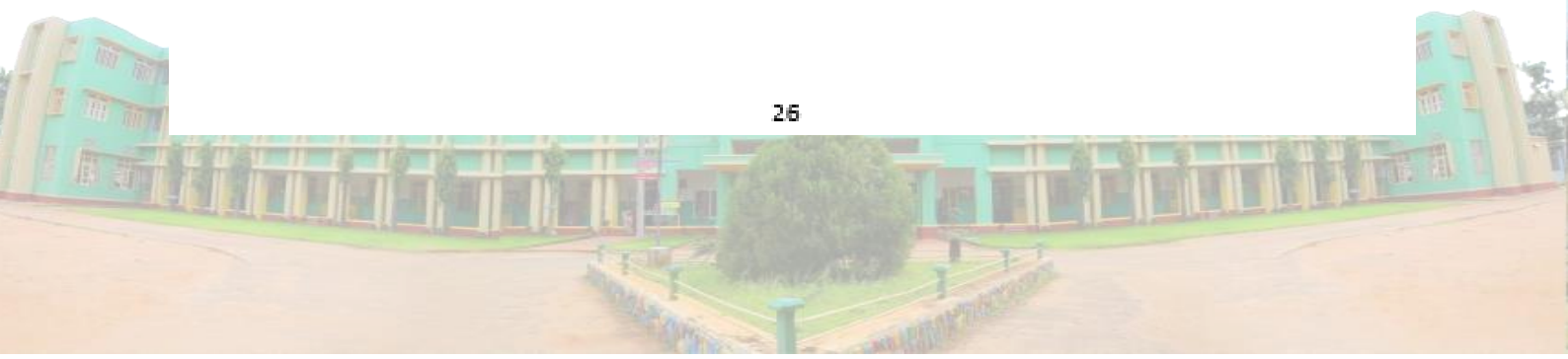
T. Ajitha and Sheeba Daniel*

Department of Chemistry, Holy Cross College (Autonomous), Nagercoil-629004

Abstract

The present investigation focuses on the photocatalytic activity of titanium dioxide and silver nanoparticles (Ag NPs) on the degradation of malachite green and rhodamine-B dyes. Silver nanoparticles are synthesized using gooseberry extract. The synthesized Ag NPs are characterized by UV-Visible and FT-IR spectroscopy. The nature and the particle size of Ag NPs are determined using XRD analysis. The photocatalytic activity of the titanium dioxide and Ag NPs are examined on malachite green and rhodamine-B dyes under visible light illumination. The rate of photodegradation and degradation efficiency of malachite green using titanium dioxide nanoparticles are $7.04 \times 10^{-3} \text{ sec}^{-1}$ and 50 %. The rate of photodegradation and degradation efficiency of malachite green using Ag NPs are $1.18 \times 10^{-2} \text{ sec}^{-1}$ and 69.23 %. Malachite green undergoes photodegradation in the presence of titanium dioxide and Ag NPs and it acts as a catalyst for the degradation of malachite green. Rhodamine-B does not undergo photodegradation in the presence of titanium dioxide and Ag NPs. The absorption kinetics of the dye follows the pseudo-first order mechanism. Thus, the photodegradation proposed in this study may shed some light on future applications for the decolouration of dyes.

Keywords: Malachite green; Rhodamine-B; Photocatalytic degradation; Degradation efficiency.



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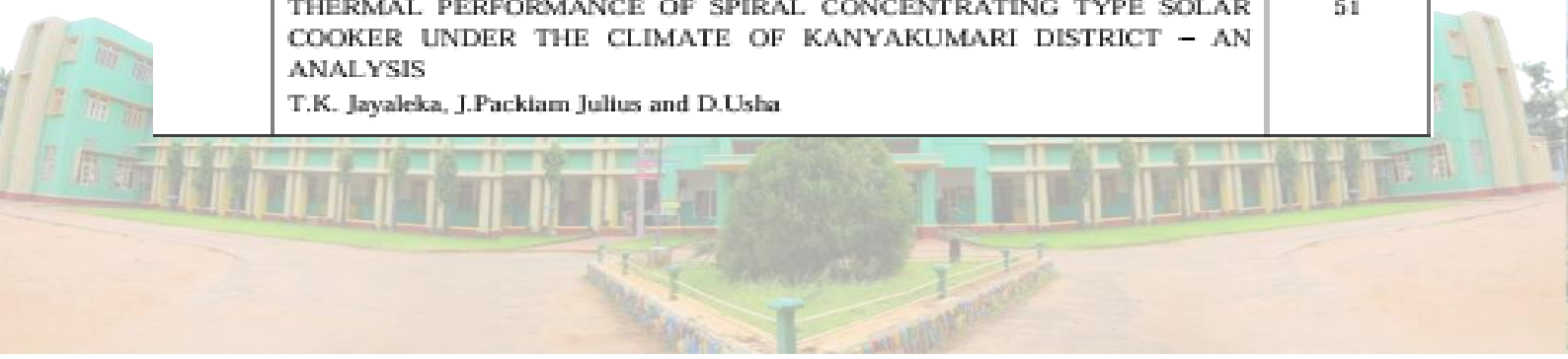


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**BIOLOGICAL EVALUATION OF NOVEL Cu (II), Ni (II) AND Zn (II)
TRANSITION METAL COMPLEXES OF NNO FUNCTIONALIZED
SCHIFF BASE LIGANDS FROM CINNAMALDEHYDE AND
SEMICARBAZIDE**

S. Ajith Sinthuja and Y. ChristabelShaji

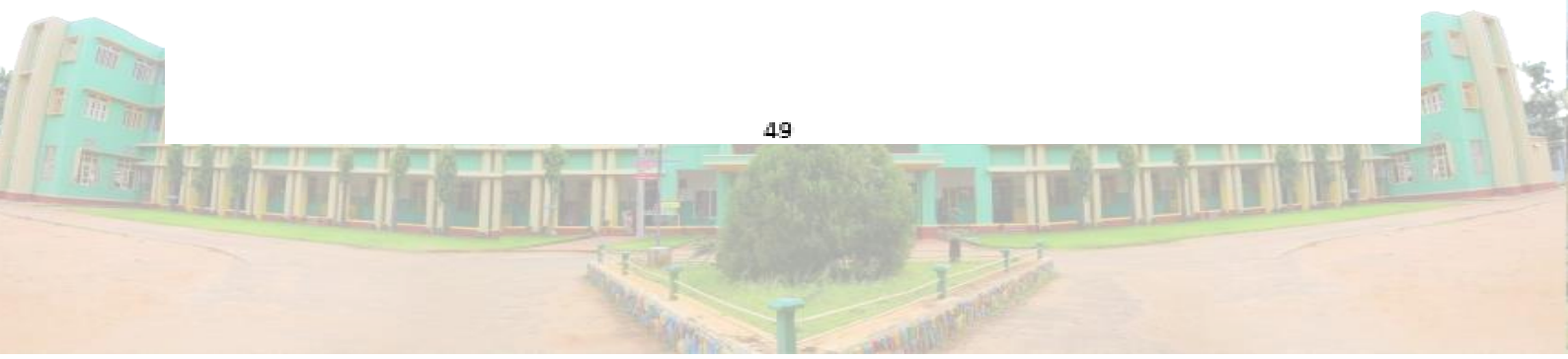
Department of Chemistry, Holy Cross College (Autonomous), Nagercoil –
629004.

E-mail: ajithsinthuja22@gmail.com

Abstract

Schiff base ligand obtained by the condensation of cinnamaldehyde with semicarbazide were complexed with Cu (II), Ni (II) and Zn (II) transition metal ions. Structural features were obtained from their elemental analyses, magnetic susceptibility measurements, molar conductance data, IR, UV-Vis, ¹H-NMR spectral studies and X-ray diffraction study. The UV-Vis and magnetic susceptibility studies suggest an octahedral geometry around the central metal ions. IR datas show that the ligand behaves as tetradentate ligand coordinating through both carbonyl oxygen and terminal nitrogen atoms with, 1:2 [M: L] ratio. The molar conductance measurements indicate that the complexes are non-electrolytic in nature. The powder XRD data shows that the complexes are microcrystalline. The biological activities of ligand and its complexes show that the metal complexes were more potent than the parent Schiff base ligand.

Key words: Magnetic Susceptibility; Octahedral; Spectral studies; biological activities



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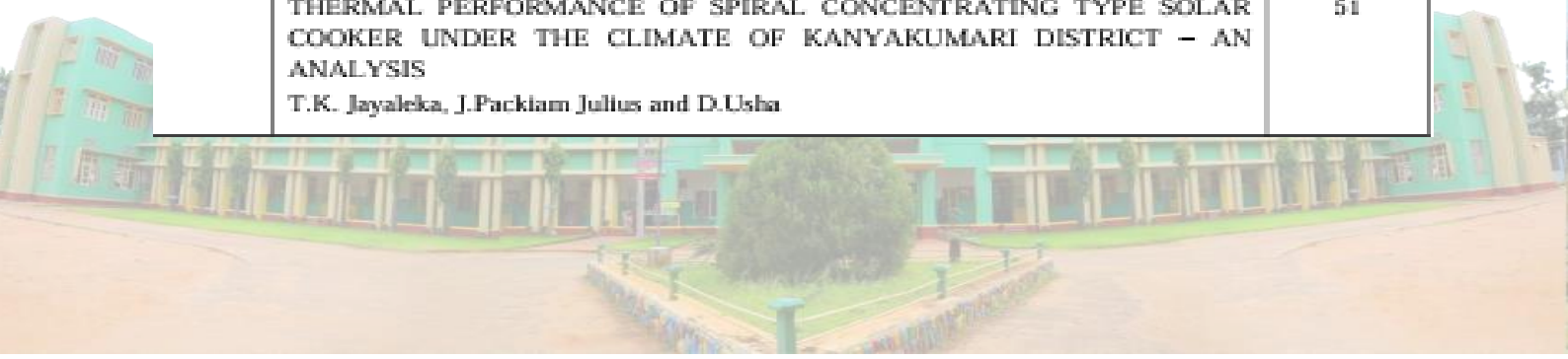


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CONTAMINATION OF HEAVY METALS IN THE SEDIMENTS OF COIR-RETTING AREAS

R. GladisLatha¹, D. VethaRoy²

¹Department of Chemistry, HolyCrossCollege, Nagercoil.

²Department of Chemistry and Research Section, Scott Christian
College, Nagercoil.

Abstract

Retting of coconut husk has adverse impacts on the ecosystem and retting ground has revealed extensive damage to the environment. It is brought out by the pectinolytic activity of micro organisms like bacteria, fungi and yeast, releasing large quantities of pectin, pentosan, poly phenols, tannins and heavy metals. In the retting zones, the chemical environment of the water and the bottom sediments differs significantly from the areas of retting-free activity. The distribution of heavy metals in soil, water and environment are increasing at an alarming rate causing deposition and sedimentation in water reservoirs affecting aquatic organisms and living beings. The concentration of metals varies with seasons and locations. The paper evaluates the variation of heavy metals in the retting sediments associated with clay and organic carbon. Iron is predominant in the retting zones which exists in the form of sulphide and gives black colour to the retting sediments. Iron and manganese form a sediment phase in the form of oxides and iron exists in two oxidation states (Fe^{2+} and Fe^{3+}). In sediments, Fe^{3+} oxidizes organic matter, getting reduced to Fe^{2+} which aerobically gets oxidized to Fe^{3+} . Zinc is adsorbed along with the clay fractions and it is accumulated in the organic layer of the sediments. Zinc sulphide is the most dominant form of zinc in anoxic sediments. In oxidizing environments, copper is likely to be more soluble than under reducing conditions.

Keywords: Retting, sediment, pectinolytic, significantly, pentosan



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INVITRO ANTIPROLIFERATIVE AND CYTOTOXIC EVALUATION OF RUTHENIUM(II)-PHENANTHROLINE-PHENDIONE COMPLEX

Santhiya. S¹ and Sheeba Daniel^{2*}

¹Research Scholar (Reg.No:18213042032009), Department of Chemistry, Holy Cross College (Autonomous), Nagercoil. Affiliated to Manonmanium Sundaranar University, Tirunelveli, Tamil Nadu, India.

^{2*}Department of Chemistry, Holy Cross College (Autonomous), Nagercoil, Tamil Nadu, India.

Email: sheebadaniel@holycrossngl.edu.in

Abstract

The *invitro* antiproliferative and cytotoxic effects of $[\text{Ru}(\text{phen})_2(\text{phendione})]^{2+}$ (phen = 1,10-phenanthroline and phendione = 1,10-phenanthroline 5,6-dione) complex is evaluated on SK-MEL-28 melanoma and normal L6 cell lines using MTT assay and double staining method. The antiproliferative and cytotoxic effects determined using MTT assay method on both the cell lines decreases with increase in concentration of the complex. The IC_{50} value of this complex against the SK-MEL-28 cell and normal living L6 cell line is found to be 52.648 and 90.974 $\mu\text{g}/\text{mL}$ respectively. Apoptosis determination using double staining method followed by Fluorescent microscopic images predicts that the synthesized $[\text{Ru}(\text{phen})_2(\text{phendione})]^{2+}$ complex shows late apoptotic effect when treated on SK-MEL-28 cells and exhibit early apoptotic effect on normal L6 cells. The apoptotic character $[\text{Ru}(\text{phen})_2(\text{phendione})]^{2+}$ complex is due to the chromatin condensation of both cancerous and normal cells by the DNA binding dyes. The complex exhibits no cytotoxic effect when tested against normal L6 cell line. The results revealed that the synthesized $[\text{Ru}(\text{phen})_2(\text{phendione})]^{2+}$ complex shows good anti-skin cancer effect on SK-MEL-28 cell line and no cytotoxicity on L6 cell line. Thus, the synthesized complex can be therefore suggested as an effective anti-skin cancer drug.

Keywords: $[\text{Ru}(\text{phen})_2(\text{phendione})]^{2+}$ complex, SK-MEL 28 cell line, L6 cell line, *Invitro* Antiproliferative effect, Cytotoxicity, Apoptosis, Anti-skin cancer drug.



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SYNTHESIS AND CHARACTERIZATION OF NOVEL AROMATIC POLY (ESTER-IMIDE) S CONTAINING BULKYPENDANT GROUPS

Y. Christabel Shaji and S.AjithSinthuja

Department of Chemistry, Holy Cross College (Autonomous), Nagercoil.

Abstract

Novel poly (ester-imide) s were prepared by the rapid polycondensation reaction of tetrimide- diacid chloride with aromatic diols. The tetrimide- diacid chloride was synthesized by a three-step reaction. Initially, 4-chloro benzaldehyde was reacted with 2,6-dimethylaniline to form bis(4-amino-3,5-dimethylphenyl) 4'bromophenyl methane. A condensation reaction of one equimolar of newly synthesized diamine with two equimolar pyromellitic dianhydride and *p*-amino benzoic acid led to the formation of tetrimide-dicarboxylic acids. Finally the diacid was converted to tetrimide diacid chlorides by a reaction with thionyl chloride. The synthesized polymers were characterized by elemental analysis, FT-IR, ¹H-NMR and UV- visible spectroscopy. The properties of the poly(ester-imide) s such as thermal stability, inherent viscosity and solubility were also studied. The poly(ester-imide) s exhibited excellent solubility in some polar organic solvents. From differential scanning calorimetry, the polymers showed glass-transition temperatures between 262 and 346°C. Thermal behaviors of the obtained polymers were characterized by thermogravimetric analysis and the 10% weight loss temperatures of the poly(ester-imide) s were found to be in the range between 451 and 482 °C in nitrogen. Furthermore, crystallinity of the polymers was estimated by means of wide-angle X-ray diffraction. The newly synthesized poly(ester-imide) s exhibit high thermal stability, good solubility and processability.

Keywords: 4'-bromobenzaldehyde, tetrimide-dicarboxylic acids, pyromellitic dianhydride, tetrimidediacid chloride, poly (ester-imide) s, inherent viscosity.



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An Anthology of Modern English Poetry

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GREEN TO ASHES!!!!!!

ASHES TO GREEN!!!!!!

God created the world of green
With never ending dazzling gleem
Which the man could never dream
Man enjoy the scene and bleam
With a great harvest of glean
And praise the lord in ecstatim
Brightness of blue sky with sun and moon
Twinkling stars and lighting moon
Colourful rainbows with thunders and rain
Which all can watch without bothers
Strong waves with deep sea
Moving waters in the stream
Holding water in the pond
Creatures in the water with blissness
It's a good looking environment
Flying birds of various colours and hums
Variety of fauna arrounding everywhere
Colourful insects dancing around
Plants trees creepers and grasses
All greens with a specific reason
Without which we are all in treason
Flora with antimicrobial property
Blessed with healing potentials
Nourished with nutritious qualities

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Advancements of Biological Sciences

KNOW ABOUT SRY GENE.....

J. Albino Wins and Murugan. M*

Department of Botany, Holy Cross College (Autonomous), Nagercoil – 4
(Affiliated to Manonmaniam Sundaranar University, Abishekapatti,
Tirunelveli District)

*Department of Bio Medical Sciences, Noorul Islam Centre for Higher
Education, Kumaracoil, Tamil Nadu.

winsbt@gmail.com

The SRY gene (Sex Determining Region on Y Chromosome) possess a simple structure, with only one exon and no introns. The 5' flanking sequence has no TATA or CAAT boxes. It is rich in GC content and has two tandem Sp1 recognition sites. This sequence has the ability to modulate transcription process. The transcribed region consists of 841 bp, which results in a transcript of 1.1 kb. But, the translated region has 612 bp, that produce a protein of about 204 amino acids, with a molecular weight of 23.9 kDa. The SRY gene is flanked by two important regions that are rich in adenine- and thymidine-containing inverted repeat sequences. This gene has its origin in the reposition of transcript during evolution. The coding region of HMG box is located in the center of the SRY gene, at amino acids 57 to 137 of the protein. There will be difference in the copy number of Sry/SRY, the copy number of the surrounding flanking DNA. The SRY gene implies specifically important instructions for making a strong protein known as sex-determining region Y protein.



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Advancements of Biological Sciences

ALAMAR BLUE ASSAY IN MYCOBACTERIAL DRUG SCREENING

J. Albino Wins and Murugan. M*

Department of Botany, Holy Cross College (Autonomous), Nagercoil
(Affiliated to Manonmaniam Sundaranar University, Abishekapatti,
Tirunelveli District)

*Department of Allied Health Sciences, Noorul Islam Centre for Higher
Education, Kumaracoil, TamilNadu.

winsbt@gmail.com

In the present scenario, Tuberculosis (TB) is the major cause of death, and treatment of this severe disease faces many new challenges due to the multidrug-resistance ability of *Mycobacterium tuberculosis*. Some of the drugs like isoniazid (INH), rifampin (RIF), ethambutol (EMB), and pyrazinamide (PZA), were highly recommended because of its effectiveness. With a great necessity of developing novel antimicrobials, in improving the earlier treatment for tuberculosis, to overcome multidrug-resistance of tuberculosis, and to highlight the presence of latent bacilli in the population all over the world, there is an emergency need for a rapid and low-cost assay, to screen new drugs. Dr. Scott Franz of Hansen pioneered the Alamar Blue based drug susceptibility testing in *Mycobacterium tuberculosis*. The commercial colorimetric method is a simple method, in which oxidation – reduction dyes like Tetrazolium have been used to determine drug susceptibility measurements for bacteria, including *Mycobacteria*. In response to the need for rapid, inexpensive, high throughput assays for antimycobacterial drug screening.





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NATURE AND ENVIRONMENTAL PERSPECTIVE OF COVID-19

J.Albino Wins

Department of Botany,
Holy Cross College (Autonomous), Nagercoil – 4
(Affiliated to Manonmaniam Sundaranar University,
Abishekapatti, Tirunelveli District)

Murugan.M

Department of Allied Health Sciences,
Noorul Islam Centre for Higher Education,
Kumaracoil, TamilNadu.

Abstract

Lot of sudden changes modulate the world, in which, there is green changes in the environment. As the Government ensures strict lockdown, almost transportation, theaters, bars, malls and public places were closed. Railways and flights were blocked. All these changes make unexpected consequences. Due to the shut down of factories and industries, there is a great drop in carbon emission. So, the level of air pollution comes down. Airborne pollutants like CO₂, CO and nitrous oxides have fallen. The energy consumption profiles were disturbed. As most of the people are working from home, domestic energy consumption rises quickly. Water bodies were clear and almost many new varieties of aquatic animals were visible.

Key Words : Covid -19, Nature, CPCB, Ecosystem, Environment.

Introduction

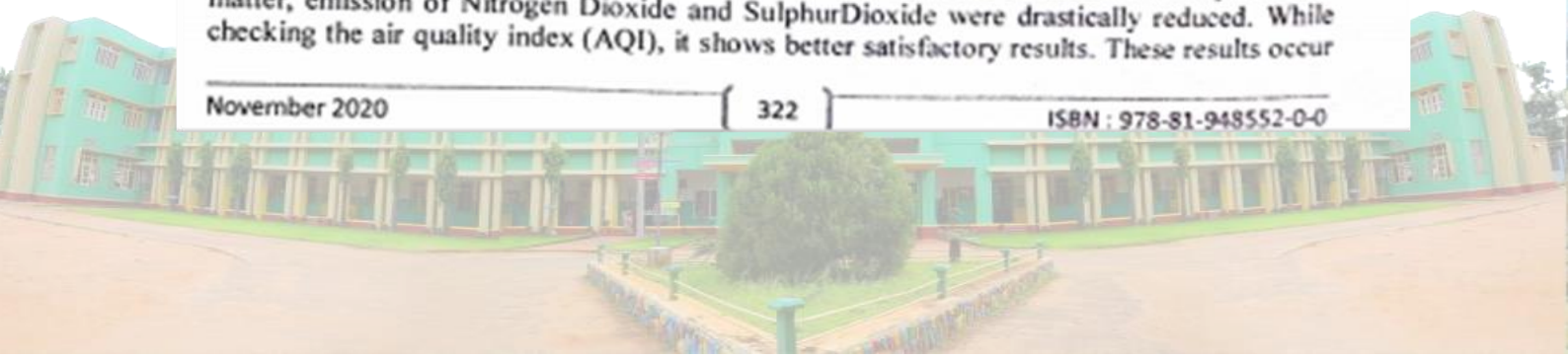
Covid – 19 has altered almost many countries like China, Taiwan, Italy, USA, France, Spain, Turkey, Iran, Germany, Korea, United Kingdom, India, Australia etc. with a prolonged lockdown. This continuous lockdown shut down the transport facilities, all industries, nuclear power plants, construction sites in factories and residents, road activities, railway activities, airway activities, hotels and resorts, malls and theaters, burning of coals etc. Most of these activities have a direct relationship towards polluting the air. But, due to the complete arrest of these processes, there are tremendous changes in our earth with circulation of pure air. A complete change has been noted in the quality of air. The sudden changes in the environment witnessed a great improvement in the quality of air and water.

Recovering of Nature

As there is no emission of green housegases, release of toxic pollutants and wastes from factories and industries, the environment starts plenishing with purity. There are noticeable changes in villages, cities, towns etc with respect to air pollution. Quality of air has been improved a lot. Nature is recovering again as human beings stays at home. We can see blue sky with moving clouds, attractive rainbows, blizzing breeze, many new arrivals of insects, birds, animals, plants and trees with fast growth, and mainly a pure environmental condition.

Data of CPCB

According to Central Pollution Control Board (CPCB), the concentration of particulate matter, emission of Nitrogen Dioxide and SulphurDioxide were drastically reduced. While checking the air quality index (AQI), it shows better satisfactory results. These results occur



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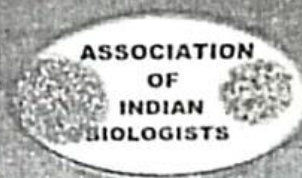
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**SURVEY ON WETLAND PLANTS OF PERIYAKULAM POND IN VALLIOOR,
TIRUNELVELI DISTRICT, SOUTH INDIA**

J. Albino Wins, Selvanandhini.T and N.Nishanthi

Department of Botany, Holy Cross College (Autonomous), Nagercoil – 4

(Affiliated to Manonmaniam Sundaranar University, Abishekapatti, Tirunelveli District)

ABSTRACT:

The biodiversity survey on wetland plants in the village area envisaged exploration and documentation of the plant diversity of Periyakulam pond in Tirunelveli district. The present investigation explores the enumeration of plant species, floristic analysis of taxa. The study is the result of intensive exploration carried out during the September 2020-October 2020 (2 months). In the present study, a total number of 26 vascular plant species were recorded.

KEYWORDS:

Wetland plants, Periyakulam pond, Taxonomy, Vascular plants.

INTRODUCTION

Aquatic and wetland plants are mostly confined to the marshes and wetland habitats (Cowardianetal., 1979). Although wetlands cover only six percent of the earth's surface (Mitschet al.,1993), they provide habitats for about 20 percent of the earth's total biological diversity (Gopal 1995 ; Les et al., 1995). Wetland supports plant species intermediate between true aquatic and terrestrial habitats (Banerjee and Venu, 1994).Wetland ecosystems typically show three characteristic ecological conditions, all of which are potential stressors for plant survival and growth: periodic to continuous periodically anoxic (hydric soils); and hydro soils with rhizospheres experiencing periods of low or no oxygen availability (Craft et al., 2005). Freshwater ecosystems refer to ponds, lakes, springs, streams, rivers and wetlands. They are one of the most productive ecosystems of the world and are rich storehouse of floral and faunal diversity (Guliaet al., 2017). The first and foremost process in appreciating the biodiversity is the taxonomic treatment of living organisms. Without appropriate knowledge of the exact species composition, it will become very difficult to identify and implement conservation priorities for

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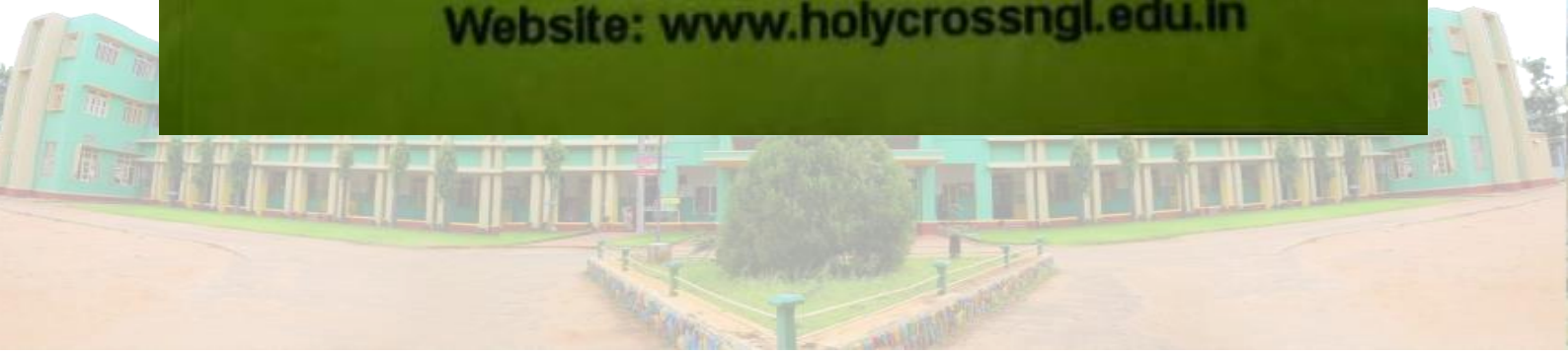
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**MEDICINAL PLANTS USED AGAINST SNAKE BITE IN AGASTHEESWARAM TALUK,
KANYAKUMARI DISTRICT, TAMILNADU, SOUTHERN INDIA.**

Jerlin Deletta. G^{1*} and B. Parthipan²

¹Assistant Professor, Department of Botany, Holy Cross College (Autonomous), Nagercoil-4, Tamilnadu, India. (Affiliation of Manonmaniam Sundaranar University, Abishekapatti, Tirunelveli - 627 012, Tamilnadu, India.)

