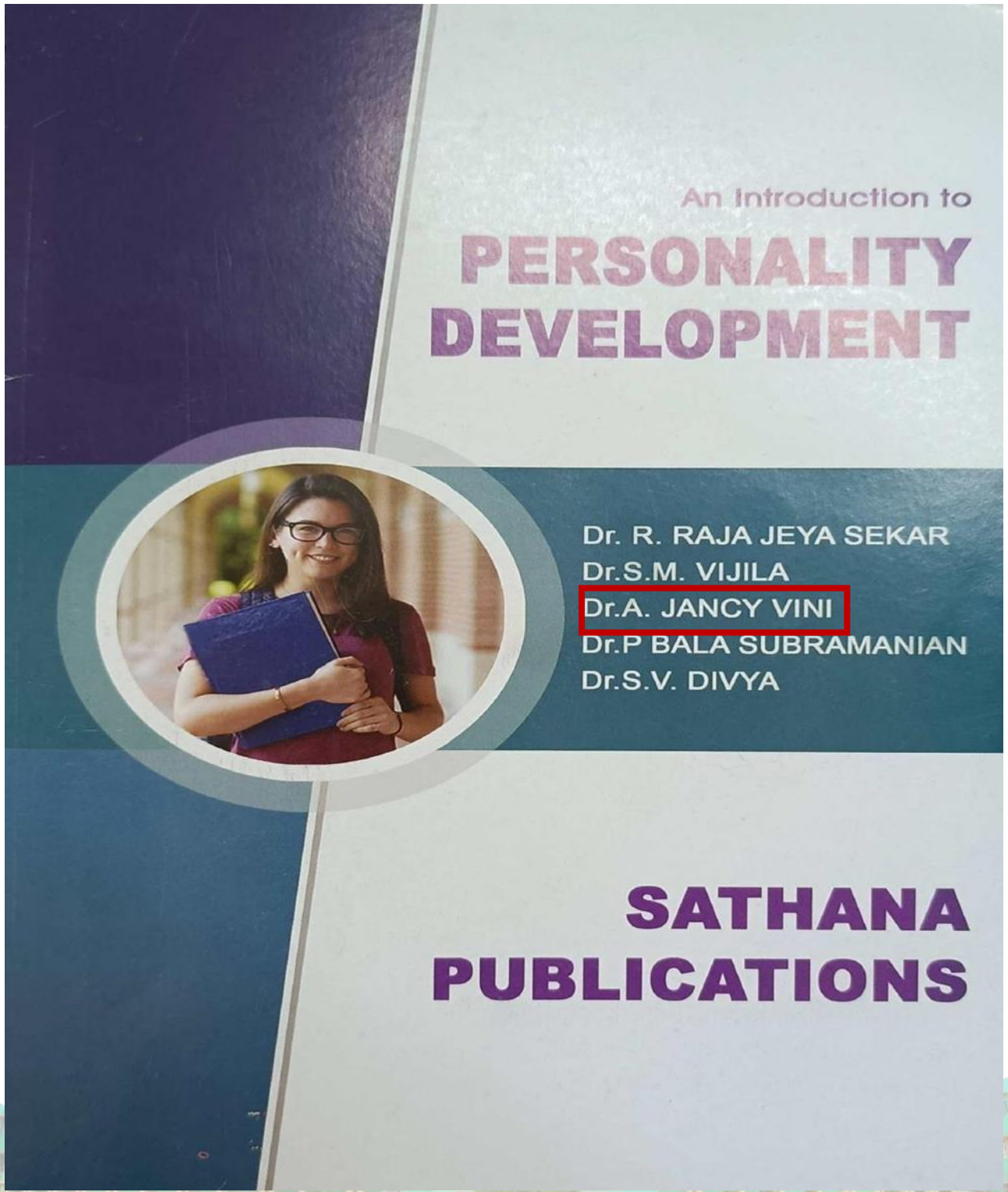
3.4.4 Details of books and chapters in edited volumes / books per teacher during the year 2021



Title	:	An introduction to personality development
First Edition	:	2021 August
Copy right	:	Publisher
Pages	:	112
Price	:	Rs. 70/- (Rs. Seventy Only)
Computer type setting	:	SIPCA COMPUTERS 313, Holy Cross College Road, Housing Board Jn, Nagercoil. Kanyakumari Dist - 629 004. Cell : 9843461615,04652-796005
Printed at	:	PRINT POINT, Nagercoil.
Published by	:	SATHANA PUBLICATIONS 313, Holy Cross College Road, Housing Board Jn, Nagercoil. Kanyakumari Dist - 629 004. Cell: 9843461615, 04652-796005
ISBN	:	9788193801758

CHAPTER 20
SOCIAL GRACE

Social grace denotes the socially acceptable skills and attitude used in social interactions. Such skills are basic and social etiquettes which are used in a social setting. Social graces help an individual in politely interacting with others. It also builds relationships with others. Social graces are nowadays emphasized in business scenarios. Social graces create a good impression on individuals.