²Associate Professor, P.G& Research Department of Botany, S.T.Hindu College, Nagercoil-2.

Email: jerlindeletta@gmail.com

ABSTRACT:

Kanyakumari District consists of four taluks Agastheeswaram, Kalkulam, Thovalai and Vilavancode. People of this taluk traditionally are co-existing with their native environment and depend on plants and plant products for health and treatment of diseases. Snake bite is the dangerous ailments affecting the citizens. An ethnobotanical survey of Plants used by the traditional healers for the treatment of snake bite was conducted in the Agastheeswaram Taluk. A total of 26 plants belonging to 26 genera and 19 families have been documented for their therapeutic use against snake bite. The study indicates that the local inhabitants rely on medicinal plants for treatment. This paper suggests that further clinical experimentation is needed to scientifically evaluate these widely used herbal remedies for possible bioactive effects.

Keywords: Ailments, Snake bite, Medicinal plants, Agastheeswaram.

Introduction

Nature has blessed us with enormous wealth of medicinal plants which are widely distributed all over the world as a source of therapeutic agents for the prevention and cure of various diseases. This is attracting the attention of several botanists and plant scientists who directing vigorous researches towards the discovery or rediscovery of several medicinal remedies for various diseases. Several workers Usha rani and Jayanthi (2016), Anghore *et al.* (2015), Johnsy *et al.* (2012), Kingston *et al.* (2009), Ayyanar *et al.* (2008) were reported the utility of plants for the treatment of various diseases. Global Health Research gives an estimate of 46,000 annual deaths by snakebite in the country whereas the Government of India's Central Bureau of Health Intelligence reports only 1,350 deaths each year for the period 2004 to 2009. This massive statistical disparity has important and urgent implications. All are widely distributed throughout India. Present study is aimed to focus the medicinal plants which are used in the treatment of snake bite in Agastheeswaram Taluk, Kanyakumari District.

Materials and Methods

Kanyakumari district is comprised of four Taluks namely, Agastheeshwaram, Thovalai, Kalkulam and Vilavancode. In Agastheeswaram Taluk 21 towns and 19 villages were located, Out of these only 12 areas were selected for the present study viz., Agastheeswaram (N 8° 5.290' - E 77° 30.979'), Azhagapuram (N 8° 9.047' - E 77° 34.613'), Eraviputhoor (N 8° 10.224' - E 77° 29.791'), Kanyakumari (N 8° 6.619' - E 77° 32.397'), Kottaram (N 8° 7.167' - E 77° 30.644'), Kulasekarapuram (N 8° 8.694' - E 77° 29.880'), Marungoor (N 8° 11.709' - E 77° 30.044'), Nagercoil (N 8° 11.857' - E 77° 26.903'), Suchindrum (N 8° 8.852' - E 77° 27.435'), Thengamputhoor (N 8° 7.132' - E 77° 27.448'), Theroor (N 8° 10.922' - E 77° 27.406') and Thirupathisaram (N 8° 12.422' - E 77° 27.422')



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IVCRTI S-01	<p>Endophytic Fungal Strain Isolation and Characterization from the Leaves and Tree Barkings of Manakudi Mangroves</p> <p>J.Albino Wins¹ and M.Murugan^{2*}</p> <p>¹<i>Department of Botany, Holy Cross College (Autonomous), Nagercoil, Tamilnadu</i> ²<i>Department of Allied Health Sciences, Noorul Islam Centre for Higher Education, Ramaracoil, Tamilnadu</i> <i>winsbt@gmail.com</i></p>
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ABSTRACT

Mangroves of South and Southeast Asia comprises of about 41.4% of the global mangroves. Mangroves are unique forests representing the intermediate vegetation between land and sea, which grow in oxygen deficient water logged soils. Fungi are one of the most important microbial components present in the soil. Endophytic fungi usually live internally within various tissues of a host plant. They live in tissues without causing any negative side effects to the host plant. When a host plant harbors the endophytic microbes, their concurrence may help the host to adapt to biotic and abiotic stress factors. These endophytic fungi are regarded as a new sources for producing novel active compounds, biological activity, and biotechnological developments. In this present investigation, the endophytic fungi present in mangrove ecosystem was characterized. Leaves and tree barkings were collected and ten fungal genera were identified based on morphological and cultural characteristics. *Aspergillus* sps were found to be the dominant among the various fungal species isolated from the mangrove ecosystem.

KEYWORDS: *Mangrove ecosystem, Tree barkings, Microorganisms, Endophytes, Fungal isolates, Aspergillus sps.*

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**SURVEY ON WETLAND PLANTS OF PERIYAKULAM POND IN VALLIOOR,
TIRUNELVELI DISTRICT, SOUTH INDIA**

J. Albino Wins, Selvanandhini.T and N.Nishanthi

Department of Botany, Holy Cross College (Autonomous), Nagercoil – 4

(Affiliated to Manonmaniam Sundaranar University, Abishekapatti, Tirunelveli District)

ABSTRACT:

The biodiversity survey on wetland plants in the village area envisaged exploration and documentation of the plant diversity of Periyakulam pond in Tirunelveli district. The present investigation explores the enumeration of plant species, floristic analysis of taxa. The study is the result of intensive exploration carried out during the September 2020-October 2020 (2months). In the present study, a total number of 26 vascular plant species were recorded.

KEYWORDS:

Wetland plants, Periyakulam pond, Taxonomy, Vascular plants.

INTRODUCTION

Aquatic and wetland plants are mostly confined to the marshes and wetland habitats (Cowardianetal., 1979). Although wetlands cover only six percent of the earth's surface (Mitschet al.,1993), they provide habitats for about 20 percent of the earth's total biological diversity (Gopal 1995 ; Les et al., 1995). Wetland supports plant species intermediate between true aquatic and terrestrial habitats (Banerjee and Venu, 1994).Wetland ecosystems typically show three characteristic ecological conditions, all of which are potential stressors for plant survival and growth: periodic to continuous periodically anoxic (hydric soils); and hydro soils with rhizospheres experiencing periods of low or no oxygen availability (Craft et al., 2005). Freshwater ecosystems refer to ponds, lakes, springs, streams, rivers and wetlands. They are one of the most productive ecosystems of the world and are rich storehouse of floral and faunal diversity (Guliaet al., 2017). The first and foremost process in appreciating the biodiversity is the taxonomic treatment of living organisms. Without appropriate knowledge of the exact species composition, it will become very difficult to identify and implement conservation priorities for



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**EVALUATION OF DRUG SUSCEPTIBILITY WITH ALAMAR BLUE IN
MYCOBACTERIUM TUBERCULOSIS**

J. Albino Wins and M. Murugan

Department of Botany, Holy Cross College (Autonomous), Nagercoil – 4

(Affiliated to Manonmaniam Sundaranar University, Abishekapatti, Tirunelveli District)

*Department of BioMedical Sciences, Noorul Islam Centre for Higher Education, Kumaracoil,
Tamil Nadu.

E.mail Id:winsbt@gmail.com

ABSTRACT:

Tuberculosis is a chronic disease, which is posing a serious threat in all parts of the world. Since front line drugs and second line drugs were adapted as antituberculosis drugs, there is a serious threat of increasing incidence of drug resistant strains and it emerged all over the world. Thus treatment of TB is an important event and without the information on susceptibility to drugs which makes the treatment failure. Thus prompt diagnosis and appropriate therapy for the detection of drug resistance is needed. Among various types of techniques, Alamar Blue assay is an sensitive method in which results can be identified visually within few days.

KEYWORDS:

Tuberculosis, Alamar Blue assay, Drug resistance, Antibiotics.

INTRODUCTION:

Today, as it has been for centuries, tuberculosis remains the leading cause of death in the world. The disease is now the world's foremost cause of death from the single infectious agent. Mycobacterium tuberculosis is the sensitive index of a nation's poverty. Currently, the disease is chronic, slowly debilitating and pose a serious threat to the health in developing and developed countries. Tuberculosis is a re-emergent problem in many industrialized countries¹.

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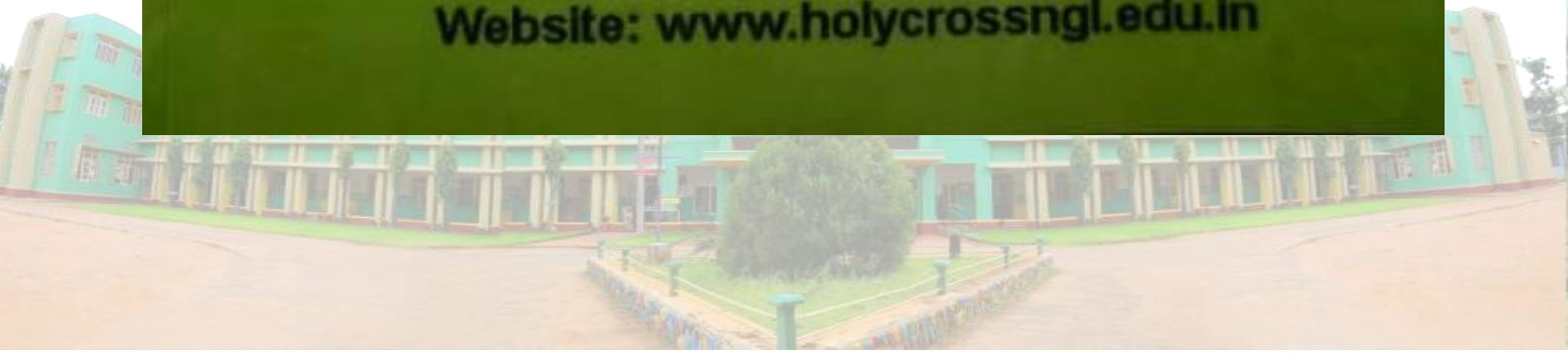
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Length - Frequency Analysis of *Sardinella gibbosa* (Bleeker, 1849) of Kovalam Coast, Kanyakumari, Tamilnadu

¹Antilda, J., ²Mary Mettilda Bai, S. and ³Vinoliya Josephine Mary, J.

¹Research Scholar (Reg No: 18T13042192014),

²Assistant Professor Department of Zoology, Holy cross college (Autonomous), Nagercoil - 629004

Affiliated to Manonmaniam Sundaranar University, Tirunelveli, Tamilnadu.

E. Mail: antildaxavier1981@gmail.com; metti.silvester@gmail.com

Introduction

Sardines commonly called 'Chalai' have widely used as animal protein by fish consuming population. The market prize of sardine is comparatively cheaper than other fishes. There are many species of sardines available throughout the world. Among them, *Sardinella gibbosa* has high nutritional and high market value. A length measurement is fundamental to many aspects of fisheries science as it is used to analyze the reproductive potential of any stock [1]. Hence this investigation was carried out to analyze the length of *S. gibbosa*, collected using gill nets from Kovalam coast of Kanyakumari District for a period of six months.

Materials and method

This study was undertaken from April to September 2019 at the fish landing centre, Kovalam, Kanyakumari. The length of the fish *S. gibbosa* was taken to the nearest 0.1 cm using a fish measuring board made up of glass. The total length (TL) of the fish was measured from the tip of the snout of the fish, with the mouth closed, to the tip of longest caudal fin ray, while the standard length (SL) is taken as the distance from the tip of the snout of the fish, with the mouth closed, to the end of silvery color in caudal peduncle [2]. The data (TL) from sampling were grouped into length classes of 1 cm interval for subsequent analysis. A total of 300 *S. gibbosa* were analyzed.

Results and Discussion

Total length vary from 10.5 cm to 16 cm. The length frequency distribution shows a prominent peak of total length range from 13.5 cm to 14 cm over others. Fishes below 12 cm and above 15 cm were not found in month of April. A gradual progress in the length of the fish was observed from June to September as evident from the mode i.e., 12.5 cm in June, 13 cm in July and 14 cm in September (Figure 1). This indicating an average of 0.5 cm growth per month in this fish. From this study it could be concluded that, information on biology of fish can be acquired by length study also [3]. Month wise study also showed a decline in the number of particular size of the fish. This may be due to removal of fish by catches



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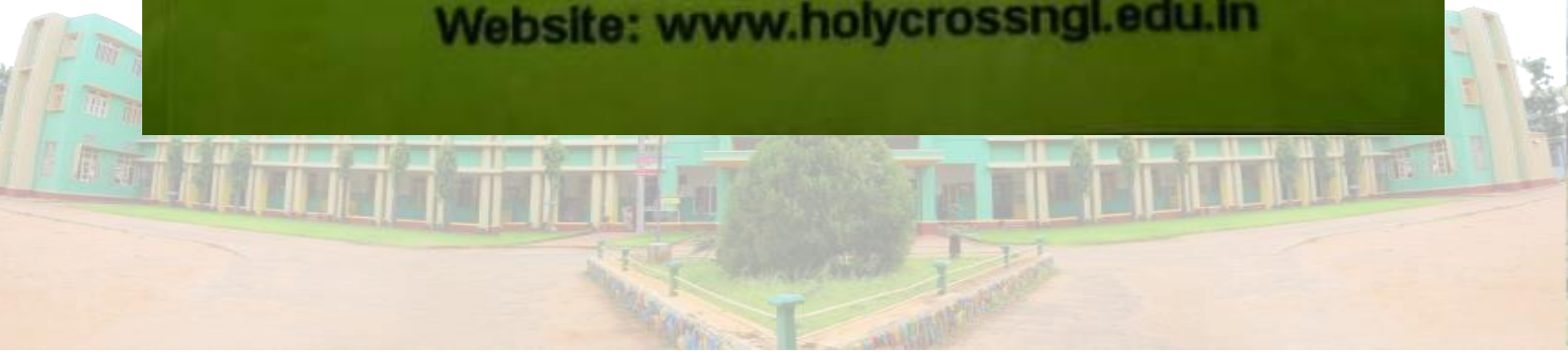
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Antifungal potential of a lectin (NagLec) isolated from the freshwater crab,
Ozototephusa naga

¹Vargila, F., ²Mary Mettilda Bai, S. and ³Vinolya Josephine Mary, J.

¹Research Scholar (Reg No: 17213042012004), Assistant Professor Department of Zoology, Holy Cross College (Autonomous), Nagercoil- 629 004,
Affiliated to Manonmaniam Sundaranar University, Tirunelveli, India.
Email: vargilf@gmail.com; metti.silvester@gmail.com

Introduction

The invertebrate immune system constitutes of a diverse assemblage of defensive molecules by which they protect themselves against the threat of pathogens. Lectins, one of the defensive molecules have become the focus of intense interest for biologists and in particular for the research and applications in medicine [1]. Lectins, the natural proteins are potent antimicrobials since they have the inherent capacity to bind to carbohydrates on microbial surfaces [2]. In this study, the antifungal activity of lectin purified from the freshwater crab, *Ozototephusa naga* was analyzed.

Materials and Methods

Freshwater crab, *Ozototephusa naga* were collected from the paddy field of Parakkal, Kanyakumari District, India and the hemolymph were collected from uninjured, non autotomised crabs by cutting the tip of third walking leg [3]. The lectin from hemolymph of the freshwater crab, *Ozototephusa naga* was purified by using affinity column chromatography [4]. The Antifungal activity was done by the method of Bauer et al. [5].

Results and Discussion

The lectin isolated from the freshwater crab, *O. naga* (NagLec) inhibited the growth of the fungal strains such as *Aspergillus niger*, *Aspergillus flavus* and *Candida albicans*. NagLec showed high inhibitory activity (Table 1) against *C. albicans* (27 mm) followed by *A. niger* (18 mm) and *A. flavus* (14 mm). This result suggested the possibility of specific receptors on the cell surface of the fungus such as N-acetyl glucosamine, N-acetyl galactosamine, mannose and fucose, N-acetyl, N-glycolyl and 5, 9-N-O-diacetyl neuraminic acids that could bind to the lectin thereby inhibiting the growth of the fungi [6]. The highest inhibitory activity was shown with the fungus *C. albicans*. This may be due to the presence of sialic acid on the surface of fungus which enabled the lectin to bind and affect the growth of the fungus [7]. Lectins are combined with specific sugar present on the surface of fungal cells and can interfere with fungal cell wall and affect the further growth of the fungi [8].

Table 1 Antifungal activity of lectin isolated from the freshwater crab, *O. naga*

Fungal Strains	Zone of inhibition (mm)			
	Lectin	Crude hemolymph	Negative control	Positive control
<i>A.niger</i>	18	10	-	22
<i>A.flavus</i>	14	-	-	27
<i>C.albicans</i>	27	9	-	14

Conclusion

Lectins with various carbohydrate specificities are able to induce the growth inhibition of microbes or kill the pathogens. Particularly, C-type lectins participate in cell adhesion, pathogen neutralization, endocytosis and phagocytosis as they are able to recognize the carbohydrate structure in microbes as pathogen associated molecular patterns (PAMPs). This suggestion helped in the development of the antifungal compounds from the crab for the production of new drugs as alternatives to antibiotics.

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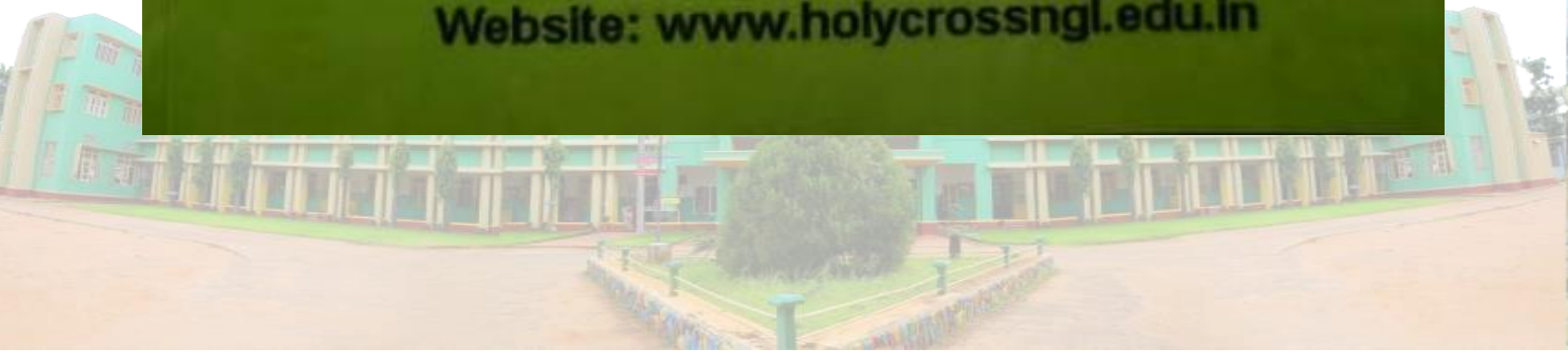
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Aquaponics, a Sustainable Farming – a Review

¹Stella Bai, D., ²Mary Mettilda Bai, S., ³Vinollya Josephine Mary, J., ⁴Harasu, T.

¹Research Scholar (Reg No. 19223043103033)

^{1,2}Department of Zoology, Holy Cross College (Autonomous), Nagercoil- 629 004,
Affiliated to Manonmaniam Sundaranar University, Tirunelveli, India.

³Centre for Marine Science and Technology, Manonmaniam Sundaranar University, Tirunelveli.
Email: metti.silvester@gmail.com

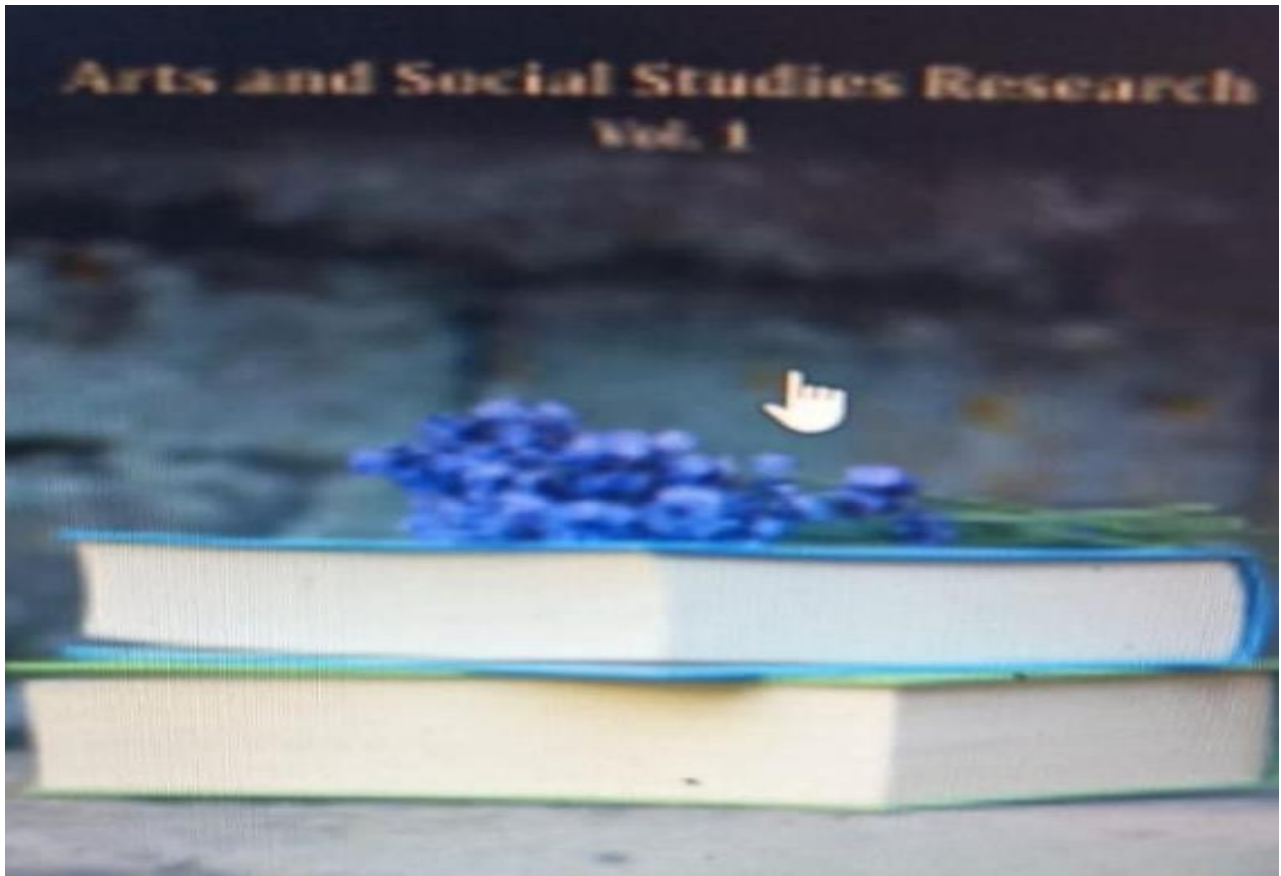
Introduction

Growing problems like population increase, climate change, soil degradation, water scarcity and food security etc. are a stress on agricultural production and results demand for alternative agricultural practices. One among the alternative agricultural practices is aquaponics, a closed loop system consisting of hydroponics and aquaculture elements. In addition, aquaponics farming eliminates the additional requirement of fertilizers, pesticides, or herbicides and does not deplete any nonrenewable resources as it uses around 90% less water than traditional farming, and is able to grow six times more per square foot than traditional farming. However, there is a lack of quantitative research to support the development of economically feasible aquaponics system. Hence this review was made to understand the aquaponics practices and benefits.

Aquaponics

Aquaponics is an integrated multi-trophic system that combines elements of recirculating aquaculture and hydroponics, where in the water from the fish tanks that is enriched in nutrients is used for plant growth [1]. It is a soil-free down-sized natural process that can be found in natural water bodies. The excreted ammonia within the system is converted into nitrite (NO_2^-) by nitroso-bacteria, and then into nitrate (NO_3^-) by the nitro-bacteria. This nitrate is the main nitrogen source for plant growth in aquaponics systems [2]. The design and application of aquaponics system is a multidisciplinary approach drawing from environmental, mechanical and civil engineering design concepts as well as aquatic and plant related biology, biochemistry, and biotechnology. The technical challenges include pH stabilization (6-6.5), nutrient balance, phosphorus, and pest management. The socio-ecological challenges of aquaponics include mineral recycling, water scarcity, energy availability, overfishing, as well as urban farming and short supply chains [3]. Aquaponic food production addresses the issues of resource conservation and access to a reliable and quality foodsource and makes it accessible and user friendly [4]. Bibbiani and Baldassare Fronte (2016) described the Integrated Aquaponic System (IAS) and suggested the integration of an aquaponic system with algae, worms and insects production for improving sustainability [5]. Rizal et al. discussed the economic and social benefits of an aquaponic system for the integrated production of fish and water plants [6]. Atiqur Rahman Sunny designed a study for integrated culture of fish and vegetables in cost effective aquaponics and concluded that this technology has the potential to increase resilience of the farming households [7].

In the late 70s and early 80s, researchers at the New Alchemy Institute, North Carolina State University (USA) developed the basis of modern aquaponics and the most known example was set up at the University of the Virgin Islands (UVI) in 1980. A survey, conducted by Love *et al.* [3] underpins its increasing significance for society as an innovative response for food security. Biofilter mechanism plays a vital role in the system and it promote pollution free environment. Hence, finding the right balance necessitates fundamental knowledge and experiences with regard to the types of fish and their food use rate; composition of the fish food; frequency of feeding; hydroponic system type and design; types and physiological stages of cultivated plants (leafy greens vs. fruity vegetables); plant sowing density, and chemical composition of the water influenced by the mineralization rate of fish waste.



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Authors

Dr. Alina Georgeta Mag, (Editor)

Lecturer, Department of Teacher Training, Faculty of Social and Human Sciences, "Lucian Blaga" University of Sibiu, Romania.

Profile Link: <http://socioumane.ulbsibiu.ro/team/alina-georgeta-mag>

Jennifer Garrison

Magellan Health, California, USA.

Trent Nguyen

California State University, Fullerton, California, USA.

David D. Paige

Northern Illinois University, DeKalb, IL, USA.

William H. Rupley

Department of Teaching, Learning and Culture, College of Education and Human Development, Texas A&M University, College Station, TX 77843, USA.

Grant S. Smith

Bellarmino University, USA.

Crystal Olinger

Northern Illinois University, DeKalb, IL, USA.

Mary Leslie

Northern Illinois University, DeKalb, IL, USA.

Asan Verryuy Wirba

Department of Management and Information Technology (MIT), Jubail Industrial College, P.O. Box 10099, Jubail Industrial City 31961, Saudi Arabia.

Kholil .

Post Graduate Program, Sahid University, Jakarta, Indonesia.

Nugroho Sukamdani

Post Graduate Program, Sahid University, Jakarta, Indonesia.

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Activity Based Learning for the Effectiveness in L2 Learning to Enhance Speaking Skills of the Students

K. Jeya Gowri^{1*}, M. Ilankumaran¹ and R. Abilasha²

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ABSTRACT

The current paper displays the failure of traditional methods used in the English language classrooms which are purely teacher-centred and do not allow the students to be competent in English. It is because, in the teacher-centred classrooms, the students remain as mute spectators. They cannot be communicative in the classroom. Indeed, this condition has to be reconstructed and lifted through various teaching strategies. Learner-centred classroom has to be adopted for the efficient and effective communication of the students. This paper tries to convey the factors associated with the environment of English language teaching situation in higher secondary schools. The education policy has been developed among the schools but the teaching and learning strategies remain the same in typical classroom teaching. The eminence of language education in schools and colleges in the current era shows a dreadful picture. The proficiency of the teachers in English language and the exposure to the materials and language are the main concern in English language learning as well as teaching. This article uncovers the utility of executing the methodology of language teaching through various tasks or activities for the higher secondary and higher education students in the classroom. This paper analyses the concept in regard to the English language learners in transition with reference to the activity based language teaching in the classroom environment.

Keywords: Competence; learner-centred; classroom environment; activity based language teaching; teacher-centred; higher secondary students; transition; methodology of language teaching.

1. INTRODUCTION

English plays a major role in educational system and in the country. It is the administration or official language, and made as a mandatory subject in schools as well as colleges. The demand for English as the medium of instruction made to bring it as a subject even from schools. The styles and strategies of language teaching and learning are the significant elements that help the students to determine and enhance their language learning skill. In learning a subject or a new language, the pupils prefer various learning style and approach such as video, audio and analytic types. The important thing is to encourage the students, by creating awareness among them regarding the significance of English and then gradually helping the students to attain their goal. The basic objective should be to make the students independent. It is up to the teacher to make the students realize that gaining competence in English shall hold the master-key to success. This article gives an account of the problems faced by the students during the higher secondary and college education regarding language learning.

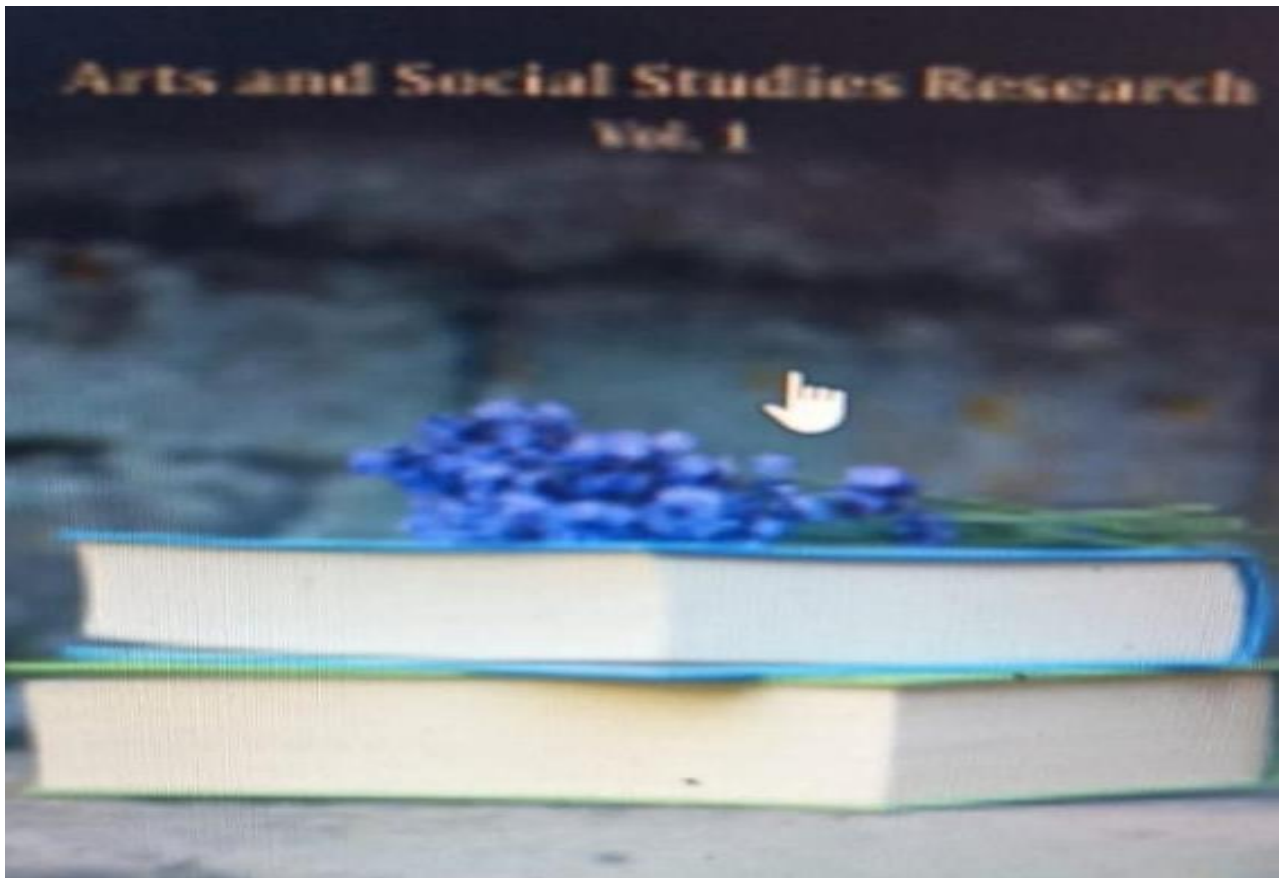
English Language Teaching in Tamil Nadu promotes at every level of education. In Tamil Nadu, the practice of English language teaching is largely based on the Grammar-Translation Method. This method uses mother tongue to teach or explain grammar on the focus of structural pattern of the language [1]. It is certain that, English language teaching in Tamil Nadu has not benefited or developed from the Grammar-Translation Method, which is one of the traditional and oldest methods.

¹Department of English, Noorul Islam Centre for Higher Education, Kumaracoi, Thuckalay, Tamil Nadu, India.

²Department of English, Holy Cross College of Arts and Science (Autonomous), Nagercoil, Tamil Nadu, India.

*Corresponding author: E-mail: jgowri427@gmail.com;





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Enriching Second Language Skills through Cognitive Aspects

A. Delbio^{1*}, M. Ilankumaran^{1**} and R. Abilasha^{2§}

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ABSTRACT

Language plays a main role in human civilization. The importance of foreign language is stressed in educational field. In the field of foreign language acquisition, cognitive function is given priority. Psychological perspective is the theoretical study about cognitive functioning in acquiring the language. This paper focuses on components and skills of language. Moreover, psychological problems in attaining the second language skills are discussed. In learning second language skills, the LSRW play the prominent role. Listening is preliminary to all other skills. Reading is a complex mechanism of decoding the messages in print. Speaking is natural expression in language, which is not always consciously regulated. Speaking implies, speaking with appropriateness to the social context. Writing is the most difficult and demanding of skills. Listening and speaking are considered to be the receptive skills and speaking and writing are the productive skills. For second language learners, all the skills are necessary in proportion of learner's requirement. The learner of second language needs to give more attention on language skills as well as the components of the language. Phonology, Lexis, grammar and pragmatics are also needed in accomplishing the communicative competence. The correct direction may help the learners to get success in their goal. The teachers have to play the main role in language acquisition, because the learners get reinforced by them. The teacher can follow some techniques to improve the communicative competence of the students. Some of the techniques are discussed in this paper. This paper also brings out the importance of language skills and the need of components of language to overcome the barriers in acquiring the second language.

Keywords: Language; psychological aspects; language skills; listening; speaking; reading; writing; second language acquisition; communicative competence; components of language.

1. INTRODUCTION

In this globalization, English language is given more importance. It opens the door of opportunities in all the fields. The instructor of second language is concentrating more on developing the communicative capability of the learners. The goal of second language skills is to develop the communicative competence of the students. The students are encouraged to practice the foreign language in their academic field. In learning the second language, listening and speaking skills can be taught at the beginning, but the students may begin to read and write in the target language. This may lead to be failed in acquiring the target language. The learner needs to develop the conscious and unconscious knowledge of language skills. In the act of communication grammar, vocabulary and culture of the language are organised. The learner needs to concentrate more on language skills to attain communicative competence.

¹Department of English, Noorul Islam Centre for Higher Education, Kumaracoil, Thuckalay, Tamilnadu, India.

²Department of English, Holy Cross College (Autonomous), Nagercoil, Tamilnadu, India

*Corresponding author. E-mail: delbiodel@gmail.com,

^{*}ORCID No. 0000-0003-2097-127X

^{**}ORCID No. 0000-0002-4803-895X

[§]ORCID No. 0000-0001-5300-8928



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**PARADIGM SHIFTS IN TEACHING LANGUAGE,
LITERATURE AND CULTURE**

Edited By

Dr. J. JOHN SEKAR | Dr. RAKESH KUMAR | Dr. P. KARTHIKA DEVI
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Dr. J. JOHN SEKAR

Head & Associate Professor
Research Department of English
The American College, Madurai, Tamil Nadu, India

Dr. RAKESH KUMAR

Assistant Professor & Head
Department of English
Bhaderwah Campus, University of Jammu
Jammu and Kashmir, India

Dr. P. KARTHIKA DEVI

Assistant Professor
Research Department of English
The Standard Fireworks Rajaratnam College for Women (Autonomous)
Sivakasi, Tamil Nadu, India

Dr. J. SUBITHA PERSIS

Head & Assistant Professor
Department of English
Women's Christian College
Nagercoil, Tamil Nadu, India

Dr. K. KAVIARASU

Assistant Professor of English
Vivekananda College, Agastheeswaram
Kanniyakumari, Tamil Nadu, India

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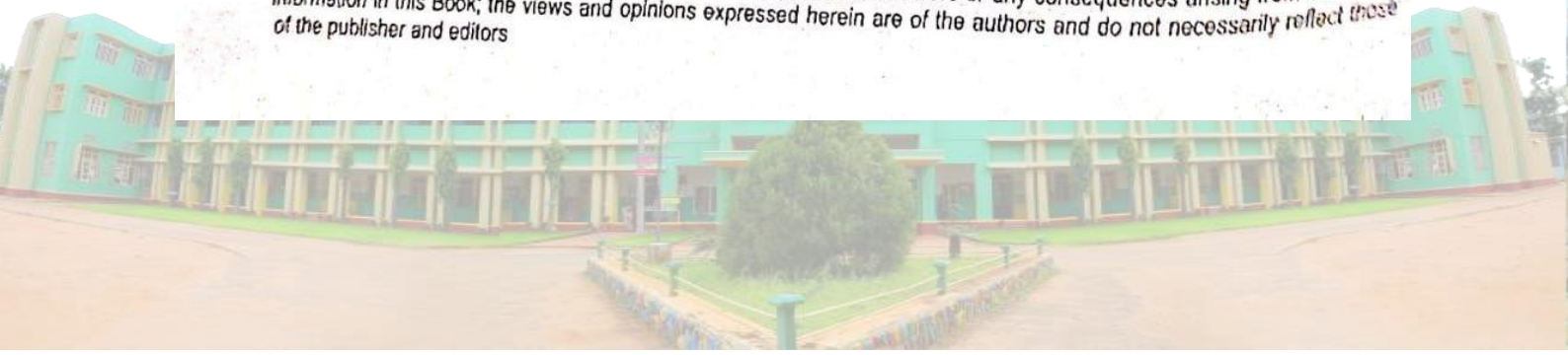
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CHAPTER 35

MULTIMODAL NARRATION: A STYLISTIC READING OF MICHAEL ONDAATJE'S IN THE SKIN OF A LION

Dr. V. VIRGIN NITHYA VEENA

*Assistant Professor of English
Holy Cross College (Autonomous), Nagercoil*

Ms. E. SAHAYA MERLIN

*Assistant Professor of English
Jayaraj Annapackiam College for Women (Autonomous), Periyakulam*

Abstract

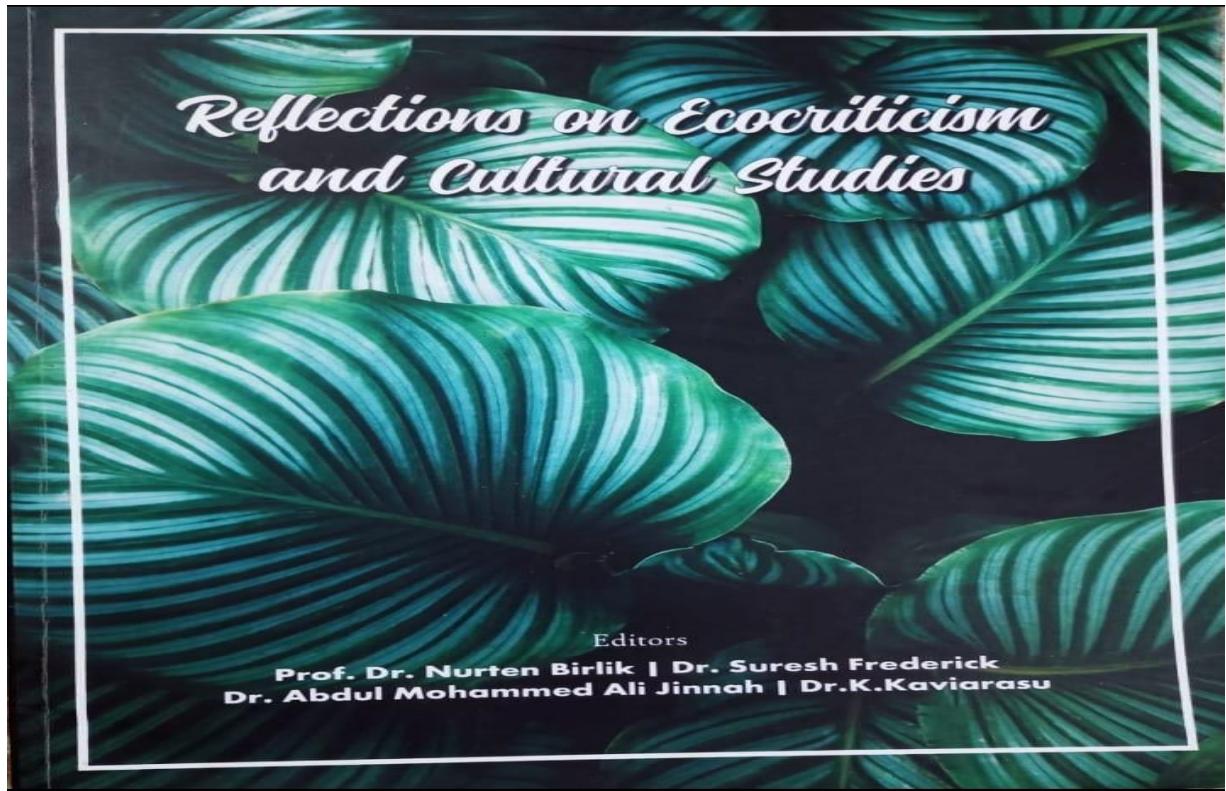
Recently, multimodal analysis of texts has become an influential aspect of research. It has been developed over the past decade due to the much debated questions about changes in the society in relation to new media and technology. Multimodal texts are defined as texts which communicate their message using more than one semiotic mode, or channel of communication. This paper entitled, "Multimodal Narration: A Stylistic Reading of Michael Ondaatje's In the Skin of a Lion" analyses the employment various modes used by the author, apart from language, including font styles, gestures, images or visual art and cinematography in the narration of the story. The ultimate purpose of the *modus operandi* in the postmodern text is to offer better transmission of meanings unlike the traditional way of conveying the singular meaning of a text through linear narration

Keywords: multimodal, gestures, images, visual art, cinematography, narration, *modus operandi*, postmodern.

Multimodality is a combined use of various forms of modes simultaneously that helps in the process of construing meaning. The term was not well-defined till the 20th century. Due to the considerable rise in technology many new modes of presentation has been created. Since then, multimodality has become standard in the 21st century, relating to various network-based forms such as art, literature, social media and advertising. Since communication is more than what is said and heard also by what is perceived through expressions, gazes, gestures and movements, all our interactions can be considered as multimodal.

Multimodality has advanced along with technology. This advancement has created a new concept of writing, a collective perspective keeping the reader and writer in relationship. With the influence of technology, the concept of reading has attained a change and the desire for a quick transmission of information. Multimodal analysis includes the "analysis of communication in all its forms, but is particularly concerned with texts which contain the interaction and integration of two or more semiotic resources - or 'modes' of communication - in order to achieve the communicative functions of the text" (O'Halloran and Smith 2).

During the 1960s and 1970s, many writers looked to photography, film, and audiotape recordings in order to discover new ideas about composing. The monomodality or singular mode,



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CHAPTER

8

**A VOICE FOR THE BLUE METAL:
- AN ANALYSIS ON THE IMPORTANCE OF
WATER WITH REFERENCE TO THE NOVEL
MEMORY OF WATER BY EMMI ITARANTA**

R. AHALYA

Research Scholar

V. VIRGIN NITHYA VEENA

Assistant Professor of English

Holy Cross College (Autonomous), Nagercoil

Abstract

Just as the subalterns, nature is voiceless. It is the eco critics along with the eco writers form the warriors who voice for nature. This research paper entitled "A voice for the blue metal: An analysis on the importance of water with reference to the novel Memory of Water by Emmi Itaranta" talks about the importance of understanding the reality that, it is in the hands of every human being the future world survives. Only when the nature at present has been protected, the nature will flourish in the future. The novel analysed in this research paper talks about the importance of saving water at present, for our future generations to survive.

Key words: eco criticism, eco critics, nature, water, voice.

Introduction

Literature involves human interest, imagination and artistic embellishment. It is a record of everything that a man has seen, experienced, thought and felt about his own life. Eco criticism is an upcoming theory that helps in explaining the various aspects that affects the natural world and which in turn affects the lives of the human beings. It cannot be considered as a unitary theory. Eco criticism discusses about the relation between living and non-living organisms. This can be considered as the theory that brings out the beauty of nature and the problems faced by it. It is during the mid-1990s eco criticism has emerged as a study of the relationship between nature and human beings.

William Rueckert, in his essay titled "Literature and Ecology: An experiment in Eco criticism" published in 1978, has coined the word 'Eco criticism.' "It is well known that the

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Dr.C.THANAVATHI

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Editor

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Social Media in Teaching and Learning

Chapter 3

ENHANCING SECOND LANGUAGE SKILLS
USING MULTIMEDIA

J.Jancy

M.Phil. Research Scholar in English,
Holy Cross College (Autonomous), Nagercoil,
Kanyakumari District, Tamil Nadu.

Dr. R.Abilasha

Assistant Professor in English,
Holy Cross College (Autonomous), Nagercoil,
Kanyakumari District, Tamil Nadu.

Learning is a process in which individual, group, and communities internalize and reconstruct their own knowledge. As there is an enormous increase in knowledge aspect, traditional method of learning is being dominated by several new methodologies. On the contrary, one cannot totally neglect or ignore the traditional methods of teaching. There is a need to synchronize the new methods with that of the existing changes; this will have an impact on development of attitude which will have a resistance over the ignorance and helps in cultivation of proper learning atmosphere.

Learning a second language increases children's cognitive development and helps in the overall development of a child. It also stimulates children's curiosity and makes them an expert in other fields. In order to engage the student in learning, it is important to make the learning process interesting. Multimedia can be used as a tool to teach students at the primary level. This in turn enhances the basic language skills of students. There is a lack of exposure to English language among non-native speakers. This results in limited vocabulary among pupils from rural and semi-urban schools. The major reason is that the pupils have strong mother tongue

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Chapter 10

MULTIMEDIA AND BRAIN BASED LEARNING

S. Keerthana and Dr.R.Abilasha

M.Phil., Scholar & Assistant Professor,

Department of English,

Holy Cross College (Autonomous), Nagercoil -629004.

Tamilnadu.

Learning becomes fruitful when it is achieved in an effective manner. Due to the massive growth of science and technology, ways to gather information everyday seems to be an easy task. Debates on effective learning is still going on due to the practice of the traditional classrooms in major parts of the world. Learning and teaching through technology has always been a question whether it is applicable, approvable, functional or even sustainable. Though technology relates to education in so many ways, it has become a major concern of the day. The methods of teaching or learning is attained through organized and direct interaction of the learners, educators and the materials provided to the learners.

The concern towards learner-centered approach has paved its way on thinking about the role of the learners and also the widen opportunities that initiates and helps the learner in learning. The impact of Internet and other types of technology mould the learners to be less dependent on the methods of teaching by the educators and also the classroom. It also helps the learners to :



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புதுக் கவிதைகளில் சமுதாயத் தாக்கம்
முனைவர் மா.தே.அருண் மொழி நங்கை,
தமிழ்நாடு
திருச்சிலுவை கல்லூரி,
நாகர்கோவில்.

முன்னுரை

புதுக்கவிதை என்பது இன்றைய இலக்கிய வகைகளுள் ஒன்று. உரை நடை வழங்குகளாகிய சிறுகதை, புதினம், நாடகம், கட்டுரை இவற்றோடு புதுக்கவிதையும் சிறப்புறு வளர்ந்து வருகின்றது. படைப்பாளன் தனது கருத்தைத் தெரிவிப்பதற்கு ஒருவழிமுறை வேண்டும். படைப்பாளன் தன் உணர்வு வெளிப்பாட்டுக் கருவியாக ஒவியம், சிற்பம், இலக்கியம் போன்ற நுண்கலைகளுள் ஒன்றைத் தேர்ந்தெடுக்கின்றான். இலக்கியத்தில் கருத்தைச் சிறப்பாகவும் செறிவாகவும் உணர்ச்சிமிக்க நிலையிலும் சொல்லும் அற்றல் கவிதைக்கே இருப்பதால் கருத்தைத் தெரிவிக்கும் சிறந்த வழிமுறை கவிதையேயாகும். சமுதாயத்தில் ஒரு உடனடி மாற்றம் தேவையாகும் போது மக்களுக்கு உணர்வுடனும் மாபெரும் ஆற்றலாகக் கவிதை மலர்வின்றது. பாரதியின் எழுச்சிமிக்க தேசியப்பாடல்கள் இதற்குச் சான்றாகும். புதுக் கவிஞர்களிடத்தில் ஷனுப்பெற்று பல்வேறு சமுதாய உணர்வுகள் புதுக்கவிதைகளைப் படைக்கச் செய்தன. அவற்றை இக்கட்டுரையில் காண்போம்.

புதுக் கவிதையைத் தந்த சூழல்:

இது குடியாட்சிக் காலம். பழங்காலத்தில் மக்களுக்கில்லாத பேச்சரிமையும் எழுத்துரிமையும் மிகுந்த காலம். சமுதாயத்தின் ஒவ்வொரு துறையும் இவ்வுரிமையைப் பயன்படுத்திக் கொள்வதைக் கண்டடாகக் காண்கிறோம். தற்கால இலக்கியமும் இவ்வுரிமையை நன்கு பயன்படுத்திக் கொண்டிருக்கின்றது. இலக்கியம் பழங்கால வீரையும் மன்னரையும் புரவலரையும் கடவுளையும் கடவுள் அடியாரையும் மட்டும் போற்றிக் கொண்டிருந்த பழைய மரபிலிருந்து மாறிக் சமகாலத்துச் சமுதாயத்தின் குறைபாடுகளைச் சுட்டிக்காட்டி அக்குறைகளைக் களையும் கருவியாக மாறியிருக்கின்றது. புதுக்கவிதைகள் இன்றைய சமுதாயத்தின் படப்பிடிப்புகள், சமுதாயத்தின் இழிநிலையைக் கண்டு மனம் வெதும்பும் புதுமைப்பித்தன்.

“ஒற்றைச் சிதையினிலே
உம் மெல்லோரையும்
வைத்து எரித்திட்டாலும்
வயிற்றெரிச்சல் தீராத்”

(புதுமைப்பித்தன் கவிதைகள்)

என்று சினத்துரைப்பது புதுக் கவிதையின் தனித் தன்மைக்கு ஒரு சான்றாகும்.
புதுக் கவிதையும் சமுதாயமும்:

தாழ்வு மனப்பான்மை, உயர்வு மனப்பான்மை, மனித அடிமை, உள்ளத்தின் புதிரிகள், மனித நடத்தையும் சூழலும் என்று மனிதனின் நடத்தைக்குக் காரணமான பல்வேறு நிலைகளையும் கால கோணங்களில் ஆராயும் இன்றைய அறிவியலின் பாதையில் புதுக்கவிதைகளும் நடைப்போட்டுப் புறநோக்கிலும், அகநோக்கிலும் சிறந்து விளங்குகின்றது.

அரசியல்:

உரிமைக் காற்று வீசும் அறிவு அரசுகில் உலாவும் புதுக் கவிஞர்கள் எத்தகைய தடையமின்றித் தாம் நினைத்ததைப் பாடுகின்றனர். இவர்களுக்கு அரசியலும் ஒரு சாதாரணப் பாடுபொருளேயாகும்.