Social graces are considered to be the benchmark in judging an individual's personality. These are socially acceptable manners and etiquettes which are expected in everyday life and career, making it one of the essential requirements in a society.

Social grace at work

Social grace at work is highly essential and required in a work setup. The working environment social graces include:

- Making proper introductions to people.
- Listening to others and not interrupting
- Being on time
- Cooperating with others
- Making eye contact while speaking

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The Minimum Dominating Energy of Certain Graphs

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Abstract :

M.R. Rajesh Kanna et al [5] defined the minimum dominating energy, $E_D(G)$ of some families of graphs. Motivated by this, we developed the minimum dominating energy of certain graphs such as Complete bipartite graph and Petersen graph.

AMS Subject Classification: 05C50, 05C69

Keywords : *minimum dominating set, minimum dominating matrix, minimum dominating eigenvalues, minimum dominating energy of a graph.*

1. Introduction

Let G = (V,E) be a simple undirected graph. The energy of a graph introduced [2]. Let G be a graph with p vertices and q edges and let $R = (r_{ij})$ be adjacency matrix of the graph. Eigenvalues of R is $\omega_1, \omega_2, \cdots, \omega_m$. Energy $E(G)$ is $\sum_{i=1}^{m} |\omega_i|$.

2. The Minimum Dominating Energy

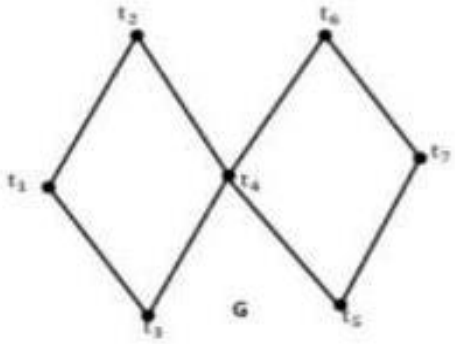
Definition 2.1: Sum of absolute eigenvalues of G is **minimum dominating energy** of G.

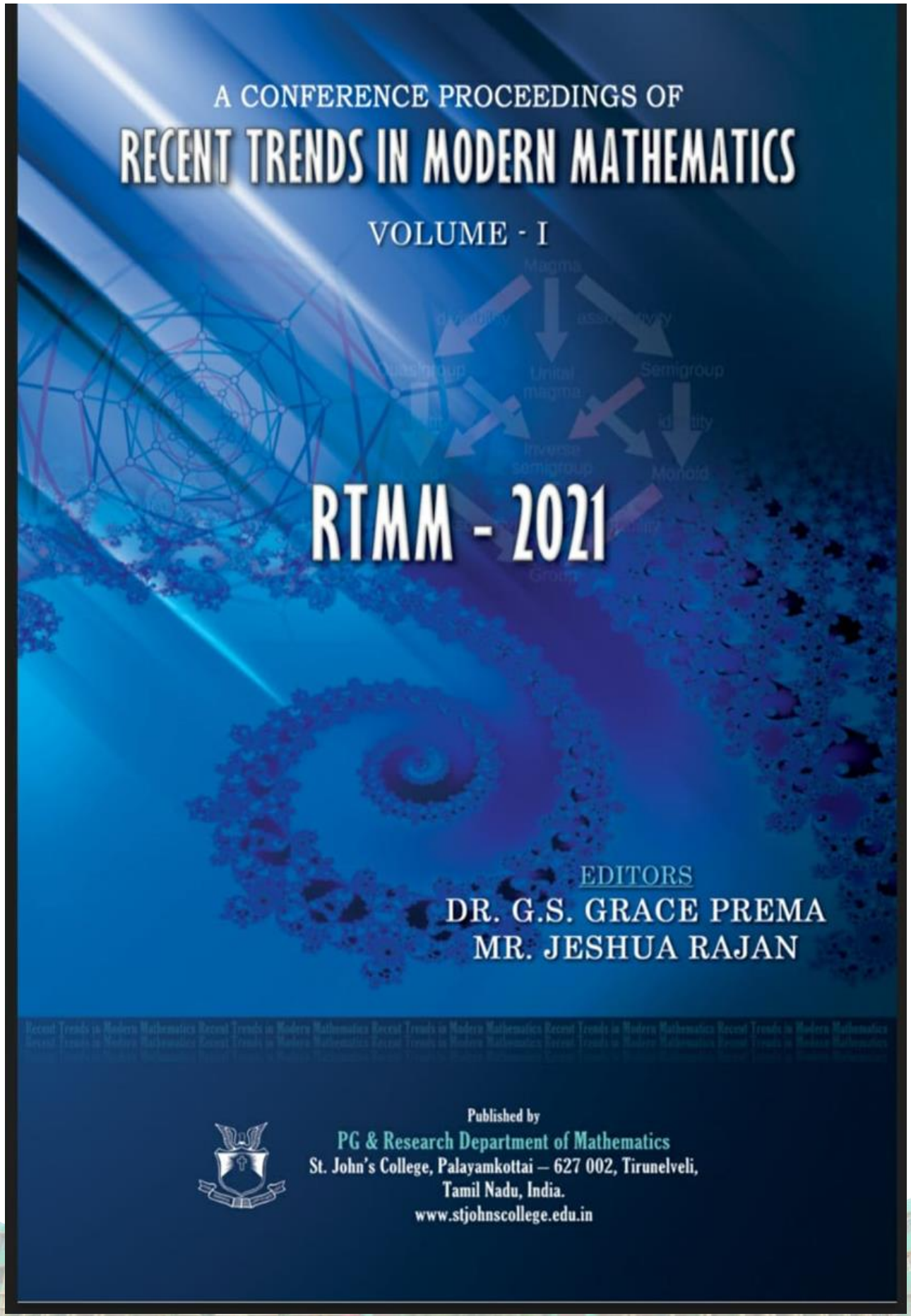
Example 2.2: The minimum dominating sets