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சின்னஅரயத்திபுதினத்தில் திணைக்கோட்பாடு

முனைவர் செ.தேன்மொழி,
உதவிப் பேராசிரியர்,
திருச்சிலுவைகல்லூரி,
நாகர்கோவில்- 629 004.

நாராயணனும் சின்னஅரயத்தியும்

1940 செப்டம்பரில் இடுக்கிமாவட்டத்தில் பிறந்தவர் நாராயணன். இவரதுமுதல் படைப்புகொச்சரேயத்தில் இந்நாவல் பலமொழிகளில் மொழிபெயர்க்கப்பட்டுள்ளது. தமிழில் இதனைகுளச்சல் யுகம் சின்னஅரயத்திஎன்றபெயரில் மொழிபெயர்த்துள்ளார். தபால் துறையில் பணியாற்றிஒய்வுபெற்ற இவர் எட்டுபுதினங்களையும் சிறுகதைகளையும் படைத்துள்ளார். கேரளத்தின் ஆதிவாசிசமூகமானமலையரையர்களைப் பற்றிஅச்சமூகத்தைச் சேர்ந்தஒருவர் எழுதியமுதல் புதினம் என்றவகையில் இது குறிப்பிடத்தக்கது. அனுபவத்தின் சுரத்தையும் உண்மையின் தெளிவையும் இப்புதினம் உணர்த்திநிற்கின்றது. சாகித்தியஅகாதெமிவிருதுமட்டுமன்றிதேர்ப்பில் ரவிவிருது,அபூபிவிருது,கேரளசாகித்தியஅகாதெமிவிருதுகளையும் இப்புதினம் பெற்றுள்ளது. இடுக்கிமாவட்டப் பழங்குடியினரின் பண்பாடு,வாழ்வியல் சூழல்,அவர்கள் மீதுநிகழ்த்தப்படும் சுரண்டல்,நாகரிகச் சமூகம் அவர்களைநடத்தும் விதம் போன்றவற்றைஅடிப்படையாகக் கொண்டு இப்புனைவுஅமைந்துள்ளது. இது ஆதிவாசிசமூகத்தின் வரலாறுகவோஅல்லதுஅதைப்பற்றியஆய்வறிக்கையாகவோ இல்லாமல், ஒருகதாபாத்திரத்தின் வாழ்க்கையைவிரிப்பதன் மூலம் அம்மக்களின் அறியாதவருட்காலவாழ்க்கையைஎடுத்துரைத்துள்ளார்.அவ்வகையில் பாதுகாக்கப்படவேண்டியமலையரையர்கள் பற்றியவரைற்றுப் பெட்டகமாக இப்புதினம் அமைந்துள்ளது.தொல்காப்பியதிணைக்கோட்பாடு

தொல்காப்பியஅகத்திணைக் கோட்பாட்டுடன் நாவலைஒப்பிட்டுநோக்குதலே இக்கட்டுரையின் நோக்கம். தொல்காப்பியர் முதல்,கரு,உரிப்பொருளாகஅகத்திணையியல் கோட்பாடுகளைவிரித்துள்ளார். தொல்காப்பியரின் இத்திணைக் கோட்பாட்டுடன் சின்னஅரயத்திபுதினத்தைஒப்பிடுவதன் வாயிலாகமலையாளமொழி இலக்கியத்தில் அதன் தாய் மொழியின் தொன்மைக் கூறுகளின் தாக்கம் காணப்படுகின்றதா என்பதைக் கண்டறியமுடியும்.



முதற்பொருள்

சின்னஅரயத்திநாவல் மலையும் மலைசார்ந்த இடமுமானகுறிஞ்சிநிலப்பரப்பில் வாழும் மக்களைமையமாகக் கொண்டுள்ளது.புதினத்தில் குறிஞ்சிநிலத்திற்குரியபொழுதும் இடம்பெற்றுள்ளது.தொல்காப்பியத்தில் கூறிய மரம் முன்புனிஎன்று இவை ஒதியகுறிஞ்சிக்கூஉரியஆகும் என்றுகுறிஞ்சிநிலத்திற்குரியபெரும் பொழுதும் சிறுபொழுதும் வரையறுக்கப்பட்டுள்ளது. புதினத்தில் “குஞ்சிப்பெண்ணுகுளிரில் நடுங்கத் துவங்கிநீண்டநேரமாகிவிட்டது. கட்டியிருந்தமரக் கச்சையால் குளிரைத் தடுத்துவிட இயலவில்லை. அகலம் குறைந்ததுணிஉடல் முழுவதையும் போர்த்திக் கொள்ளப் போதுமானதாக இல்லை...காற்றுசோ...வென்றுவீசிக்கொண்டிருந்தது. என்னகுளிர்...பற்கள் கிடுகிடுத்தன(பக்-40)”, “குஞ்சாதிச்சன் கிழிந்தப் போர்வையால் உடல் முடி கிழக்குமேட்டின் முகட்டையேயார்த்துக்கொண்டிருந்தான். எனும்பைஉருக்கும் குளிர்காற்றுவிசும் போது...(பக்- 92)”, “மழையில் நனைந்துகுளிர்ந்துமாதங்கள் கடந்தன. பனியில் முடியமலைமுகடுகளினூடே சூரியன் எட்டிப் பார்க்கஆரம்பித்தான்... (பக்- 97)”, குளிர் தாங்கமுடியாமல் அரையங்கள் அடுப்பைச்சுற்றிஅயர்ந்துகொண்டார்கள் எனும் பகுதிகள் கூறிகால இரவைஎடுத்தியம்புகின்றன. இவ்வாறுநாவலில் சிறுபொழுதானமரமும் பெரும் பொழுதுடன் இணைத்துப் பேசப்படுகின்றது.

கருப்பொருள்

“தெய்வம் உணாவேமாமரம் புள் பறை
செய்தியாழின் பகுதியொடுதொகைஇ
அவ்வகையிறவும் கருஎனமொழிப”


என்றுஐந்திணைக்குரியகருப்பொருள்களைதொல்காப்பியர் பட்டியலிடுகின்றார். சின்னஅரயத்திபுதினத்தில் வளயில்லம்,பூதான இல்லம்,மொடலக்காட்டில்லம்,நெல்லிப்புள்ளியில்லம்,சொக்கயில்லம்(பக் -35) எனமக்கள் பலபிரிவினராக இருந்தனர்.எனினும் உயர்ந்தோர் தாழ்ந்தோர் எனபிரிக்கப்பட்டவில்லை. எனினும் கதையோட்டத்தில் மலையரையர்கள்தாழ்ந்தோராகவும் மலையின் கீழ் வாழும் மற்றமக்கள் உயர்ந்தோராகவும் கருதப்பட்டதைக் காணமுடிகின்றது.எந்ததெய்வத்தைவழிபட்டனர் என்பதுபற்றிதெளிவானசெய்தியில்லை. குலதெய்வம் இருந்ததும்






தமிழ்த்துறை

தஞ்சாவூர் கத்தோலிக்க கலை மற்றும் அறிவியல் கல்லூரி
கலையக்காவிளை
திராவிடப் பல்கலைக்கழகத் தமிழ்த்துறை (ஆந்திரா)
கிணற்று தென்புறப்பேட்டை

தமிழ்ப் படைப்பிலக்கிய புனைவு வெளிகள் தேசிக் கருத்தாங்கம்

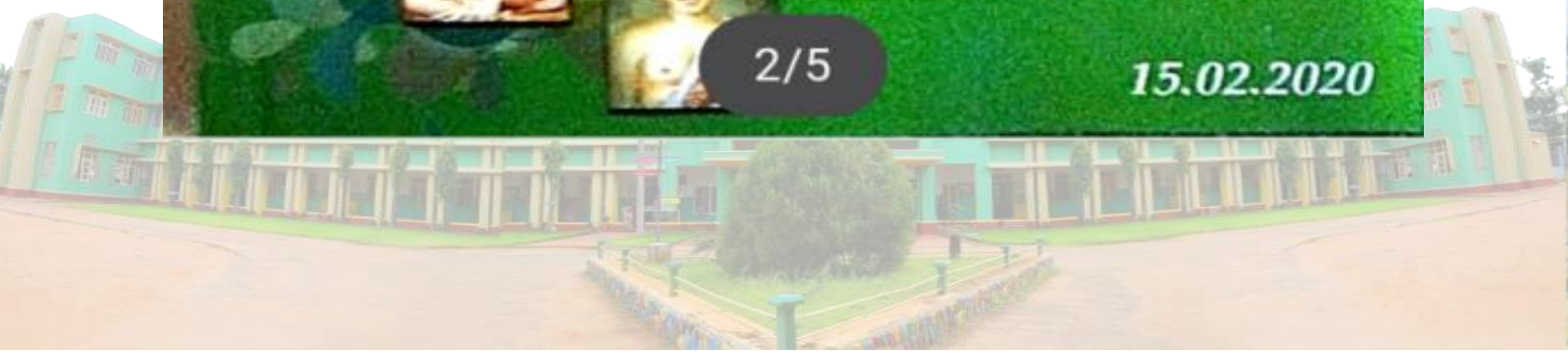


பதிப்பாளர்கள்
பேரா. முனைவர். த. விஷ்ணு குமாரன்
முனைவர். எஸ். தங்கம் பிழின்ஸ்
முனைவர். ம. பெரில் திரேஸ்
முனைவர். த. ஷீமா மோன்



2/5

15.02.2020



<p>நூலின் பெயர் நூல்வகை பதிப்பாசிரியர்கள்</p>	<p>தமிழ்ப் படைப்பிலக்கியப் புனைவு வெளிகள் : தமிழ்ப் படைப்பிலக்கியப் புனைவு வெளிகள் : ஆய்வுக்கட்டுரைகள் தொகுப்பு : பேராசிரியர். முனைவர் த. விஷ்ணு குமாரன் தமிழ்த்துறைத் தலைவர், திராவிடப் பல்கலைக் கழகம், ஆந்திரா, முனைவர். எஸ். தங்கம் பிறின்ஸ் தமிழ்த்துறைத் தலைவர், நாஞ்சில் கத்தோலிக்க கலை மற்றும் அறிவியல் கல்லூ களியக்காவிளை.</p> <p>முனைவர். ம. பெரில் திரேஸ் உதவிப்பேராசிரியர். தமிழ்த்துறை. நாஞ்சில் கத்தோலிக்க கலை மற்றும் அறிவியல் கல்லூ களியக்காவிளை.</p> <p>முனைவர். ந. ஷீமா மோள் உதவிப்பேராசிரியர், தமிழ்த்துறை. நாஞ்சில் கத்தோலிக்க கலை மற்றும் அறிவியல் கல்லூ களியக்காவிளை.</p>
<p>முதல் பதிப்பு</p>	<p>: பிப்ரவரி 2020</p>
<p>மொத்த பக்கங்கள்</p>	<p>: 376</p>
<p>விலை</p>	<p>: 350 /-</p>
<p>உரிமை</p>	<p>: தமிழ்த்துறை நாஞ்சில் கத்தோலிக்க கலை மற்றும் அறிவியல் கல்லூ களியக்காவிளை.</p>
<p>வெளியீடு</p>	<p>: Sai venkateswara publications, 14-510-9 Lakshmi layout, Kuppam 517425 Andhra Pradesh</p>
<p>அச்சாக்கம்</p>	<p>: ஆவெ அச்சகம், வெள்ளிகோடு, 9487549262</p>
<p>அட்டை வடிவமைப்பு</p>	<p>: பேரா. முனைவர். ஆர். அடலின் ஜெபா</p>
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தமிழ்நாட்டின் புனைவு வெளிகள்

இலக்கியங்களில் புனைவு வெளிகள்

செ.ஐடா,

உதவிப்பேராசிரியை,
தமிழ்த்துறை(சுயநிதி),
திருச்சிலுவை கல்லூரி(தன்னாட்சி),
நாகர்கோவில்.

புனைவு:

இலக்கியங்களில் புனைவுகள் பெரும் பங்கு வகிக்கிறது. புனைவின் மூலக்கருவில் எழும் இலக்கியங்கள் அதிகமாக உள்ளன. புனைவின் மூலக்கருவில் தொய்ந்து அதனை மன உணர்ச்சியின் நெகிழ்ச்சிக்கு ஏற்றவாறு கவிஞர்கள் வல்லவர்கள். மாந்தர்களின் உள்ளத்தில் கவிஞர்களை வெளிப்படையாகவும், குறிப்பாகவும், உவமைவரியாகவும் காட்டுகின்றன. இலக்கியங்களில் பரவலாகக் காணலாம். இலக்கியத்துக்கு அழகு சேர்ப்பது புனைவு ஆகும். கவிஞன் தான் உருவாக்கும் இலக்கியம் சிறப்பாக அமைய பல புனைவுவெளிகளை பயன்படுத்தி சேர்க்கிறான். பல புனைவுகள் உண்மையின் மூலக்கருவில் அமையும். பல புனைவுகள் சிந்தனைக்கு அப்பாற்பட்டதாக அமையும்.

புனைவுகள்:

புனைவு என்பதற்கு ஒழுங்காக அமைத்தல் என்று அபிதானம் விளக்கம் தருகிறது. புனைவு என்பதற்கு கற்பனையின் மூலக்கருவில் உருவானது என்றும் இலக்கியத்தில் கற்பனையான உருவங்கள், பாத்திரங்கள் ஆகியவற்றின் அடிப்படையில் உருவாக்கப்படுவது என்றும் கிரியாவின் தற்கால தமிழ் அகராதி விளக்கம் தருகிறது.

“பிணர் சுவர் பன்றி தோல்முறைப் பிணவுரு
கணைக்கால் ஏனல் கைம்மிகக் கவர்தலின்
கல் அதர் அரும் புழை அல்கி, கானவன்
வில்லின் தந்த வெண்கோட்டு ஏற்றை
புனை இருங் கதாப்பின் இனையோள் கெண்டி”
புனை நற்றிணைப் பாடலில் அழகு செய்கல் என்ற பெயரில் புனைதல் என்ற சொல் இப்பெயர்ச்சொல்



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வகை	: கட்டுரைகள்
பதிப்பாசிரியர்	: க. கண்ணகி (04362 - 290690)
முதல்பதிப்பு	: திருவள்ளூர்வராண்டு 2051 (அக்டோபர், 2020)
பதிப்புரிமை	: தமிழ் ஐயா வெளியீட்டகம், திருவையாறு
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அச்சாக்கம்	: செல்வநாயகம் அச்சகம், சென்னை

ஆசிரியர் தமது தமிழ் இலக்கிய கலை மன்றம், கோவை காமாட்சிபுரி ஆதினத்துடன் இணைந்து திருவையாறு தமிழ் ஐயா கல்விக்கழகம் நடத்தும் 18ஆவது அனைத்துலக அறநெறிக் தமிழ் ஆய்வு மாநாட்டுக் கருக்கராங்கிக் 25-10-2020 அன்று படித்தளிக்கப்பட்ட கட்டுரைகளின் தொகுப்பு நூல்.



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அ.பிய்யலா

உதவிப்பேராசிரியை, தமிழ்நாடு
தஞ்சை இலக்கிய கல்லூரி (தன்னாட்சி)
நாகர்கோவில்

முன்னுரை

இலக்கியங்கள் சமூக வாழ்வனைப் படம்பிடித்துக் காட்டும் கண்ணாடி எனலாம். ஒவ்வொரு காலக்கட்டத்திலும், எழுந்த இலக்கியங்கள் அவ்வவ் காலகட்ட மக்களின் வாழ்வை அவர்களது வாழ்வியல் அறங்களை எடுத்துக் கூறுகின்றன. மனிதனின் வாழ்வியல் முறையிலும் சிந்தனை முறையிலும் கருத்தாழத்தை ஏற்படுத்தக்கூடிய அறம் பற்றிய சிந்தனைகளை ஆய்வதே இக்கட்டுரையின் நோக்கம்.

இலக்கியங்களில் அறம் என்ற சொல்லின் விளக்கம்

அறு என்ற வினைச்சொல்லின் அடியாகப் பிறந்ததே அறம் என்னும் சொல். அறம் என்னும் சொல்லிற்கு மனிதன் தனக்கென வரையறுத்துக் கொண்ட ஒழுக்கமுறைகளின் தொகுப்பு என்று பொருள் கூறுவர். பிறவிதோறும் மனிதனைப் பற்றிக் கொண்டு வரும் நீவினையை அறுத்தெறிவதே அறம் என்ற ஆன்மிக விளக்கமும் இதற்குத் தரப்படுவது உண்டு. மொத்தத்தில் மனத்தின் மாசினைப் போக்குவதே அறம் ஆகும். மனமாக என்பது பொறாமை, பேராசை, வெகுளி, சுடுஞ்சொல் ஆகியவை ஆகும். இதனையே வள்ளுவர்.

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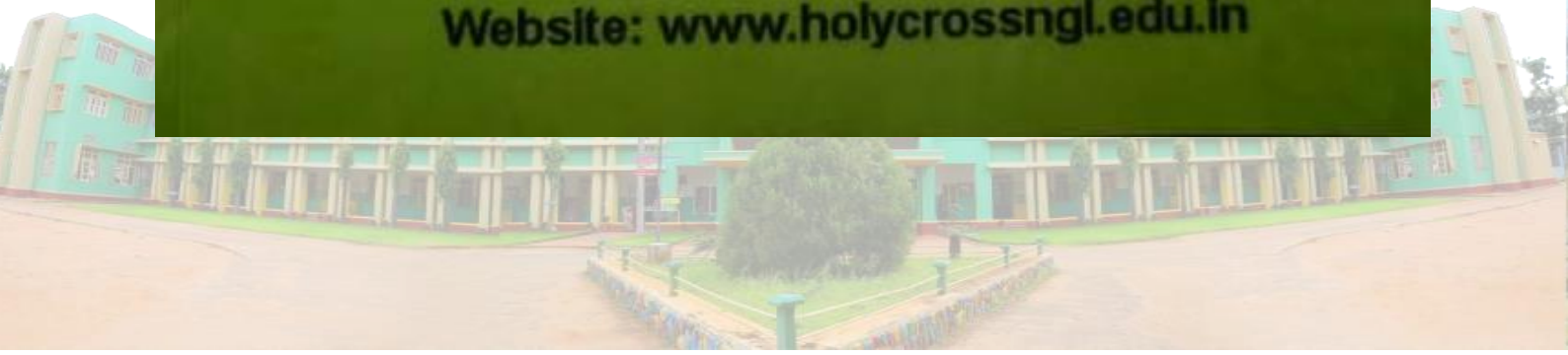
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"கி. ராஜநாராயணன் கதைகளில் பரிமாறும் உணவுகள் & உணர்வுகள்"

முனைவர் அ.டெல்பின்,

முன்னுரை

இந்திய இலக்கியத்தின் மிகப் பழமையான உருவம் கதைதான். கவிதை தோன்று முன்னரே கதைகள் தோன்றின. இக்கதைகளே கவிதையின்பாடு பொருள் ஆயின. நாட்டுக் கதைகளின் கருப்பொருள் மனித வாழ்க்கையின் பல்வேறு அம்சங்களை உணர்த்துவதாக இருக்கின்றன.

கரிசல் நிலத்திற்கும் அந்த நிலத்தில் வாழ்கின்ற மக்களின் சமுதாயக் கூட்டுணர்வு உணர்ச்சிக்கும், கரிசல் காட்டில் ஒரு முலையில் பிறர் தலையிடு எதுவுமில்லாமல் உறக்கத்திலேயே நடமாடுகிற மனிதர்கள் வாழுகிற நூற்றுக்கணக்கான கரிசல் காட்டுச் சிற்றூர்களில் ஒன்று. அவ்வழ் மக்களின் வாழ்க்கை ஒரு பாணைச் சோற்றுக்கு ஒரு சோறு மாதிரி.

கரிசல் பண்பாட்டின் வாழ்வியலை உயிரோவியமாகத் தீட்டிக் காட்டும் கிராஜ நாராயணனின் கரிசல் எழுத்துக்களை வாசிக்கும் ஒவ்வொருவர் நாசியிலும் சூடாகிப் போன செம்மண பரப்பில் பெய்யும் சிறுமழையால் எழும் மண்ணின் ஆவியினை சுவாசிக்கும் உணர்வு ஏற்படுவதைத் தவிர்க்கவே முடியாது. கிரா-வின் கதைகளில் உலாவரும் கரிசல் மாந்தர்கள் நம் கண்முன் உலாவுவது போன்று உணர்வது போல, அவர் கூறும் உணவுகளின் ருசியினை உண்ணாமலே அறிய வைக்கும் அற்புதம் அவரது எழுத்துக்களுக்கு உண்டு. அவ்வாறாக கி. ரா-வின் கதைகளில் காணப்படும் சில கரிசல் உணவுப் பதார்த்தங்களை யதார்த்தமாக எழுத்தில் கி. ரா பரிமாறும் விதத்தினையும், இவ்வாய்வுக் கட்டுரையில் காணலாம்.

ஊர்க்காலி - யின் உள்மணம்

கி. ராஜநாராயணன் எழுதிய கதைகளுள் ஒன்று ஊர்க்காலி.

ஊர்க்காலி என்றால் ஊரில் உள்ள மாடுகளை மேய்க்கும் வேலை. இதற்க்கென்று குடித்துக் கொள்ள வேண்டியது தான். மாடுகளை ஊர் மந்தையில் கொண்டு அடைத்தபின்பு கொள்ளலாம்.

இவ்வாறான பெரிய தலைகளை மேய்க்கும் பணியினைச் செய்பவன் தான் "கொத்தாளி" எனப்படும் ஒன்பது வயதுள்ளச் சிறுவனைச் சுற்றிப் பின்னப்பட்ட கதைதான் இது. இது கதாசிரியரின் நேரடி சுற்றுப் போல் சுறப்பட்டுள்ளது.

உப்பைத் தொட்டு உரலை முழுங்கு

கதை கூறும் ஆசிரியர் சிறுவன், கொத்தாளியைச் சந்திக்கும் நிகழ்வினையே இத்தொடர் மூலம்தான் ஆரம்பிக்கின்றார். "கைக்கும் வாய்க்கும் சண்டை" இப்படி முதல்முதலாக நான் கேட்டது கொத்தாளி இடமிருந்துதான் என்று கூறுகிறார்.

"கும்பா நிறைய கேப்பைக் கூழு; நிறையத்தண்ணீர் விட்டுப் பிசைந்த நிக்கூழை அள்ளி, "உருட்! உருட்!" என்ற சத்தத்துடன் கும்பாவுக்குள் கை போறதும் தெரியாது, வாய்க்குள் கை போறதும் தெரியாது, அவ்வளவு வேகம் எனக் கூறுவது ஒரு பசித்த வயிற்றின் வேகத்தினை வாசகர்களுக்கு உணர்த்துகிறது.

கொத்தாளியின் சாப்பாடு சம்மேளனம் நடந்து கொண்டிருப்பதை ஒரு ரசிக மனோபவத்துடனே அணுகுகிறார் கதாசிரியர் சிறுவன்.

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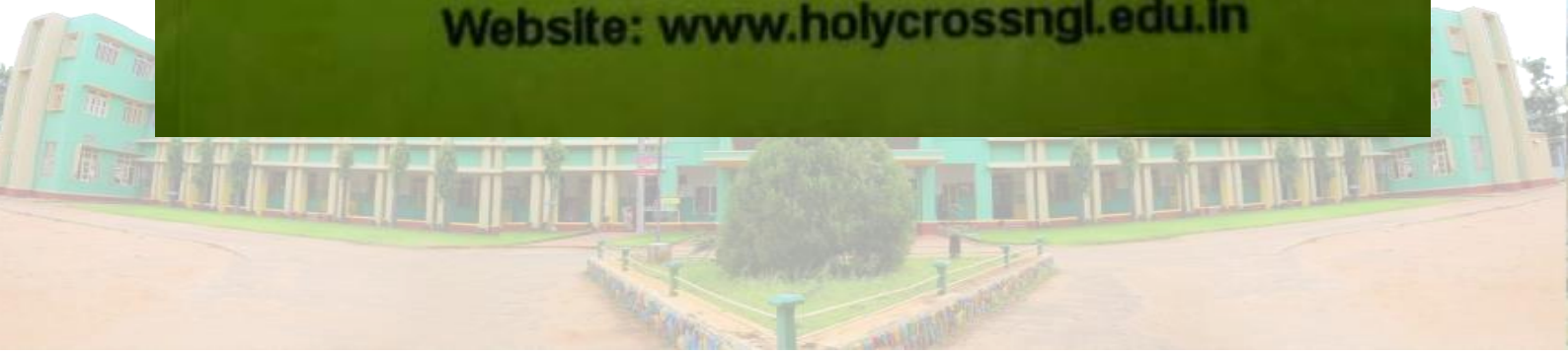
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நெய்தலின் இலக்கியத் தடயங்கள்

முனைவர் சி.ஆன்சிமோள்

உதவி பேராசிரியர்,
தமிழ்த்தறை, (சுயநிதி)
திருச்சிலுவை கல்லூரி,
நாகர்கோவில்.

முன்னுரை

தமிழர்களின் உள்ளத்து உணர்ச்சிகளையும் வேட்கைகளையும் புலப்படுத்துவதற்கு இயற்கையைப்பின்னணியாகக் கொண்டுபாடப்பட்டவைசங்க இலக்கியங்கள்.சங்கபாடல்களில் மனிதசமுதாயத்தின் உயர்ந்தகருத்துக்களையும் வாழ்வியல் விழுமியங்களையும் காணமுடிகிறது.சங்கஅகப்பாடல்களில் குறுந்தொகையில் நெய்தல் சார்ந்தவரலாற்றுச்செய்திகள் மிகுதியாகக் காணப்படுகிறது.இக்கட்டுரையில் நெய்தல் நிலப்பாடல்களில் இடம்பெற்றுள்ள இலக்கியத் தடயங்களைவிரிவாகஆய்வுசெய்கிறது.

நெய்தல் புலவர்கள்

நெய்தல் திணையில் பலபுலவர்கள் பாடல்களைப் பாடியுள்ளனர்.ஐங்குறுநூறு,குறுந்தொகை,நற்றிணை,அகநானூறுகலித்தொகைஆகிய அக நூல்களில் பலபாடல்கள் நெய்தல் திணையில் பாடப்பட்டுள்ளன.அம்மூவனார் என்றபுலவரே கடல் சார்ந்தசமூகவரலாற்றைமிகுதியாகப் பாடியுள்ளார்.குறுந்தொகையில் 46 புலவர்கள் நெய்தல் திணையைச் சிறப்பித்துபாடியுள்ளனர்.கலித்தொகையில் நெய்தல்கலிப் பாடல்களைப் பாடியவர் நல்லந்துவனார்.

முதற்பொருள்வெளிப்பாடு

நெய்தல் திணைக்குஉரியநிலமானகடலும் கடல் சார்ந்தபகுதியும் பாடல்களில் வெளிப்படும் தன்மையைகாணமுடிகிறது.

“முழங்குகடல்

திரைநருமுத்தம் வெண்மணல் இமைக்கும்” (ஐங்குறுநூறு-105:1-2)

கடற்கரைபெருநீர் அழுவம் பௌவம் போன்றசொற்களால் நெய்தல் நிலம் குறிக்கப்படுவதைப் பலபாடல்களில் காணமுடிகிறது.

“பெருங் கடற் கரையதுசிறுவெண் காக்கை” (ஐங்குறுநூறு-170:1)

“பெருநீர் அழுவத்துஎந்தைதந்த”...(அகநானூறு-20:1)

“தென்திரைப் பௌவம் பாய்ந்து” (ஐங்குறுநூறு-121:3)

கடல் வாணிகம்

தொல்காப்பியம் கடல் வாணிகத்தை“முந்நீர் வழக்கம்”எனக் குறிப்பிடுகிறது.கப்பல் கட்டியதச்சர் “கலம் புனர் கம்மியர்”எனப்பட்டனர்.படகுதிமில் அம்பிபோன்றபெயர்கள் சங்க இலக்கியங்களில் இடம் பெற்றுள்ளன.கி.பி.60இல் வெளிவந்த“பெரிபுளுக”எனும் தொண்டி,குமரி,முசிறி,கொற்கை,புகார் ஆகியதுறைமுகங்கள் பற்றியசெய்திகள் இடம் பெற்றுள்ளன.முழங்குகடல் முத்தும் சங்குவளையல்களும் பரதவர்களின் கூலமும் தீம்புளியும் வெள்ளூட்டும் விற்றுக் குதிரைகளைவாங்கிவந்ததாகமதுரைக்காஞ்சி குறிப்பிடுகிறது. “கலங்கரைவிளக்கம்”பற்றியகுறிப்புகள் பெரும்பாணாற்றுப்படையில் உள்ளன.

கடற்கரைத் தாவரங்கள்

கடல் பகுதியில் உப்புநீர் ஆழ்ந்துள்ளதால் இந்நிலத்திற்கேஉரியதாவரங்கள் குறுந்தொகையில் மிகுதியாக இடம்பெற்றுள்ளன.புலவர்கள் கடல்சார் பகுதியில் காணப்படும் பூக்கள்,மரம்,செடி,கொடிகள்,பறவைகள் போன்றவற்றைபாடலோடு இணைத்துப்பாடியுள்ளார்.கடற்கரைப்

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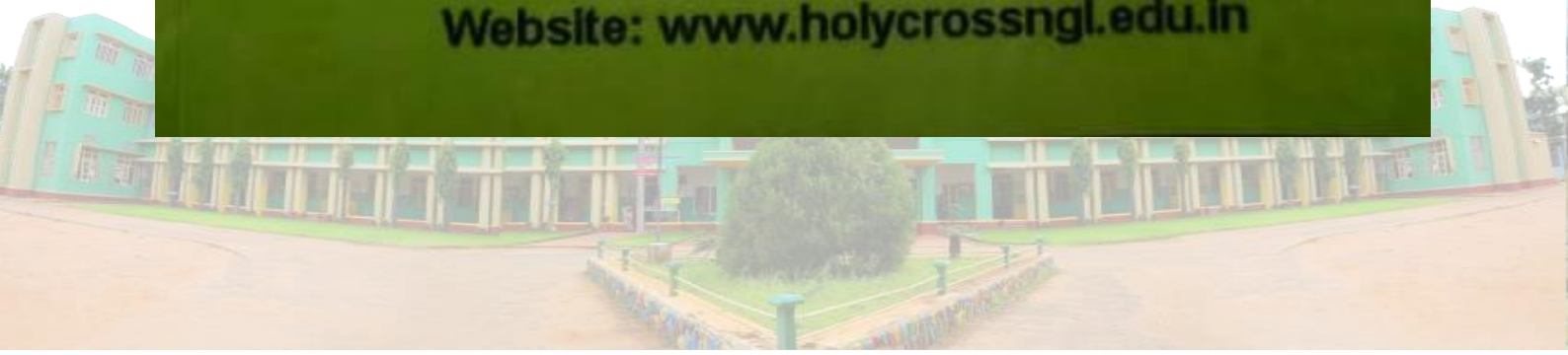
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பத்துப்பாட்டும் வாழ்வியற் கட்டடக்கலையும்

ம. ஜாஸ்மின் வினோஜா

உதவிப் பேராசிரியர்
திருச்சிலுவை கல்லூரி
நாகர்கோவில்

முன்னுரை

மனிதர்கள் செய்கின்ற ஒவ்வொரு தொழிலும் கலைகளாகவே பார்க்கப்பட்டன. அக்கலைகள் அந்தந்த நிலத்தில் வாழும் மக்களின் வாழ்வோடு பின்னிப் பிணைந்து காணப்பட்டன. தொழில் சார்ந்த கலைகளாகப் பார்க்கப்படும் கட்டடக்கலையானது செங்கல், சுண்ணம், கற்கள், மரங்கள் என உயிரற்றப் பொருட்களால் கட்டப்பட்டாலும், அக்கட்டடங்களுக்கு உயிருள்ள மனிதர்களின் வாழ்க்கை முறையால் உயிர் கொடுக்கப்பட்டது. கோயில் அமைப்புகள் தான் அனைவராலும் காண்பதற்கேற்ப அழகூட்டப்பட்டு பல வடிவங்களில் கட்டப்பட்டன. கட்டடங்கள் உயிரற்றப் பொருட்களால் உருவாக்கப்பட்டாலும் அதனுள் வீற்றிருக்கிற இறைவன் அனைத்து உயிர்களுக்கும் வித்தாய் இருக்கிறார் என்பது நம் கலையின் அற்புத வெளிப்பாடு ஆகும். அதேபோல் மன்னர்களின் அரண்மனைகள் வசதிப் படைத்த மக்களின் மாட மாளிகைகள் ஏழை மக்களின் குடிசைகள், வீடுகளை அரண்மனைகளை, கோயில்களை காவல்காக்கும் பெரிய மதில்கள் என அனைத்தும் மக்களின் வாழ்வியலோடு கலந்து காணப்படுகிறது. எவ்வாறு கட்டடங்கள் வாழ்வியற் சிறப்பு பெறுகிறது என்பதைப் பத்துப்பாட்டு மிகச் சிறப்பாக எடுத்தியம்புகிறது.

அரண்மனைகள்

அரண்மனைகள் என்பது அரசர்களின் வாழ்விடமாகும். பாதுகாப்புடன் கூடிய மிகப்பெரிய மனைகள்தான் அரண்மனைகள் என சிறப்பிக்கப்படுகிறது. இவ்வரண்மனைகள் அரசர்கள், காவலர்கள், விருந்தினர்கள், தொழிலாளர்கள், குருக்கள் என பல்திற மக்கள் பயன்பாடோடு அமையப்பெற்றிருக்கும் எல்லா கால சூழல்களையும் உள்வாங்கி வெயில், மழை, காற்று எதுவாயினும் தாங்கும் சக்தியோடுதான் அரண்மனைகள் அமைக்கப்பட்டிருக்கும். மேலும், எதிரிகளின் வரவை தெரியவும், எதிரிகள் வந்தால் தப்பியோடுவதற்கான மாற்று வழிகளோடுதான் அரண்மனைகள் அமைக்கப்பட்டிருக்கும்.

அரண்மனைகளைக் கட்டத் துவங்கும் நேரம் நண்பகல் நேரமாகத்தான் இருக்கும். கதிர்வன் எப்பக்கத்திலும் சாயாமல் உச்சியிலே இருக்கும் நடுப்பகலில்தான் மனையைச் சதுரிக்கத் தொடங்குவார்கள். மனையடி சாத்திரங்களைக் கற்றுறிந்த நிபுணர்கள் கூர்மையாக ஆராய்ந்து கயிறுபிடித்து அழகிய மனையை சதுரிப்பார்கள். திசைகளையும் வணங்கி தெய்வத்தையும் வேண்டிக்கொண்டு மன்னர்கள் வாழ்வதற்கு ஏற்றபடி அரண்மனையின் பல பகுதிகள் இருக்கும்படி அமைப்பார்கள் என்பதை

“ஒருதிறம் சாரா அரைநாள் அமயத்து
நூலறிபுலவர் நண்ணிதின் கயிறிட்டித்
தேளம் கொண்டு தெய்வம் நோக்கி
பெரும் பெயர் மன்னர்க்கு ஒப்ப மனைவகுத்து” (நெ.வா 75-78)

என்ற பாடல் வரிகள் விளக்குகின்றன.

கோட்டை வாயில்கள்

கோட்டை வாயில்கள் என்பது அரண்மனையின் பாதுகாப்பு கருதி கட்டப்படுவதாகும். கோட்டைகளும் வாயில்களும் அகலமாகவும், உயரமாகவும் அமைந்திருக்கும். நல்ல வேலைப்பாடுகள் அமைந்த பெரிய இரட்டைக் கதவுகள் வாயிலில் அமைந்திருக்கும் உட்டறம் தாழ் போடும்படியாக இவை செய்யப்பட்டிருக்கும். ஏனெனில் கோட்டைக்குள்ள்தான் அரண்மனை அமைந்திருக்கும். எனவேதான் உள்தாழ் மட்டுமே பாதுகாப்புக்காகத்தான் இந்த கோட்டைகள் அமைக்கப்பட்டிருக்கும். எனவேதான் இணைத்து இருக்கில்லாமல் இடப்பட்டிருக்கும். வேலைத்திறம் மிக்க தச்சனால் நன்றாக இணைத்து இருக்கில்லாமல் செய்யப்பட்டிருக்கும். வாசல்கால் உயரமாக இருக்கும். அது வெண்சிறு கடுகும், எண்ணெய்யும் பூசி வணங்குகின்ற தெய்வ உருவத்தைக் கொண்டதாக இருக்கும். வெற்றிக்கு அடையாளமாக

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Curriculum Designing: Challenges of the present time

P.T. ANBU HANNAH DORA

ASSOCIATE Professor of French
Holy Cross College (Autonomous)
Nagercoil

1. Introduction

The changes the world has witnessed in the last two or three decades are enormous and amazing. The changes are visible in all compartments of life with higher education as no exception. Needs, demands, requirements and expectations are different in the ICT driven modern world of technology. These changes exert massive pressure on higher education which faces the mammoth demand from the world to cope with the changes. The world that was giving importance to knowledge till the first part of the twentieth century, slowly started demanding skill from the younger generation. This made a strong impact on higher education in all its components and educational planners and thinkers realized the inevitability of bringing about revolutionary changes in curriculum planning, teaching-learning and also testing and evaluation.

Today the world has shrunk into a global village and higher education is expected to cater to the requirements and stipulations of global job market. This made policy makers of higher education all over the world give a serious thought to curriculum designing. What the world expects today is a curriculum that is relevant, useful and challenging which satisfies the expectations of the younger generation and caters to the needs of the world.

2. Curriculum designing in India in the globalized context

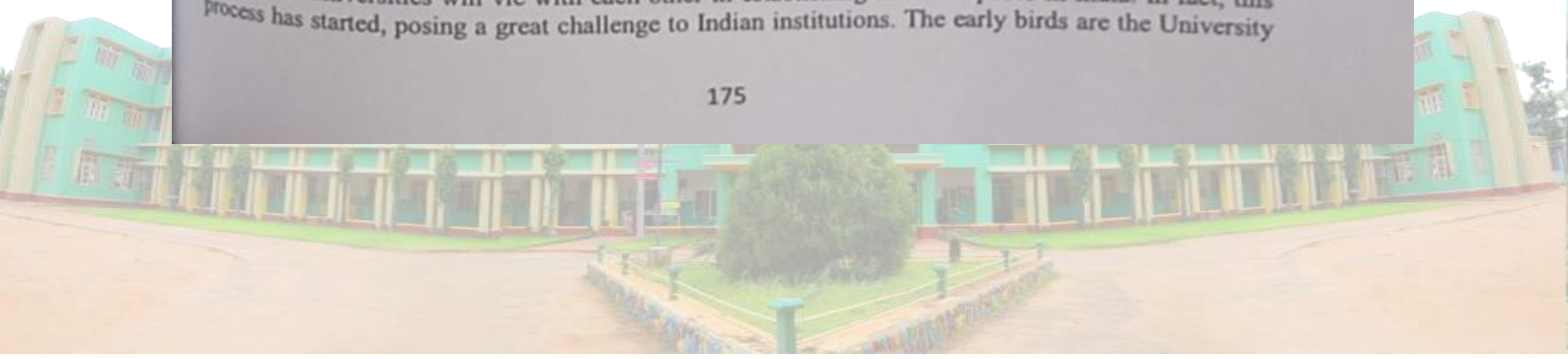
Higher education in India has experienced a rejuvenation in the post accreditation era. Instituting National Assessment and Accreditation Council has prompted institutions of higher learning to strive for quality and excellence. Institutions are made to move forward according to the vision and mission statements they are encouraged to design road maps for themselves. Universities and colleges started discussing Core Values and Graduate Attributes realizing their responsibility towards the younger generation. This impacted all compartments of higher education, especially curriculum planning and designing. The academia realized its greater responsibility in offering challenging curricula that meet the needs and demands of the ever changing world and naturally teachers as the backbone of the educational system realized the vital role they have to play in designing relevant and appropriate curricula.

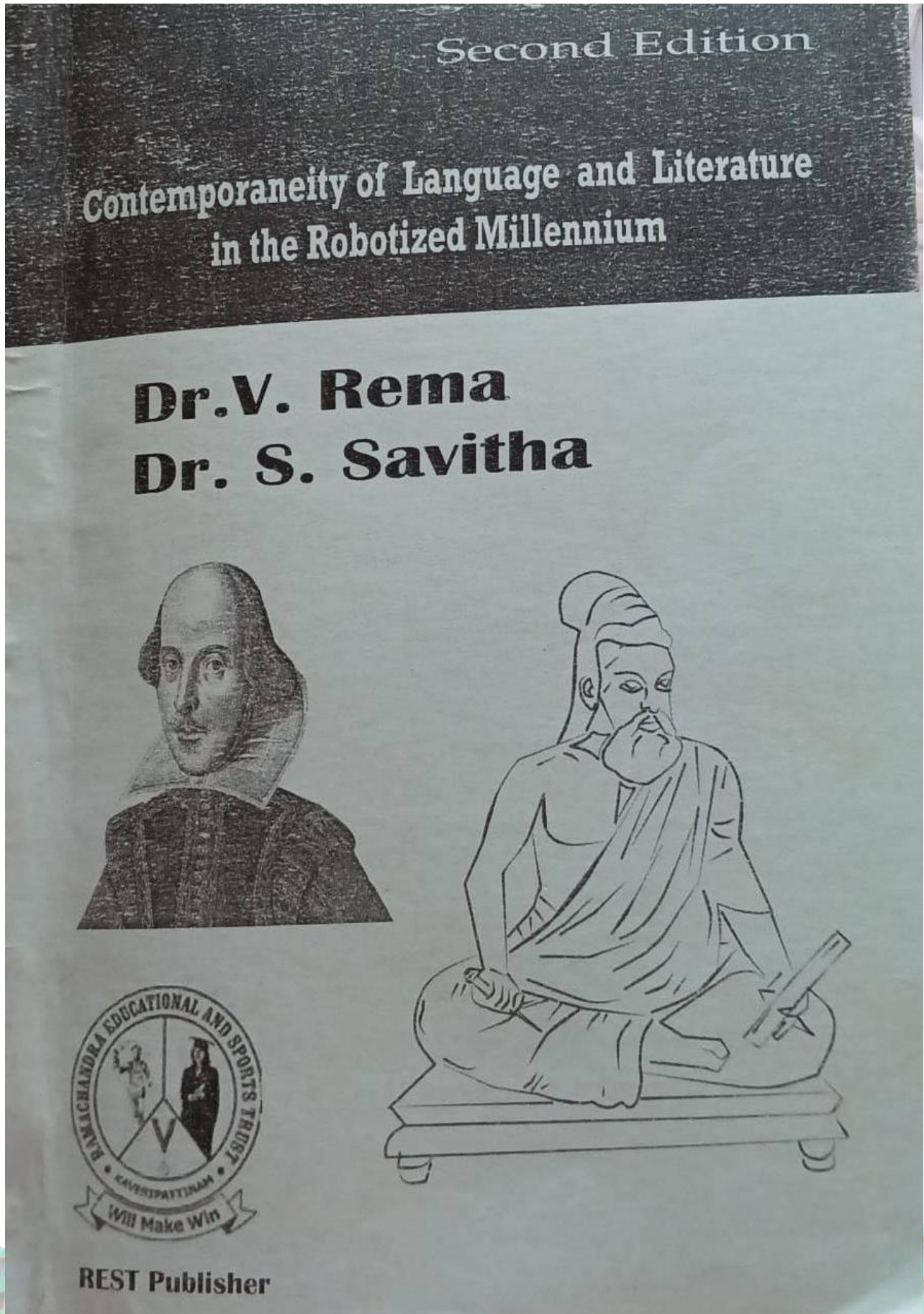
A new feature of curriculum designing in India today is that it has to bear in mind the global job market. The changes to be brought about should therefore be raised to global standards and the students who pass through the portals of our institutions should have global competency. The curriculum and the transcripts job seekers from India present in the international job market should have the quality and content that can be equated with any university that is considered to have world class standards. This challenge and competition have made the role of teachers in curriculum designing very important.

In the University system of India of the past, the responsibility of curriculum designing was restricted to a few in the designated bodies and planners and policy makers of higher education. Today with the conferment of the status of autonomy and university to institutions, the responsibility of teachers has become greater.

3. Internationalization of Higher Education and Curriculum Designing in India

Modern world, with its easy access to media looks for and verifies the quality of institutions before opting for one. International student mobility is made easier today and many Indian students opt for foreign universities. The Indian Government has allowed foreign universities to have their campuses in India. Many foreign universities find in India rich market potentiality and it is expected that many world class universities will vie with each other in establishing their campuses in India. In fact, this process has started, posing a great challenge to Indian institutions. The early birds are the University





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Aimé Césaire et la littérature francophone – Un bref aperçu

Ms. P.T. Anbu Hannah Dora.

Associate Professor and Head, Department of French, Holy Cross College (Autonomous), Nagercoil-4

Résumé

Dans cet article, il s'agit de la littérature francophone, en particulier la littérature de la négritude. L'article commence avec l'introduction de la littérature francophone. Auparavant, le terme « francophone littérature » désignait la littérature des pays francophones hors de France, mais en bref, la littérature francophone est une littérature écrite en langue française. Puis, une brève étude est réalisée dans l'article pour retracer l'histoire du mouvement de la négritude, suivie de la liste des pionniers de ce mouvement. Le terme « littérature francophone d'Afrique » désigne la littérature africaine subsaharienne écrite en français par des auteurs vivant en Afrique ou l'étranger. L'article procède à une brève histoire de la vie d'Aimé Césaire, celui qui occupe une position bien établie dans le canon du mouvement de la négritude. Ensuite, on traite d'une partie de l'un des discours de Césaire. Le discours est intitulé comme « La négritude, une postulation de fraternité », et cela est prononcé par Césaire à Dakar le 6 avril 1966. Ce discours est une sollicitation de Césaire aux hommes blancs. Il parle du racisme et du colonialisme. Césaire nous explique les pourquoi de haine des noirs contre le racisme. Donc, avec une analyse détaillée du discours, on apprend à connaître les luttes sociales, politiques et psychologiques auxquelles font face les francophones.

Mots clés : Francophone, négritude, Aimé Césaire, racisme, colonialisme

Introduction

Tout le monde commence à parler des bienfaits et de la gloire de la francophonie. Tout d'abord, la francophonie offre l'ouverture sur la diversité culturelle. Il s'agit d'une certaine conception de l'humanisme lié au développement : l'affirmation des valeurs de la solidarité et de partage.

En ce qui concerne la littérature française, on trouvait l'existence d'une pluralité. C'est-à-dire, malgré son origine, toute écriture de valeur littéraire était considérée comme de la littérature française. Mais, depuis une quinzaine d'années, le terme « littératures francophones » a progressivement remplacé d'autres termes comme « littératures de langue française hors de France » ou « littératures d'expression française ». Donc, Qu'est-ce que la littérature francophone ?

Historiquement, le terme « francophone littérature » a été utilisé pour désigner la littérature des pays francophones hors de France, mais l'usage moderne comprend toute littérature écrite en français. En termes simples, la littérature francophone est une littérature écrite en langue française.

La littérature de la négritude

Le terme « littérature francophone d'Afrique » désigne la littérature africaine subsaharienne écrite en français par des auteurs vivant en Afrique ou l'étranger. En Afrique, ce concept de la littérature francophone a gagné en popularité dans les années 1960 sous l'égide de Senghor et Habib Bourguiba. Ces hommes ont plaidé pour le début d'une nouvelle organisation reliant toutes les nations partageant la langue et la culture françaises.

Avec l'émergence des écrits littéraires dans les pays francophones, les critiques ont commencé à parler de la littérature québécoise, belge, maghrébine, antillaise française et francophone d'Afrique. À l'époque coloniale, la littérature francophone d'Afrique était dominée par le mouvement de la négritude bien que certains critiques retracent ses débuts à « Batouala » de René Maran. Il est à noter qu'autrefois, les écritures par les Africains en français étaient classées comme « la littérature coloniale ».

Et puis, dans les années 1930, les étudiants noirs des Caraïbes et des colonies africaines françaises se sont rebellés contre la colonisation qui a dévalué leurs racines culturelles. Ce mouvement a plu même les écrivains français comme Jean-Paul Sartre, Simone de Beauvoir, André Gide et André Breton.

L'une des principales raisons qui ont ouvert la voie à ce succès est les écrits de quelques hommes qui ont mis en évidence les idées principales de ce grand mouvement littéraire. Et Aimé Césaire fait partie de ces écrivains. Il est un écrivain et homme politique français qui est né le 26 juin 1913 à Basse-Pointe. Son père était instituteur et sa mère était couturière. Son père disait de lui, « Quand Aimé parle, la grammaire française sourit... ». On appelle Césaire comme « Père du mouvement de la Négritude ». Il influence africains et noirs-américains dans leur lutte contre « le colonialisme » et « l'acculturation ». En réaction à l'oppression culturelle du système colonialiste français, Aimé Césaire commence à écrire en 1936 et forge le concept de « Négritude ». Il dit, « Je suis de la race de ceux qu'on opprime ». Ses chefs-d'œuvre célèbres sont *Cahier d'un Noir*, *En 1934*, *Les armes miraculeuses* et *Discours sur le colonialisme*. En 1934, il a fondé le journal intitulé *L'Étudiant Noir*. En 1943, il a fondé la revue *Tropiques*. Il crée « Le Parti Progressif Martiniquais (PPM) » qui insiste l'autonomie

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A Historical Review on Rock Architecture of Buddhism

By **Dr. C. R. Siva Kala**, Assistant Professor, Department of History, Holy Cross College (Autonomous), Nagercoil.

Abstract

Ashoka expanded Buddhism as State religion to eliminate social tension and sectarian conflicts and to promote a harmonious relationship between the diverse elements of the empire. So, Ashoka and the rulers after him had built many Chaityas, Viharas and Stupas. These are often called 'Caves' and 'Cave Temples'. James Fergusan called them as 'Buddhist Architecture'.

Introduction

People who had belief in Buddhism worshipped the symbolism of Buddha's messages, his life history and personality. Also they worshipped the holy places like Kapilavastu where Buddha was born; Gaya where he had enlighten; 'Kashi; where he preached about his religion first time and 'Kushi' where he lost his spirit. There they established monuments such as Pillars, Chaityas, Viharas and Stupas. They reflects the 'Jataka Stories' in the form of sculptural monuments. Hence the Buddhist Architecture became famous among the people.

Technical Skill in Buddhist Architecture

Well - Planned temples and monasteries skillfully chiseled out of the solid rock with infinite forethought and patience. The term 'rock - architecture' has been suggested for this type of Architecture by Percy Brown. The rock architecture of Buddhism is divided as Chaityas, Viharas and Stupas.

Chaityas

The Chaitya was a temple or place of worship. In early Buddhism, the object of worship was generally at stupa and the stupa was surrounded by thatched roof. It was the early Chaitya. Later the thatched roof was changed by stone roof. The Chaitya was generally a large hall having two rows of pillars which divided the hall longitudinally into three divisions. Chaitya has a rectangular large hall in front side and hemi-sphere shape in the back side. Among the above three divisions, the middle was used as the place for worship and other two were the passages. The interior portion and the façade of Chaityas are decorated with sculptural ornaments. These are windows for lighting effect.

Bedse, Karle, Karheri and Nasik are the finest examples of Chaityas. Karle the largest and best of the series, is 124 feet long, 46.5 feet wide and 45 feet high. The Pillars are decorated with beautiful ornaments.

Viharas

The Viharas are monastic houses excavated near Chaityas. Here the monks found freedom to pursue their religious observances. In early, Viharas were made by wood which looked like a hut. Later they were cut out from rocks. The rock-cut Viharas have multistoreys. Also they have decorated

Ajanta is the best example for Vihara. The Second cave of Ajantha carved perhaps in fifth century A.D. It contains cells which served as dormitories for monks and containing an image of Buddha and a stupa. There are three entrances and two windows. There are four rows of pillars for supporting the roof. Two pillars are in the centre. This cave centre has 24 rooms with 9 feet side and

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Basic Principles of Jacksonian Democracy

Dr. Regi, S.,

Assistant Professor of History,
Holy Cross College (Autonomous)
Nagercoil.**Abstract**

The democratic ideology that was followed and practiced by the seventh president of the United States of America Andrew Jackson was called as Jacksonian Democracy. It was considered as one of the major political philosophies of the United States of America during the 19th century. The basic principle of this Jacksonian Democracy was to expand the voting right to most of the white men over 21 years of age and to restructure a number of federal institutions of the United States of America. This philosophy became popular worldwide for a generation. This lasted from 1828, when Andrew Jackson was elected as the President of the USA, to 1854, when the issue of slavery became a dominant issue in the politics of the USA. In this article an effort has been taken to bring out the basic principles of the Jacksonian Democracy in a nutshell.

Key Words: Andrew Jackson, the United States of America, democratic ideology, political philosophy, Democratic Party, Republican Party.

Introduction:

The Jacksonian Era, as it was called by the historians and the political scientists, was started with the presidential election of 1824. Though Jackson was defeated with thirteen vote margin by John Quincy Adams, he gained popularity within the next four years and was elected as the seventh President of the United States of America in 1829 with the clean sweep of 178 to 83 votes. After this victory he became the king of the mob. He was considered as one of the most forceful characters among the presidents of the USA. Jackson had firm faith in the principles of democracy. With the triumph of Andrew Jackson, the political power of few in the USA was shifted to the many. Though his political enemies depicted him as a tyrant, he emancipated the power of the office of the President in the USA to greater heights with moderation.

General Principles:

The bases of the Jacksonian democratic ideologies were the equal protection of law, majority rule and the welfare of the community over an individual. The Jacksonian democracy was constructed on the following heads. They are Expanded Suffrage, Manifest Destiny, Spoils System, Opposition to Banking and the Theory of Laissez-faire.

Expanded Suffrage:

Andrew Jackson and his followers believed the universal white male suffrage should be extended to all the white men of the USA. Until 1828, property and tax payment was fixed as the basic requirement for voting. However by the end of 1820s a shift had been taken place in favour of universal white male suffrage. Because President Andrew Jackson thought that the young and common men are favouring him rather than the aristocrats and higher officials who were the property holders and tax payers.

Manifest Destiny:

The westward expansion during the 19th century was done by the Manifest Destiny which popularized the idea that the white Americans were the divinely ordained people to be settled in the whole of North America from the Atlantic Ocean to the Pacific Ocean. Though the Free Soil Jacksonians had some opposition regarding the issue of slavery, Andrew Jackson had a firm faith on this theory. Jackson looked at the Indian question in terms of military and legal policy, not as a problem due to their race. When it became a matter of state sovereignty versus tribal sovereignty he went with the states and forced the Indians to fresh lands. Further, Jackson's Indian policy was based mainly on the prospect of voluntary emigration rather than forcible immigration.

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INDIAN WOMAN THROUGH THE AGES**K.Baby***Assistant Professor, Department of History, Holy Cross College (Autonomous),
Nagercoil.***ABSTRACT**

The status of women in India has been subject to great many changes over the past few millennia. From a largely un known status in ancient times through the low points of the medieval period, to the promotion of equal rights by many reformers the history of women in India has been eventful. Woman of any nation is the mirror to its civilization. If women enjoy good and sense of responsibility while a decadent image conjures up if the opposite is true. The story of Indian women is as old as the history of Indian civilization.

INTRODUCTION

One of the key Millennium Development Goals is the elimination of differences in the extent to which women can participate in social, legal, political, institutional and economic development process. Modern women in the present age occupy in commendable ranks and attain success consistently in all the fields such as Sports, Politics and Administration etc.

LANCIENT INDIAN WOMEN**1.1. ARYANS**

In ancient times Aryans were the main inhabitant of India. These people were mainly Brahmins and they used to give the status of goddess to the women. At that time women enjoyed no less than status of "Lakshmi"(goddess of wealth) in the households. A famous Sanskrit shloka (form of Hindu verse) signifies the status of women in that era, "Yatra naryastupujyante, ramantetatra devata" meaning, the place where women are worshipped, god themselves in habit that place.

In fact no religious ritual of Hindu Brahmins was supposed to be complete without the presence of the women. When Lord Rama was performing "Ashvameddha yajna" his wife was not with him and he had to use the gold idol of his wife to compensate for her absence.



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SAFETY AND SECURITY NEEDS OF GIRL CHILDREN

Vellaisamy.P¹, Dr. K.S.Soumya²

¹Full-Time Ph.D. Scholar, Department of History, Holly Cross College (Autonomous), Nagercoil- 629 004.ell:8489703309. E-mail: p.vellaisamy93@gmail.com

²Guide:, Asst. professor, Department of History, Holly Cross College (Autonomous) Nagercoil-629 004 (Manonmaniam Sundaranar University, Tirunelveli.)

INTRODUCTION

Children are our nations most precious resource, but as children, they of ten lack the skills to protect themselves, it is our responsibility, as parents and teachers, to safeguard children and to teach them the skills to be safe. This pamphlet is designed to help you told to your children about how to protect themselves against abduction and exploitation.

BASIC NEEDS OF ALL CHILDREN

Early childhood development theorists speculate that newborn infants, protected and nurtured in uterus, enter the world with the expectation that this kind of care and protection will continue. British brings about a sudden change in environment. Because humans are born virtually helpless. They require a longer period of dependent caretaking than do the young of any other species. Very quickly, the infant begins to develop and awareness that the meeting of its needs depends on someone independent from herself. If its basic needs are not met b its caretakers, the infant soon becomes anxious about what will happen to him/her.

If a child is to survive and achieve satisfaction during adulthood, the following six basic needs must be met during infancy and childhood;

- Security,
- Nurturance,
- Stimulation,
- Continuity,
- Reciprocity, and
- Value orientation.

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WOMEN AND MEDIA

Reshma U.R.^a **K.S. Soumya^b**,

^aResearch Scholar in History.Reg. No : 18213041052014, Holy Cross College (Autonomous), Nagercoil.

^bAssistant Professor of History, Holy Cross College (Autonomous), Nagercoil.

Manonmaniam Sundaranar University, Tirunelveli.

ABSTRACT

The most prominent issue regarding social emancipation is the social movement championing the cause of women. The important aim in women empowerment is to develop the quality of women. But the step taken towards the progress of women has been handicapped by social political and economic spheres of present day polity. The media though seem to support women's emancipation has not being instrumental in supporting the movement for women's emancipation. Women in India has been neglected to a secondary position. Male domination and vested interest of the ruling group have made the legitimate rights of women as null and void.

INTRODUCTION

Women in India are viewed as power (Shakti). Women literally are accepted as the origin of power but in reality they are found to be neglected and helpless. Women have the role of wide a while are mother but she has no power in decision making in the family she has very little choice even in the selection of there are partners. In under developed countries ignorance and pressure from tradition combine together and develop in equalities. Women suffer and reduced to a level of survival. Women are under great social limitations.

Women work throughout but there works in services are not recognized. Women have the equal capacity dislike man. Man and their services are considered as superior to women more salary is given to men for the same work done by men and women. This has been responsible for the mental and physical problems of woman at work. Promotions are given only to men. Work distribution and working hours are more to women than men. But they get lesser wages than men. It should be recognized that gender equality is not the problem of women alone but it is the problem of the nation as a hole.

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WOMEN IN INDIA - A HISTORICAL PERSPECTIVE

R.Suji

Guest Lecturer, Holy Cross College (Autonomous), Nagercoil.

ABSTRACT

The status of women in India has been subject to many changes over the span of recorded Indian History. Their position in society deteriorated early period onwards and their subordination continued to India's early modern period. Many laws were passed uplift the condition of women in the history of later part of British rule. Women's rights under the constitution of India mainly include equality, dignity and freedom from discrimination, India has various statutes governing the rights of women after independence. Many steps were taken by the government to protect the women rights and they occupied higher positions. Another side crime against women such as rape, acid throwing, dowry killings, honour killings, cyber crime and the forced prostitution of young girls has been reported in India. So to avoid this, women should co-operate with the efforts taken by government and achieve the goal. There is a need to give awareness and protection to women against their all harassments.

INTRODUCTION

Women have faced so many difficulties from the beginning of the historical India. Women were given much importance in the society and enjoyed considerable freedom. Practices such as female infanticide, dowry, child marriage continued till colonial rule in India. Later time of the British rule, these practices were restricted through passing various laws.

EARLY PERIOD

In ancient Indus Valley Civilisation of India, evidences show the worship of the mother goddess. During the Rig Vedic period the women enjoyed much freedom. Their position was almost equal to that of men. Women got education and composed songs. The Rigveda mentions the names of learned women like Lopamudra, Ghosa, Apala and Vishvavara. The widow was allowed to remarry and Dowry system was unknown. The later part of Vedic period women lost their freedom and the system of dowry introduced in this period. The women were denied the



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**ROLE OF NGOS IN THE SOCIAL EMPOWERMENT OF SHGS WOMEN -
A STUDY IN NORTH CHENNAI OF TAMIL NADU**

S. Panimaya Mercy

*Assistant Professor, Department of Economics,
Holy Cross College (Autonomous), Nagercoil.*

Abstract

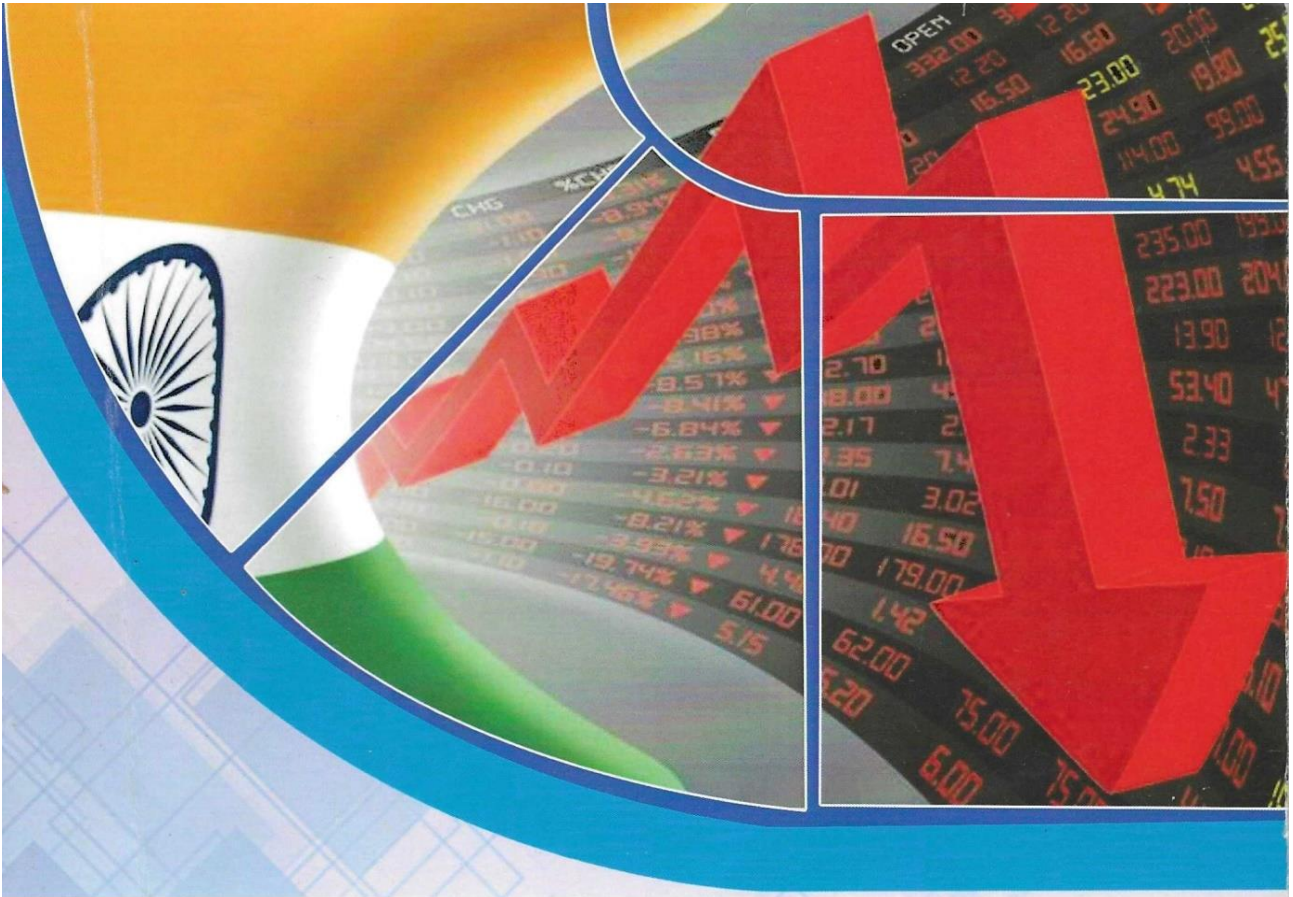
In India, several approaches are used for the empowerment of poor and marginalized. The focus is both individual growth and development and macro – system change, using interventions at the individual, interpersonal, marginalization and community levels. This multiple approach of empowerment is accomplished through interventions like SHGs, which target individuals, groups, families and communities to become more effective in their social environment. In this regard, NGOs play vital role in empowering women through awareness building, capacity building and organizing women that leads to transformation of equal relationships and increased decision making power at home and community. Hence the present study analyses the role played by NGOs in North Chennai of Tamil Nadu. . The study reported that NGOs are playing vital role in the formation of SHGs, motivating women to join the groups, linking the groups with the banks for microfinance, providing training facilities, creating awareness about health and sanitation, social celebrations, training on problem solving, decision making, women rights etc. It is revealed that various NGOs are working in same place and sometimes they create same kind of awareness programme in the same area. Therefore the present study suggests that there should be co – ordination between these NGOs in the study area.

I. INTRODUCTION

NGOs in India play vital role in the development of country. They are the nonprofit organization working for the welfare of marginalized, downtrodden and poor people. These organizations are performing lot of functions and now days they are the reason for the success of micro finance through forming SHGs. Through microfinance, women become economically empowered. Economic empowerment is the basic for women empowerment. If women are economically empowered, they will become socially empowered.

STATEMENT OF THE PROBLEM

The concept of empowerment of poor women is a relatively new especially in the realm of development. It is a process of changing the existing power relations in favour of the poor and the marginalized women. It is a long term process that requires changes in knowledge, attitude and behavior of not only women, but also

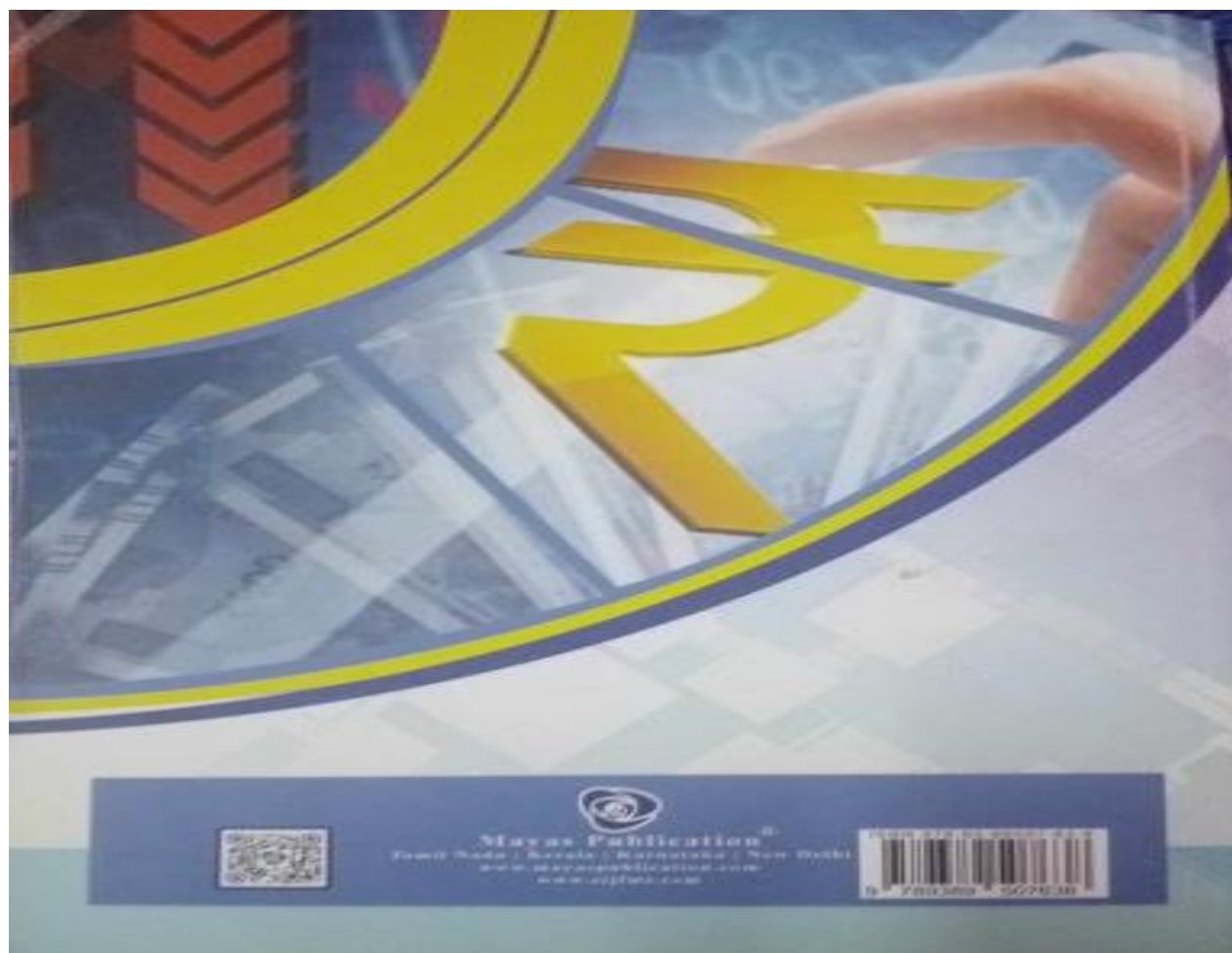


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WOMEN ENTREPRENEURS - THE JOB CREATORS

Dr. J. M. VENKTA CHARLES

*Assistant Professor, Department of Economics,
Holy Cross College (Autonomous), Bangalore*

Abstract

Women have emerged as an important part of industrial growth. To achieve equal status with men, women have to come out of their traditional roles and responsibilities and have to create an identity for themselves, assuming a variety of functions. To make this dream a reality, women have to consider their labour not as drudgery but as a delight. The participation of women folk in the development of Indian economic process can be mainly categorised into four segments. They are employment in an unorganised sector, employment in an organised sector, self-employment and an entrepreneur. Emergence of women entrepreneurs are considered to be closely linked to social, cultural, religious and psychological variables and these changes seem to have become acceptable norms in the context of women at work in the Indian situation today with more and more women participating in the economic development and women empowerment. Many factors like urbanization, globalization, innovative measures, technical progress, women education, MNCs etc have profoundly changed the traditional conditions even in developing countries especially in India.

Keywords: Economic development, Self-employment, unorganised sector, Emergence.

1. INTRODUCTION

"WOMEN ARE NOT JOB SEEKERS BUT WOMEN ARE JOB CREATORS"

In the Indian context there is the sociological bias and the women folk are discriminated against men in many of the Indian communities and religions. It is viewed that they are meant to carry out only certain duties pertaining to household and child rearing and are deprived of even the legitimate rights in the society. Since independence, the implementation of the various programmes and policies executed in support of the women with the objective of improving their social and economic status, together with the increasing level of education among the members of the society, socio-cultural belief still persists and considers women below man in the social status. Hence, they cannot achieve full economic or social freedom and this discrimination varies across the country. This discussion provides the conclusion that the success of their entrepreneurial venture depends greatly on the level of

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A STUDY ON SMALL SCALE INDUSTRIES

S.CHITHRA LEKHA

REG NO:19113041032003

Ph.D Research scholar, Holy cross college(Autonomous), nagercoil
Guide: **Dr.S.Jeni Sanjna** Assistant professor, Department of Economics
Holy cross college(Autonomous), Nagercoil
Manonmaniyam sundharanar University ,Thirunelveli

Abstract

Small scale industries, if developed, would be in a position to contribute to capital – formation in the country. As we have seen, a given amount of capital generates more employment and value in small-scale than large scale industries. Though the propensity to consume of the people newly employed in small scale industries would be high it would nevertheless result in increase in their efficiency. Also these small scale industries are supposed to be modernised. Naturally, with an increase in their efficiency and productivity, the rate of saving would eventually rise. By increasing its contribution to capital formation the small-scale industries sector will be in a position to play an increasingly important role which will be very similar to the one played by small-scale industries in Japan and other developed countries.

Introduction

More, recently, enhancing small scale industries has been viewed as an effective way of fostering the private sectors contribution to both the growth of the equity objectives of development. Small scale industries play a key role in the industrialisation of developing country. This is because they provide immediate large-scale employment and have a comparatively higher labour-capital ratio, they need a shorter gestation period and relatively smaller markets to be economic, they need lower investments, offer a method of ensuring a more equitable distribution of national income and facilitate an effective mobilisation of resources of capital and skill which might otherwise remain unutilised, and they stimulate the growth of industrial entrepreneurship and promote a more diffused pattern of a ownership and location.

Meaning of Small scale Industry

The role of small-scale industries is one of the most important features of our planned economic development. Before discussing the performance of Indian small-scale industry and the investment opportunities for the foreigners in the sector, the understanding of the concept of SSI is relevant. According to the micro, small and medium enterprises development. Act 2006, the micro, and small and medium enterprises that are engaged in the manufacture or production of good pertaining to any industry specified in the first schedule to the industries developments and regulation Act, 1951 and service enterprises.

Definition of Small Scale Industry

The definition of small industry is an important aspect of Government policy as it identifies the target groups. The first official criterion for small-scale industry dates back to the second five year plan when it was in terms of good investment is land building, plant and machinery and the strength of the federation sources.

The term “small scale industries”, has been defined in three ways. The conventional definition includes cottage and handicraft industries which employ traditional labour intensive methods to produce traditional products, largely in village households. The employ none or almost a few hired hands. The handloom textile industry is an example. Though once famous this sector has been steadily declining

Global Level of Small Industry



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AN OVERVIEW OF POVERTY ERADICATION PROGRAMMES IN INDIA

Sr. Class, II M.A Economics,
Dr. J.M. Vinitha Charles, Assistant Professor, Dept. of Economics,
Holy Cross College, (Autonomous.), Nagercoil

ABSTRACT

Poverty is a social phenomenon in which a section of society is unable to fulfil even its basic necessities of life. Government of India launched several poverty eradication programmes to create assets that benefit the poor and by raising the productivity of the poor through education, public health and other human resource related measures. This paper examines the overviews of poverty eradication programmes implemented in India.

Keywords: Poverty, Eradication, Policies, Alleviation

INTRODUCTION

The poverty alleviation programmes in India can be categorized based on whether it is targeted either for rural areas or for urban areas in the country. Most of the programmes are designed to target the rural poverty as prevalence of poverty is high in rural areas. Also targeting poverty is a great challenging in rural areas due to various geographic and infrastructure limitations. The programmes can be mainly grouped into 1) Wage employment programmes 2) Self-employment programmes 3) Food security programmes 4) Social security programmes 5) Urban poverty alleviation programmes. The five year plans immediately after independence tried to focus on poverty alleviation through sectoral programmes.

GOVERNMENT INITIATIVES TO REDUCE POVERTY

A number of programmes have been taken up after fourth five year plan for poverty alleviation. Development of the target group of the rural poor is the basic objective of these programmes. It falls into three broad categories: (i) Family of livelihood creation (self-employment) programs, Labour-intensive public works schemes and Income transfers in terms of kind. The poverty eradication programmes are used to create assets that benefit the poor and by raising the productivity of the poor through education, public health and other human resource related measures.

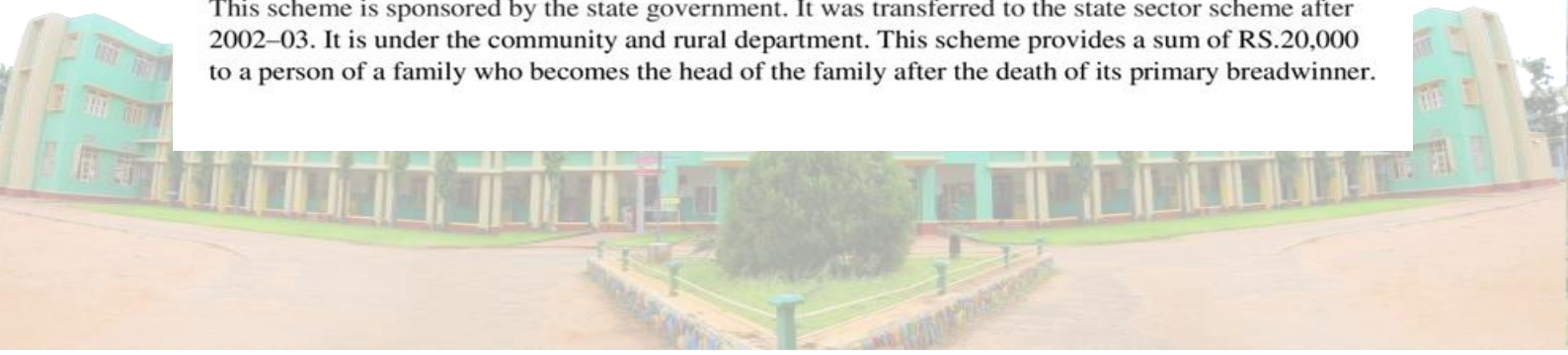
POVERTY ALLEVIATION PROGRAMMES

The Government has introduced various poverty alleviation programmes in India. They are:

SWARNAJAYANTHI GRAM SWAROZGAR YOJANA (SGSY): The main objective of the programme is to bring the existing poor families above the poverty line. The expenditure under SGSY is shared by the Centre and the States in the ratio of 75:25. Subsidy will be provided at 30 per cent of the project cost subject to a maximum of Rs. 7,500 and 50 per cent for SC/ST subject to a maximum of Rs. 10,000. For groups, the subsidy is 50 percent.

NATIONAL OLD AGE PENSION SCHEME (NOAPS): This scheme came into effect on 15 August 1995. The scheme provides pension to all old people who were above the age of 65 (now 60) who could not find for themselves and did not have any means of subsistence. The pension that was given was Rs.200 a month (now it is 2000 per month). This pension is given by the central government. The job of implementation of this scheme in states and union territories is given to panchayats and municipalities. The states contribution may vary depending on the state. The amount of old age pension is Rs.200 per month for applicants aged 60–79. For applicants aged above 80 years, the amount has been revised to Rs.500 a month according to the 2011–2012 Budget. It is a successful venture.

NATIONAL FAMILY BENEFIT SCHEME (NFBS): This scheme was started in August 1995. This scheme is sponsored by the state government. It was transferred to the state sector scheme after 2002–03. It is under the community and rural department. This scheme provides a sum of RS.20,000 to a person of a family who becomes the head of the family after the death of its primary breadwinner.



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**AN ECONOMIC STUDY OF WOMEN ENTREPRENEURS THROUGH TEXTILE SHOPS
IN NAGERCOIL**

Dr.S.Jeni Sanjana Assistant Professor in Economics Holy Cross College(Autonomous)Nagercoil.

Abstract:

Entrepreneurship is the purposeful activity of an individual or a group of associated individuals, undertaken to initiate, maintain or aggrandize profit by production or distribution of economic goods and service The entrepreneurship of women is considered to be an effective instrument to the economic development and empowerment of women. Women have been regarded as the nuclei of nation and builder and molder of its destiny. The government of India has defined women entrepreneurs as, It will take time in changing attitude, technological innovation and modern ways of thinking to reduce disparity between man and women to bring equality. This study depends up on its practical application to reality Nagercoil is a commercial area consisting of a large number women entrepreneurs.This article will throw light about the of women entrepreneurs through textile shops.

Introduction

Entrepreneurship is the act of being an entrepreneur, which can be defined as “one who undertakes innovations, finance and business acumen in an effort to transform innovations into economic goods”. Entrepreneurship Development is a program meant to build up entrepreneurial abilities on the list of people. In additional words, it is the term for inculcation, development and polishing involving entrepreneurial skills in to a person needed to determine and successfully manage his enterprise. Entrepreneurship plays an eminent role in creating an employment opportunity for rural communities, providing self-employment for those who have started-up a business of their own and enhancing the economic status of the rural sector as well. Now women are also interested to establish their own business as professionally both in the urban and rural areas due to overcome poverty, generate family income and increasing Standard of living. Development of entrepreneurship is a vital factor for the growth of a country. An entrepreneur is the key person who envisages new opportunity, new techniques new line of production and co-ordinates all other activities. It is necessary for harnessing the vast untapped human resources of a country like India and to channelize them towards accelerating industrialization. Entrepreneurship is the purposeful activity of an individual or a group of associated individuals, undertaken to initiate, maintain or aggrandize profit by production or distribution of economic goods and services. An entrepreneur is the key person who envisages new opportunity; new techniques new line of production and co-ordinates all other activities. The growth of industrialization in a particular country is a function of quality and quantity of entrepreneurs available in that country.

Roles of women Entrepreneurs

Women entrepreneurs are considered to be most important economic agents for economic augmentation of the country. They are the owners, producers, coordinators, sellers, decision makers, risk takers, innovators etc. They also generate employment opportunities and contribute in improving family’s living standard. Today’s women must supplement the family income using their potential and skills that they possess. Her skills and competencies may be sharpened and turned by way of training. Thus, women in India, no longer need to wait for employment outside home. They can successfully start their enterprise and earn their livelihood. Women are regarded as better half of the society. In traditional Indian societies, they were confined to four. Women entrepreneurs may be defined as a women or group of women who initiate the income .

PROBLEMS OF WOMEN ENTREPRENEURS

Women entrepreneur’s encounter two set’s of problems, viz, general problems of entrepreneurs and problems specific to women entrepreneurs.Finance is regarded as “life blood” For any enterprise, be it big for small however, women entrepreneurs suffer from shortage of Finance on two countries. Firstly women do not generally have. Property on their names to use the as collateral for obtaining funds from external Sources. Thus their access to the external Sources of funds is



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Education and Rural Development

S. Vimal Dolli, Assistant Professor, Dept of Economics,
Holy Cross College (Autonomous), Nagercoil

Introduction

Education is important for everybody, whether they are learning new facts, skills, or trades. Having the opportunity to learn always benefits the individual. An education system in rural communities has the opportunity to build capacity and knowledge in the rural populace, helping them to make informed decisions about their farms and to innovate in agricultural affairs. Education also exposes the masses to information and helps prevent the misinterpretation of information. Education can lead to many positive outcomes, such as an improved ability to understand policies, procedures, rights, duties, government schemes, legislation, available benefits, and protection laws. Quality education is a pertinent tool for enhancing quality of life, creating awareness and capability, increasing freedom, and improving overall holistic human development for the people and the nation.

Education is considered a vital element in the development of a society. Rural development implies both the economic betterment of people as well as greater social transformation. The continuous growth of the Indian economy forces the Indian government to accelerate the process of developing all the branches of the Indian education system. As more than half of the population in India lives in villages, therefore the education system in rural area also plays a significant contribution in the growth of the economy.

Objectives

- To analyze the role of education in rural development
- To know the problems in rural education
- To suggest some remedial measures to improving rural education

Methodology

This study is based on secondary data. Secondary data were collected from books, journals, project reports and from internet sources.

Role of Education in rural development

- **Education as a principal development strategy:** Many development economists apparently believe that education is a primary means of promoting economic development in rural areas.
- **Education provides employment and income opportunities:** Increasing the quality of education in rural areas can significantly impact the development of employment opportunities. It leads to improve the well being or standard of living of rural people by increasing income earning opportunities in rural areas.

Education Links rural and urban sectors: Education helps rural people to modify their physical and social environments and to make steady progress in meeting their needs. No



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GENERAL EPIDEMIOLOGY OF COMMUNICABLE DISEASES

R.S.KAVYA^a JENI SANJANA

^aReg.No. 19113041032004, Ph.D Research Scholar, Holy Cross College (Autonomous), Nagercoil

^bAssistant Professor, Department of Economics, Holy Cross College (Autonomous), Nagercoil
Manonmaniam Sundharanar University, Tirunelveli

Abstract

The concept of health and Disease, elaborated in the defined community or region, of causes of an illness with a frequency clearly in Excess or normal expectancy. The number of causes indicating the presence of an epidemic varies, according infectious agent, size and type of population exposed, previous experience or lack of Exposure to the disease, and time and place of occurrence, epidemicity is thus relative to usual frequency of the disease in the same area, among the specified population, and at the same season of the year. A single case of a communicable disease long absent from a population or the first invasion disease not previously recognized in that area requires immediate reporting and full field epidemiological investigation.

Introduction

The term denoting the habitual presence of disease or infectious agent within a given geographic area or a population group; may also refer to the usual prevalence of a given disease with in such an area Hyperendemic express a habitual presence of all ages at a high level of incidence, and holo endemic express a high level of prevalence with high spleen rates in children and lower rates in adults. Two cause such a disease associated in time and place are sufficient evidence of transmission to be considered an epidemic. Communicable disease are illness caused by viruses or bacteria that people spread to one another through contact with in contaminated surfaces, bodily fluids, blood products, insect bites, or through the air specifically hepatitis is a form of a communicable disease that is spread through the oral-facial route.

Causation of disease:-

Earlier diseases were viewed as a curse of demons or evil spirit. However the discoveries at in microbiology, marked an importing turning point in causation of disease. In specific era different theories of disease causation came into vogue. They are

1. Germ theory of disease:

In the 19th century and early 20th century, germ theory of disease dominated the medical science.

Disease agent-----Man-----Disease

(Microbe)

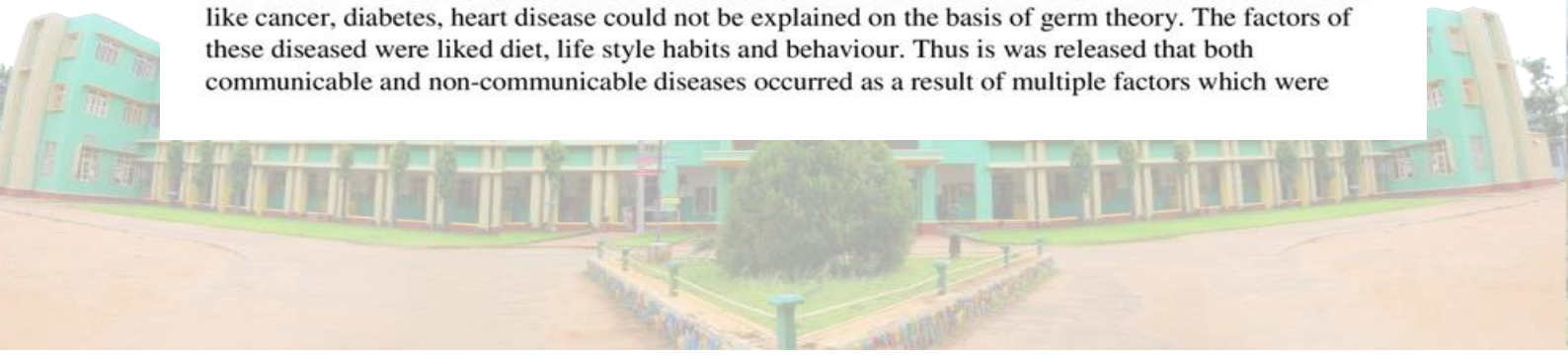
Microbe (bacteria, virus etc) were described as sole cause of a disease causation.

2. Epidemiological triad:

The disease occurs as a result of interaction between disease agent the host actors environmental factor. For example measles in a child, the disease agent is the measles virus, the host factor may be malnutrition and environmental facto could be winter season. However not everyone exposed to a disease agent develops a disease eg. TB one may harbor TB germs in the body may not develop tuberculosis disease. Thus it was soon realized that a disease is caused by multiple factor.

3. Multifactorial causation of disease:

Petten Koefer of Munich propagated the concept of multifactorial causation of disease modern disease like cancer, diabetes, heart disease could not be explained on the basis of germ theory. The factors of these diseased were liked diet, life style habits and behaviour. Thus is was released that both communicable and non-communicable diseases occurred as a result of multiple factors which were



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AGEING IN- INDIA: PROBLEMS AND CHALLENGES

Dr. A. Babila Kingsly, Assistant Professor, Department of Economics, Holy Cross College (autonomous), Nagercoil

Abstract

This paper focus on Health is the topmost priority in every individual's life. Its importance is evident in old saying, "Health is Wealth". Health is not only basic to lead a happy life for an individual, but also necessary for all productive activities in the society. Elderly or old age consists of ages nearing or surpassing the average life span of human beings. The boundary of old age cannot be defined exactly because it does not have the same meaning in all societies. People can be considered old because of certain change in their activities or social roles. Also old people have limited regenerative abilities and are more prone to disease, syndromes, and sickness as compared to other adults.

Introduction

Ageing is an irreparable biological process and is defined as the survival of the increasing number of individuals, who have completed their adult roles. Ageing is stated as the inevitable consequence of decline in productiveness. With the advent of technology and modernization, there has been a decrease in the mortality rate, increase in awareness, nutrition, advancement in health care facilities and an increase in life expectancy. The main purpose of this research manuscript is to acquire an understanding of the problems of the aged people in India. When individuals reach old age, the various problems that they have to experience include, decline in health conditions, retirement, financial problems, loneliness and dependence upon others. The problems that have been taken into account in this research paper include, social, economic, psychological, health, crime, abuse and other miscellaneous problems. There are formulation of measures and policies that aim at alleviating the problems of the elderly, provide them security, protection and focus upon their well-being.

Biological and physiological problems

- a) Problem in mobility
- b) Problem in following routine work
- c) Dependency
- d) Senescence and
- e) Senility

• **Health care problems**

- a) Minor health problems due to negligence and lack of care such as defective eye-sight, General weakness, pain in joints, cough and cold. Defective complaints, breathing trouble, trembling of limbs etc.
- b) Chronic diseases
- c) Accidents



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**A STUDY ON BUYING BEHAVIOUR OF WOMEN TOWARDS GOLD
JEWELLERY IN NAGERCOIL.**

**A. Sameema, Assistant Professor, Dept of Economics, Holy Cross College (Autonomous),
Nagercoil.**

ABSTRACT

The main intention of conducting this research is to study the preference to the buying jewellery with special reference to Nagercoil. The objective of the study is to get near about the consumer buying behaviour and factor influencing it such as cultural, social, economic factors and brand awareness etc. while purchasing of gold jewellery at various jewellery retail stores at nagercoil. The study helps jewellery retail stores to understand about the buying behaviour of customer towards jewellery.

INTRODUCTION

Consumer behaviour essentially refers to how and why people make the purchase decisions they do. Marketers strive to understand this behaviour so they can better formulate appropriate marketing stimulus that will result in increased sales and brand loyalty. There are a vast number of goods available for purchase, but consumers tend to attribute this volume to the industrial world's massive production capacity. Marketing profession is responsible for the variety of goods on the markets. The skill of evaluating and influencing consumer behaviour is foremost in determining which marketing efforts will be used and when.

JEWELLERY

Nowadays jewellery industry is one of the fastest emergent and foreign exchange earner industry in the Indian economy. Jewellery has been used by the Indian for both its aesthetic as well as investment purposes. Jewellery is a type of accessory that includes necklaces, rings, bracelets, watches, and earrings, etc. Jewellery is being designed for men, women, and children and can be made from a variety of different categories. Jewellery started about 1,00,000 years ago Began with materials made from bone, teeth, and shell. Egyptians were first to use gold and metals for creating Jewellery, it were considered a symbol of power and wealth. Gold is a symbol of prosperity and appeals to both younger and older generations across social strata within the country. The fashion-wear segment that currently has 8 to 10 percent share but has gained importance with the increase in demand for diamond jewellery.

DATA COLLECTION

Data was collected through primary mode of data collection, i.e. through questionnaire.

SAMPLING SAMPLE

Size for the study was fifty.

OBJECTIVES

1. To study the brand awareness of women towards gold jewellery with respect to marital status.
2. To study the various factor affecting buying behaviour of women towards jewellery.
3. To study the role of price of gold jewellery upon the buying decision of women with respect to income.
4. To analyze the preference of women towards traditional Vs modern jewellery with respect to marital status.



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TRANSGENDER – AN OVERVIEW

Dr. J.M.Vinitha Charles,

Assistant Professor, Dept. of Economics
Sr.S.Clara II M.A.Economics
Holy Cross College, Nagercoil

ABSTRACT

Transgender is the state of gender identity or self identification not matching one's assigned sex. Identification by others as male or female based on physical features or genetic make - up and doesn't imply any specific form of sexual orientation. Human cells have twenty third pair that determines the gender. Thus, a child born as a male and in the course of time transformed as a female, is called "Transgender". This paper highlights the lifestyle, problems and struggles of a transgender in a day today life.

Key Words: Transgender, Anatomy, Recognition, Awareness, Harmonie.

INTRODUCTION

Gender is a pervasive facet in all aspects of one's life. Socially and biologically gender is pre-determined into two categories, male or female. Gender is a distinct category that describes particular human characteristics. The most important thing about gender is that its meaning is created by society and people are expected to behave and express themselves in certain ways that are consistent with the socially pre-determined gender role associated with their sex. All people have a gender identity. Male-to-female transgender persons are locally known as "Aravaani" in Tamil Nadu. Simply we can say that a person who may be called neither male nor female is called a transgender.

OBJECTIVES OF THE STUDY

- To know the socio economic conditions of the sample respondents.
- To study the problems faced by the sample respondents.

METHODOLOGY

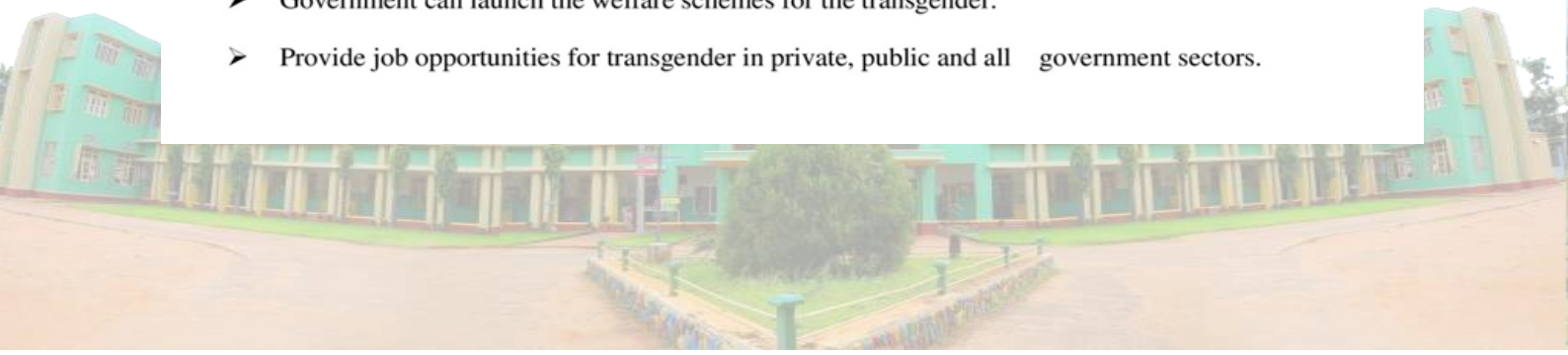
Both primary and secondary data were used for the present research study. In the present study the researchers have been selected 50 samples from Vellamadam and Erachakulam village of Kanniya Kumari District.

FINDINGS

- Eighty four per cent of the sample respondents are choosing begging as their occupation.
- Fifty eight per cent of the sample respondents are identified themselves as transgender in the age of 10-15.
- Ninety per cent of the respondents are having their own houses which are provided by the Government.
- Twenty two per cent of the sample respondents are getting income from blessings and pension.

SUGGESTIONS

- Society can give rights, recognition and respect to the transgender.
- Government can launch the welfare schemes for the transgender.
- Provide job opportunities for transgender in private, public and all government sectors.



ECONOMIC SLOWDOWN IN INDIA: CAUSES AND CONSEQUENCES



Dr. S. Jeni Sanjana
Dr. S. Anne Perpet Sophy



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M. Sahaya Vennila

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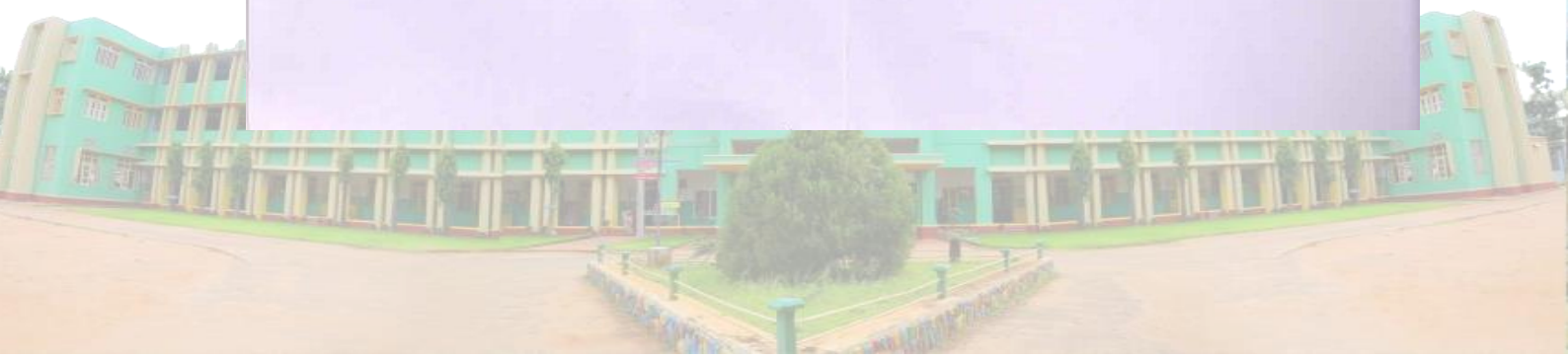
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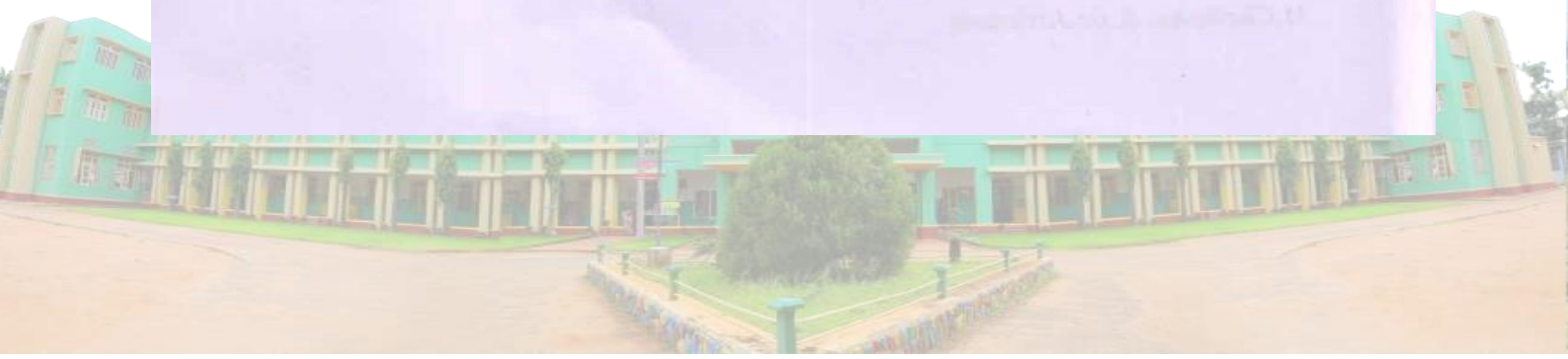
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CHALLENGES OF INDIAN BANKING INDUSTRY-AN OVER VIEW

Dr.Sr.Sophy

Associate professor, Department of Economics, Holy Cross College, Nagercoil

Abstract

The Indian banking sector is faced with multiple and concurrent challenges such as increased competition rising customer expectation and diminishing customer loyalty the RBI should actively support such research efforts Mobile Banking. Another contemporary issue faced by banks is Mobile Banking. The banking sector in India is at a ground –breaking cusp where traditional state –owned players are facing significant technology disruptions while digital growth aided by newer technologies is changing consumer mind-sets while problem loans are a key challenge facing sectors the Government is taking aggressive steps to shift the banking ecosystem to a higher plateau through promising developments in the Indian political, socio-economic and regulatory landscape amid the digital push into the financial services domain.). The emerging competition has generated new expectations from the existing and the new customers. There is an urgent need to introduce new products. Existing products need to be delivered in an innovative and cost-effective way by taking full advantage of emerging technologies. This is leading to a growing demand for competitive sophisticated retail banking services. This paper explains the challenges and opportunities of Indian banking sector.

INTRODUCTION

The Indian banking sector continues to face some structural challenges. We have a relatively large number of banks, some of which are sub-optimal in size and scale of operations. On the regulatory front, alignment with global developments in banking supervision is a focus area for both regulators and banks. The new international capital norms require a high level of sophistication in risk management, information systems, and technology which would pose a challenge for many participants in the Indian banking sector. The deep and often painful process of restructuring in the Indian economy and Indian industry has resulted in asset quality issues for the banking sector; while significant progress is being made in this area, a great deal of work towards resolution of these legacy issues still needs to be done. The Indian banking sector is thus at an exciting point in its evolution.

The banking industry like many other industries today is facing unprecedented change as it moves toward digitalization. While most bankers have started to embrace the technological revolution there are still challenges that need to be overcome. The future of banking will require new ideas on a greater scale and perhaps most significantly the customer will be at the forefront of the future. Today's banking



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IMPACT OF ECONOMIC SLOW DOWN IN INDIA

Dr.S.Jeni Saniana

Assistant Professor in Economics, Holy Cross Colleg(Autonomous)Nagercoil.

Abstract

India has also been hit by the global meltdown; it is clearly due to India's rapid and growing integration in to the global economy. This economic slowdown has affected almost all the sectors of the Indian economy, but it is very difficult to analyze the impact of slowdown on each economic activity together. The world economy has witnessed two economic slowdowns. India, through came out of the first one, largely unaffected when see in comparison to Italy, Greece, and U.S.A. The present crisis however, has the country tightly in its grasp. The index of eight core sector industries fell by 5.2% in September 2019. Economists have argued that this slowdown has beset India due to a fall in the domestic demand, especially the rural demand, which in turn is caused by the decline of incomes and cash-flow in rural areas. The projection of higher economic growth numbers for India went down in 2019. This slowdown according to many economists has come about because rural consumption declined due to the shutdown of a number of informal enterprises, decreased agricultural income, and low cash supply in the rural economy. The paper attempts to analyze the impact of economic slowdown on specific emerging components of India.

INTRODUCTION

An economic slowdown occurs when the rate of economic growth slows in an economy. Countries usually measure economic growth in terms of Gross Domestic Product (GDP), which is the total value of goods and services produced in an economy during a specific period of time. Considering the constant slowdown in the Indian economy, the International Monetary Fund (IMF) advised the Indian Government earlier this week to avoid a fiscal stimulus to boost the sagging economy and instead go for an easier monetary policy.

The second quarter (July-September) of the current financial year (April 2019-March 2020) witnessed a drastic fall in gross domestic product (GDP) growth rate to 4.5 percent, even as international bodies like the International Monetary Fund (IMF) and the World Bank repeatedly cut Indian economy's growth rates. This was described as the lowest GDP growth rate in the previous 26 quarters, which means in over six years. The main reasons attributed to the fall in the GDP growth rate were - contracted manufacturing activity, weakened investments, and lessened consumption demand. In the words of former Governor of India's central bank, the Reserve Bank of India (RBI), Raghuram Rajan, there are signs of "deep malaise" in the Indian economy. "Growth is slowing significantly and there is currently little fiscal space available to the government to spend more. Corporate and household debt is rising and there is deep distress in parts of the financial sector. Unemployment seems to be growing," he was quoted as saying by the India media. As the RBI notes, the India growth story in recent years has been driven by large investments in infrastructure. Private investment in

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Dr. S. Anne Perpet Sophy



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ECONOMIC SLOWDOWN IN DIFFERENT SECTORS IN INDIA

Dr.A.Sameema

Assistant Professor, Department of Economics, Holy Cross College (Autonomous), Nagercoil

Abstract

The crisis brewing within the Indian economy has gained unanimous acceptance by now. Even the latest annual report of the RBI for the fiscal year 2018-19 confirmed that the Indian economy has indeed hit a rough patch. The GDP growth rate of the economy has slipped to 5 per cent in the first quarter, the lowest in over six years. This is an indication of tougher times ahead. Be it the recent collapse of the automobile sector or the rising number of non-performing assets. Sluggish consumer demand or failing manufacturing sector; all have a hand in this deceleration of growth rate.

INTRODUCTION

The Indian economy has been slowing down since 2016-17 when real GDP growth had peaked at 8.2 per cent. According to the CSO's advance estimates, it has fallen to 5 per cent in 2019-20 — the lowest since 2008-09, which was the year of the global economic and financial crisis. Nominal GDP growth in 2019-20 is expected to be 7.5 per cent, which is the lowest level since 1975-76 — a 44-year low.

India's ongoing slowdown has been accompanied by the erosion of saving and investment rates since 2011-12, when these had peaked at 34.6 per cent and 39 per cent of the GDP respectively, measured in current prices.

Since then, the saving and investment rates have fallen steadily to 30.5 per cent and 32.3 per cent respectively in 2017-18.

Although information on the saving rate is not available for more recent years, the investment rate for 2019-20 can be estimated at 30.1 per cent of the GDP by summing up gross fixed capital formation, valuables and change in stocks.

This persistent erosion of the saving and investment rates has reduced India's potential growth rate to close to 6.5 per cent. In fact, the fall in actual growth is even below this reduced potential growth at 5 per cent in 2019-20.

SECTORS IN SLOWDOWN

Domestic car sales: During April to June 2019, car sales fell by 23.3% in comparison to the same period in 2018. This is the biggest contraction in quarterly sales since 2004 (that's how far back the quarterly data in the Centre for Monitoring Indian Economy database goes). A slowdown in car sales negatively impacts everyone from tyre manufacturers to steel manufacturers to steering manufacturers etc., when it comes to the backward linkages that car manufacturers have. As far as forward linkages are

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CAUSES FOR THE PRESENT SLOWDOWN IN THE INDIAN ECONOMY

S.ChithraLekha¹ & Dr.S.JeniSanjna²

¹ Ph.D Research Scholar, Holy Cross College (Autonomous), Nagercoil

² Assistant Professor, Department of Economics, Holy Cross College (Autonomous), Nagercoil

INTRODUCTION

Much has been written and said about the ongoing economic slow down in the Indian Economy. What was being indirectly said about several economic indicators flashing warning signals for the last year or so, what has triggered the present criticism is the GDP (Gross Domestic Product figures for the last quarter which came in at 5.7% and suddenly brought the issue into a full public glare.

Collapse in Private Consumption and Investment Freeze leading to Double Whammy

So, what are the reasons for the present slow down in the Indian Economy? To start with, private consumption has taken a beating due to Demonetization as consumers suddenly prefer to hoard cash or keep it in the bank instead of spending on consumer goods.

Moreover, demand has also collapsed in the rural areas as the entire rural economy runs on cash and Demonetization led to the loss of jobs as well as incomes thereby squeezing the rural consumer who now prefers to wait and watch as well as postpone consumption except that of essential goods and services.

Next, Demonetization has also led to small and medium business or the so-called SMEs to withhold investment since they too operate on a cash basis and the cash crunch has left them high and dry.

The Effect of Demonetization

Indeed, Demonetization can be said to have contributed too much of the slowdown as the Double whammy of demand collapsing, and supply bottlenecks mean that there is a broad slowdown across the entire value chain of the demand and supply dynamics.

Thus, what we have is a situation where in cash has dried up leading to a slowdown in the economy.

One must also take note of the fact that is not only private consumption and small enterprises causing the slowdown.

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CHALLENGES OF INDIAN BANKING SECTOR

Dr. A. Babila Kingsly

Assistant Professor, Department of Economics, Holy Cross College (Autonomous), Nagercoil

Abstract

The economic reforms initiated by the Government of India about two decades ago have changed the landscape of several sectors of the Indian economy. The Indian banking sector is no exception. This sector is going through major changes as a consequence of economic reforms. The role of banking industry is very important as one of the leading and mostly essential service sector. India is the largest economy in the world having more than 120 crore population. India's Rs 77 trillion banking industry is the backbone to the economy. India's banking sector is on a high-growth trajectory with around 3.5 ATMs and less than seven bank branches per 100,000 people, according to a World Bank report. The economic reforms have also generated new and powerful customers and new mix of players (public sector units, private banks, and foreign banks). The emerging competition has generated new expectations from the existing and the new customers. There is an urgent need to introduce new products. Existing products need to be delivered in an innovative and cost-effective way by taking full advantage of emerging technologies. This is leading to a growing demand for competitive, sophisticated retail banking services. This paper explains the challenges and opportunities of Indian banking sector.

INTRODUCTION

A bank is a monetary institution that provides banking and other financial services to their customers. A bank is generally understood as an institution which provides fundamental banking services such as accepting deposits and providing loans. There are also non-banking institutions that provide certain banking services without meeting the legal definition of a bank. Banks are a subset of the financial services industry. India is one of the top 10 economies in the world, where the banking sector has tremendous potential to grow. The last decade saw customers embracing ATM, the internet, and mobile banking. India banking sector is currently valued at Rs. 81 trillion (US\$ 1.31 trillion). It has the potential to become the fifth largest banking industry in the world by 2020 and the third largest by 2025, according to an industry report. The face of Indian banking has changed over the years. Banks are now reaching out to the masses with technology to facilitate greater ease of communication, and transactions are carried out through the Internet and mobile devices.

The banking system in India should not only be hassle free but it should be able to meet the new challenges posed by the technology and any other external and internal factors. For the past three decades, India's banking system has several outstanding



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CAUSES OF ECONOMIC SLOWDOWN IN INDIA

Dr. S. Vimal Dolli

Assistant Professor, Department of Economics, Holy Cross College (Autonomous), Nagercoil

Abstract

India is going through a serious economic slowdown. In the course of the next few months, this will lead to job cuts and shutting down of factories. Many steps have been taken by the Government to reverse the slowdown and push up demand which will lead to higher GDP growth. So far, the results have not been very visible on the job creation front or in boosting flagging demand, and unemployment is at its highest in decades. This paper deals with the causes of economic slowdown in India.

INTRODUCTION

An economic slowdown occurs when the rate of economic growth slows in an economy. Countries usually measure economic growth in terms of gross domestic product (GDP), which is the total value of goods and services produced in an economy during a specific period of time. The Indian economy is slipping into a recession, which is quite apparent. The real GDP growth has gone down from a peak of 8.2% in 2016-17 to 6.8% in 2018-19, with the fourth quarter of 2018-19 dipping to 5.8%. With declining cash flow into the market, a gigantic employment shortfall has been the consequence. Significant employment-driving sectors including automobile, real estate and financial services—non-banking finance companies (NBFCs) in particular—and manufacturing are now showing signs of its adverse impact.

OBJECTIVES

- To analyze the causes of economic slowdown
- To suggest some measures to overcome the economic slowdown

METHODOLOGY

This study is based on secondary data. Secondary data were collected from books, journals, project reports and from internet sources.

CAUSES OF ECONOMIC SLOWDOWN

Demonetisation

The one-time cash curtailment exercise of the government had a telling impact on India's growth. Market experts say that the November 8, 2016 event initiated a curtailment of consumer spend in the country. "The demonetisation hit farmers the most. Their crop prices crashed during the year and exacerbated an already existing farm distress scenario. With no cash in hand, farmers settled for distress sales," said

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SLOWDOWN IN AUTOMOBILE INDUSTRY: CAUSES & REMEDIES

S.Panimaya Mercy

Assistant Professor, Department of Economics, Holy Cross College, Nagercoil

INTRODUCTION

India faced an economic slowdown in 2019, with the country's real estate, automobile, construction sectors and overall consumption demand facing a serious and constant decline¹. The causes and remedies of economic slowdown in automobile industry of India are described in this paper. India is the Asia's fourth largest exporter of automobiles and the industry plays vital role in growth of the Indian Economy. The automobile industry includes two – wheelers, trucks, cars, buses and three wheelers².

Commercial vehicles, construction equipment and tractors are strongly correlated to growth in GDP, industrial output, agricultural output and infrastructure spending. A downturn in these automotive segments is reflective of the overall slowdown in the economy, with GDP growth rates coming down sequentially over the last five quarters, from a high of 8% in Q1, 2018 to 5% in Q2, 2019.

MAGNITUDE OF SLOWDOWN IN THE AUTOMOBILE SECTOR

Daimler India Commercial Vehicles (DICV) ended the calendar year 2019 with a significant fall in truck sales, as the commercial vehicle industry battled sluggish demand.

The truck and the bus manufacturing arm of German auto major Daimler reported 36 per cent fall in sales of its BharatBenz trucks at 14,474 units during 2019.

DICV reported its highest-ever annual sales in the calendar year 2018 with 22,532 units. During the fourth quarter of 2019, DICV's truck volumes declined 54 per cent at 2,413 units compared with 5,293 units during the same period of the previous year. The volume decline of DICV reflected the industry trend. While overall CV volumes in India were down 15 per cent at 854,759 units in 2019, the M&HCV segment's sales (trucks) fell 31 per cent at 246,779 units as against 357,414 units in the calendar year 2018.

REASONS FOR THE SLOWDOWN IN AUTOMOBILE INDUSTRY

- According to Daimler AG's 2019 annual report, the market decreased sharply due to the unexpectedly weak development of the economy.
- The CV industry in India, especially the medium and heavy commercial vehicle sector, has been going through a rough patch for more than a year due to excess capacity, poor freight availability on the back of sluggish manufacturing and infrastructure activity and overall economic slowdown in the country.

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SLOWDOWN FOR INDIAN ECONOMY

Ms.J.Josephine Shiny

Assistant Professor, Department of Economics, Holy Cross College (Autonomous), Nagercoil

Abstract

India has seen a economic slowdown in 2019, with the country's real estate, automobile, construction sectors and overall consumption demand facing a serious and constant decline. The second quarter (July-September) of the current financial year (April 2019-March 2020) witnessed a drastic fall in gross domestic product (GDP) growth rate to 4.5 percent, even as international bodies like the International Monetary Fund (IMF) and the World Bank repeatedly cut Indian economy's growth rates. This was described as the lowest GDP growth rate in the previous 26 quarters, which means in over six years. The main reasons attributed to the fall in the GDP growth rate were - contracted manufacturing activity, weakened investments, and lessened consumption demand. In the words of former Governor of India's central bank, the Reserve Bank of India (RBI), RaghuramRajan, there are signs of "deep malaise" in the Indian economy. "Growth is slowing significantly and there is currently little fiscal space available to the government to spend more. Corporate and household debt is rising and there is deep distress in parts of the financial sector. Unemployment seems to be growing," he was quoted as saying by the India media.

INTRODUCTION

The Indian government's moves during the past two-three months failed to revive the sluggish economy, even as the business sentiment remained at one of the lowest. The automotive sector faced its worst phase, and the same was experienced in the realty and manufacturing sectors. Finance Minister NirmalaSitharaman announced over 30 steps in various sectors to reverse the downturn, but none of them seemed to have worked, even as it is feared that the decline might soon reach the 3.5 percent-mark. Considering the constant slowdown in the Indian economy, the International Monetary Fund (IMF) advised the Indian Government earlier this week to avoid a fiscal stimulus to boost the sagging economy and instead go for an easier monetary policy. In a consultation report on the Indian economy, the IMF said that considering the cyclical weakness of the economy, the monetary policy should maintain an easing bias, at least until the projected recovery takes hold. Fiscal stimulus should be avoided given fiscal space is at risk and revenue losses from the recent corporate income tax rate cut should be off-set. It, however, stuck to its overall growth projection of 6.1 percent for the country during the financial year 2019-20. The IMF report also suggested that personal income tax collections could be increased by ending exemptions, reducing the minimum threshold for taxpayers and by raising contributions by top earners. The country's real estate sector witnessed one of the poorest years, faced with a poor housing demand. As on date, according to rough estimates, there is an unsold inventory of around 450,000 housing units. There has been a strong push by the central government for the affordable housing, which accounts for nearly half of the total

ECONOMIC SLOWDOWN IN INDIA: CAUSES AND CONSEQUENCES



Dr. S. Jeni Sanjana
Dr. S. Anne Perpet Sophy



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Editors



Dr. S. Jeni Sanjana is an Assistant Professor in Holy Cross College (Autonomous), Nagercoil. Having penchant for teaching she has been doing it more than 15 years, inspiring and helping minds to achieve their goals. She did her Bachelor of Arts on Economics from Women's Christian College and continued to pursue her Masters in the field of Economics from Scott Christian College. Her undivided attention towards Economics led her to different levels of researching about it in an intricate manner and thus, obtaining her a Doctorate from Monomaniam Sundaranar University, Tirunelveli. She also did her Masters in Business Administration from Tamil Nadu Open University. A Honorary diploma on Computer Applications helped her to know and master of different computer applications. She has participated and presented more than 50 international, national seminars. All the experiences and knowledge she gained throughout the years made students seek her guidance for their doctorate and at present, she is guiding two Ph.D scholars. She has been the author of one book.



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CAUSES LEADING TO INDIAN ECONOMY SLOWDOWN – AN OVERVIEW

M. Sahaya Vennila

Assistant Professor in Economics, Holy Cross College (Autonomous), Nagercoil – 629 004

Abstract

Indian economy is on a massive slowdown for the past few years. Minimum governance & Maximum government is the most important factor leading to economic slowdown. In practice the government's intervention increased considerably on the economic front. The regulatory restrictions played a vital role in suffocating Commerce & Industry. Imposing import duty on crude oil, up from zero raised taxes on petroleum products. The government is slow on Reforms, much needed Land & Labour reforms have been sidelined, probably giving into demands of the electoral politics, more inclined towards Socialism & Swadeshi thoughts. Banking sector is under severe distress. Non Banking Financial companies are struggling between illiquidity & insolvency. The three important contributors to the economic slowdown include Demonetisation & stressed banking sector, GST Implementation and problems in Agriculture sector. Slumping sales of Cars & two wheelers are triggering massive job cuts in India's Auto sector. The Real Estate prices have been flat for years now. Unemployment is at its highest. This paper seeks to highlight the cumulative effects leading the Indian economy to slowdown.

Key Words: *Indian Economy, Slowdown, Indications of Slowdown, Contributors to the Slowdown.*

INTRODUCTION

Indian economy is on a recession and a massive slowdown for the past few years. The government's intervention increased considerably on the economic front. The regulatory restrictions played a vital role in suffocating Commerce & Industry. Imposing a 5% import duty on crude oil, up from zero raised taxes on petroleum products, all of 14 times in 5 years. The government is very slow on Reforms. Much needed Land & Labour reforms have been sidelined, probably giving into demands of the electoral politics, more inclined towards Socialism & Swadeshi thoughts. Banking sector is under severe distress. Non-Banking Financial companies are struggling between illiquidity & insolvency. Demonetisation & GST described by the Government as "One Nation One Tax" But in reality it was IGST+ CGST +SGST. This so called "simple tax" described by the government is basically "One Nation Three Tax". Slumping sales of Cars & two wheelers are triggering massive Job cuts in India's Auto sector. Estimates suggest 350,000 workers have been laid off. Auto components industry expects 10 lakh more people may lose jobs in the coming months. The Real Estate prices have been flat for years now & unsold inventories have taken a huge hit. A 40 plus month inventory means this sector will need prices to correct dramatically by 30-40 per cent to revive quickly. Unemployment is highest in 45 years.

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BANKING SECTOR: TRENDS, ISSUES AND CHALLENGES

R.S.Kavya¹ & Dr.Jeni Sanjana²

¹Ph.D Research Scholar, Holy Cross College (Autonomous), Nagercoil

²Assistant Professor, Department of Economics, Holy Cross College (Autonomous), Nagercoil

Abstract

The Indian Banking industry on the back of robust economic growth has undergone a sea change. From the days of the common man's excessive reliance on money lenders and loan sharks, the banking system has come a long way. Besides a huge network of more than 70,000 branches across the country banks are using a number of alternative channels (such as telebanking, internet banking, doorstep banking, etc) to reach to the people. Now-days banks are investing more into risky and complex financial assets rather than the practice of lazy banking followed earlier. Banks are fast transforming themselves into a one stop shop for a range of financial offerings such as insurance, mutual funds, securities, brokerage services, wealth management etc.

INTRODUCTION

Soon after Society recognized the benefit of using money as a medium of exchange it recognized the need for a safe place to store it. This safe place ultimately evolved into the banks of today, financial institutions that accept deposits and make loans. Banking existed in Babylonia, Ancient Greece and Rome. During the Middle Ages, gold and Silver (known as specie for Latin for inkind) served as a full bodied medium of exchange. People naturally wanted their specie in a location safe from theft, fire and other hazards. The emergence of money as a medium of exchange led to the need for banks and depositories. Demand deposits and bank notes developed out of a need to reduce the transaction costs of having to be physically present to withdraw money from depositories before making purchases. This development led to fractional reserves banking, wherein banks holds a fraction of deposits in reserve and make loans to depositors in needs of funds.

BANKING REGULATIONS

As a result of banking deregulation over the past decades, banks today are like most firms in the economy and in that they must set their own interest rates and vigorously compete with one another for depositors and loan customers. Today, banks function as middleman or intermediaries in financial markets by:

1. Borrowing short and lending long
2. Pooling small deposits into large loans
3. Diversifying risks and
4. Economizing on transaction costs relative to engage in direct finance.



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A STUDY ON ONLINE FOOD PURCHASING BEHAVIOUR WITH SPECIAL REFERENCE IN NAGERCOIL.

P. Sahaya Asha, III. B. Com(aided), Holy Cross College, Nagercoil,

Dr. S. Mary Pearly Sumathi M.com., B.Ed., M.Phil., Ph.D. Holy Cross College, Nagercoil,
Department of Commerce.

INTRODUCTION

The online ordering system can be defined as a simple and convenient way for customers to purchase food online, without going to the restaurant. These items will then be delivered to the customer at his or her doorstep at the time they chose, by a delivery person.

Online food purchasing is now playing a very important role in everybody's life especially elderly people as well as people with a very busy life schedule.

STATEMENT OF THE PROBLEM

Online based food purchasing is one of the revolutions of modern world. Nowadays people do not have time to go outside for food, rather they prefer online purchasing. It refers to the actions of the consumers in the market place and the underlying motives for those actions. In this paper the major focus will be the special reference i.e. Customers attitude/ behavior of the people who purchase food through online in Nagercoil.

OBJECTIVES OF THE STUDY

The general objective of the study is to measure food purchasing behavior of online customers in the study area. The following are the specific objectives.

- ❖ To find out the factors influencing the respondents towards online food purchasing.
- ❖ To understanding the problems faced by the customers while purchasing food in online.

METHODOLOGY

The present study is descriptive in nature and based on the survey method. Primary data constitute the first hand information on subject. The details regarding online shopping, their buying behavior and their level of satisfaction, have been collected with the help of an interview schedule, from 60 respondents. Secondary data regarding the topic have been obtained from journals and websites.

NALYSIS AND DATA INTEREPTION

PROBLEMS FACED BY THE SAMPLE RESPONDENTS

Many consumers who buy online for the sake of convenience have not had very pleasant experience. There is lot of problems arising when the customers are ready to buy food via internet.

TABLE-1

PROBLEM FACED BY THE SAMPLE RESPONDENTS

Sl.No	Particulars	No. of respondents	Percentage
1	Site is slow	34	57
2	Site is not opening	13	21
3	Service follow up is poor	5	8

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A study on the reasons behind employment in the unorganised sector

S.S. Krishna Sanyal, III B. Com, Holy Cross College, Nagercoil.

Dr. M. Mary Helen Stella, M.Com., M.Phil., Ph.D., Head of the Department of Commerce,
Holy Cross College, Nagercoil

Introduction:

Creating employment and income is crucial for development. Most developing countries nowadays struggle with high unemployment or underemployment. Many people can barely live from what they earn. This is why creating new employments with satisfactory income and improving the working conditions for existing employments is highly important.

The Global employment trends report also said that the world faces the additional challenge of creating jobs for the estimated 900 million workers living with their family below the poverty line, mostly in developing countries. Secured employment with social benefits and fair pay offer a way out of poverty, which explains why employment is a key pillar of development. Both the organised and unorganised sectors grant employment to the job seekers.

The **organised sector** is one that is incorporated with the appropriate authority or government and follows its rules and regulations. On the contrary, the **unorganized sector** can be understood as the sector, which is not incorporated with the government and thus, no rules are required to be followed. People who are employed in the organised sector used to get daily wages for their work, which is comparatively less than the pay prescribed by the government.

Though the workers in the unorganised sector face various problems they tend to work here because of some unavoidable reasons. Hence it is worth studying the reasons for working in the unorganised sector and the problems faced by them.

Objectives:

1. To find out the sectors in which the employment rate is high.
2. To find out the reasons for working in the unorganized sector.
3. To discover the problems faced by the people in the unorganized sector.

Methodology:

Data collected for the present research can be classified into

1. Primary data and
2. Secondary data.

• **Primary data**

The primary data are collected using the questionnaire under survey method.

• **Secondary Data**

The secondary data are collected from journals and websites.

Sampling method:

The data have been collected from 60 respondents using simple random sampling method.

Data Analysis and Interpretation:

Sector in which the respondents are employed

The sector in which the respondents are employed is presented in the below table.

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A STUDY ON IMPACT OF MODERN FOOD CULTURE IN KANYAKUMARI

Shalon Abiya.S & Sahaya Sopna.S, III B.com (Aided), Holy Cross College, Nagercoil

Dr. M. Mary Helen Stella, M.Com., M.Phil., Ph.D, Department of Commerce, Holy Cross College, Nagercoil

Introduction

Food habits are one of the most complex aspects of human behaviour, being determined by multiple motives and directed and controlled by multiple stimuli. Food acceptance is a complex reaction influenced by biochemical, physiological, psychological, social and educational factors. People differ greatly in their sensory response to goods.

For most people food is cultural, not nutritional. The food actually consumed is obviously determined by what is available. It is not surprising, therefore, to find considerable differences in food selection between rural and urban communities. Within both urban and rural communities, variations in food selection between families are also influenced by socio-economic status.

Food is an important part of Tamil culture, playing a role in everyday life as well as in festivals. Tamil cuisine is generally famous for its different species and also for spicy foods. Tamil Nadu cuisine is of wide variety of tasty dishes and offers wide range of both vegetarian and non-vegetarian dishes. Food is not just important for eating, but it is also a way of socializing, getting together with family, relatives and friends.

People nowadays consume specific food items like bread, cake, pizza, cold drinks etc., without which they feel their food intake is incomplete. These modern foods are prepared in an unhealthy manner. Modern methods include fast processing, high heat, industrial chemistry, addition of flavor extracts and coloring agents, as well as preservatives. Many of these are harmful to human health.

Objectives

The main objective of this research work is to study the impact of Modern Food Culture in Kanyakumari. The other objectives are:

1. To find out the source of information about modern food.
2. To identify the level of awareness of public about modern food.
3. To find out the reason why people prefer modern foods than traditional food.
4. To check the food items that are mostly preferred by the respondents.
5. To find out the problems caused by changing food habits of the sample respondents.
6. To point out the possible health hazards on consumption of modern food.

Methodology

The present study is both descriptive and analytical. In this study both primary and secondary data were collected by the researchers.

• **Primary data**

Primary data were collected through well-structured questionnaire. The data were collected from 50 sample respondents who have known well about both traditional and modern foods. For selecting the sample respondents, simple random sampling technique was used.

• **Secondary data**

The secondary data were collected from various books, newspapers, journals, previous projects, websites and internet sources.

Major Findings

1. Most of the respondents have got information about fast food from their friends and relatives.

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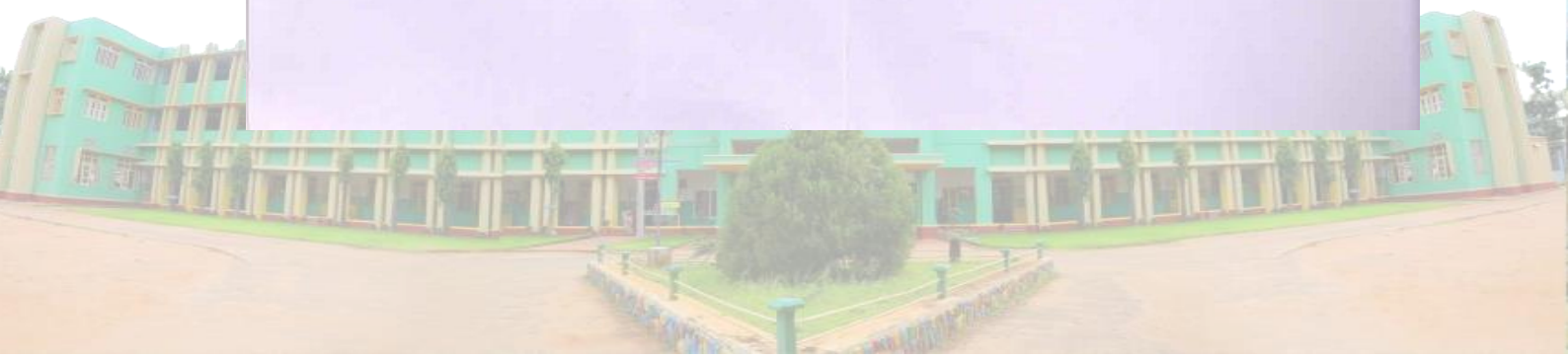
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A STUDY ON THE IMPACTS OF UNEMPLOYMENT IN NAGERCOIL TOWN

Udayanik Anilra Beaul¹ & Dr. M. Charles Deyanar²

¹ M.Com. Department of Commerce, Holy Cross College (Autonomous), Nagercoil
² Assistant Professor, Department of Commerce, Holy Cross College (Autonomous), Nagercoil

Abstract

The GDP growth of Indian Economy has touched the six year low in the first financial quarter of April-June 2020. It touched 5.8% growth in January-March, although in nominal terms India's GDP grew by 7.95%, which is also lowest since December 2012. Key sectors bearing the brunt of Indian Economy slow down are agriculture, automobile, Real Estate, unemployment etc. Unemployment plays a major role in economic slowdown. The most obvious impact of unemployment is that it hurts the economy. People who are unemployed have less money to spend. They are able to buy fewer goods and services, thus making businesses less profitable. This can lead in turn to even more unemployment. Methodology is to describe the research procedure. The present study is an empirical one based on the survey method. It is based on both Primary and Secondary data. Statistical method is the process specially designed to facilitate the quantitative data. Statistical tool is important to simplify the complex work involved in collection and processing of data without any damage to findings. In this study, various statistical techniques like percentage analysis, Gannett's ranking were used to analyse and interpret the collected data. This study focused on a study on the impacts of unemployment in Nagercoil town.

Key words: Economic slowdown, Unemployment, Jobs, Employment opportunities

INTRODUCTION

An economic slowdown occurs when the rate of growth in the GDP of an economy slows from the previous period. An economic slowdown is a natural part of the business cycle. However, it should not be confused with a recession, which involves an actual decline in GDP. Unemployment is one of the factors of economic slowdown. Unemployment rate is increasing in day-by-day in the current scenario. After China, India has the second largest population in the world. When all men and women get their job then no any problem arise in India. Unemployment occurs when workers who want to work are unable to find jobs, which means lower economic output. Social factors contribute in increasing the unemployment such as de-grading social status, geographical immobility, increase in the population & defective education system. There are some other factors like lack of experience, lack of communication skills, illness & disability. These are some of the factors of unemployment.

OBJECTIVES OF THE STUDY

- To find out the causes of unemployment of the sample respondent
- To analyze government initiative for reducing unemployment
- To suggest way to reduce unemployment