i) $M_1 = \{ t_1 , t_4 , t_7 \}$

ii) $M_2 = \{ t_1 , t_5 , t_6 \}$

iii) $M_3 = \{ t_2 , t_3 , t_7 \}$

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The Edge Monophonic Global Domination Number of a Graph

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Tamil Nadu, India

Abstract

An edge monophonic set S of a connected graph G is said to be an edge monophonic global dominating set of G if S is both an edge monophonic and a global dominating set of G. The minimum cardinality of an edge monophonic global dominating set is the edge monophonic global domination number of G is denoted by $\bar{\gamma}_{me}(G)$. An edge monophonic global dominating set of minimum cardinality is called the $\bar{\gamma}_{me}$-set of G. The edge monophonic global domination number of some standard graphs is determined.

Keywords: monophonic path, edge monophonic number, domination number, global domination number, edge monophonic global domination number.

2010 Mathematics Subject Classification: 05C38, 05C69.

1 Introduction

A vertex v is an extreme vertex or simplicial vertex if the subgraph induced by its neighbors is complete. A vertex $v \in V$ in a connected graph G is said to be *semi extreme vertex* of G if $\Delta(G[N(v)]) = |N(v)| - 1$. A *chord* of a path P is an edge joining two non-adjacent vertices of G. A monophonic path is a chord less path. For two vertices x and y, the closed interval $J[x, y]$ consists of all vertices lying in a x-y monophonic. For a set M of vertices, let $J[M] = \cup_{x,y \in M} J[x, y]$. A set $M \subseteq V$ is called a monophonic set of G if $J[M] = V$. The monophonic number $m(G)$ is the minimum order of its monophonic sets and any monophonic set of order $m(G)$ is a minimum monophonic set or a m-set of G. For two vertices x and y, the closed interval $J_e[x, y]$ consists of all edges lying in a x-y monophonic. If x and y are adjacent, then $J_e[x, y] = \{xy\}$. For a set M of vertices, let $J_e[M] = \cup_{x,y \in M} J_e[x, y]$. A set $M \subseteq V$ is called an edge monophonic set of G if $J_e[M] = E$. The edge monophonic number $m_e(G)$ is the minimum order of its edge monophonic sets and any edge monophonic set of order $m_e(G)$ is a minimum edge monophonic set or a m_e-set of G. A set $D \subseteq V$ of vertices in a simple graph G is called a dominating set if every vertex $v \in V$ is either an element of D or is adjacent to an element of D. The minimum cardinality of a dominating set in G is called the domination number of G and is denoted by $\gamma(G)$. A subset $D \subseteq V$ is called a global dominating set in G if D is a dominating set of both G

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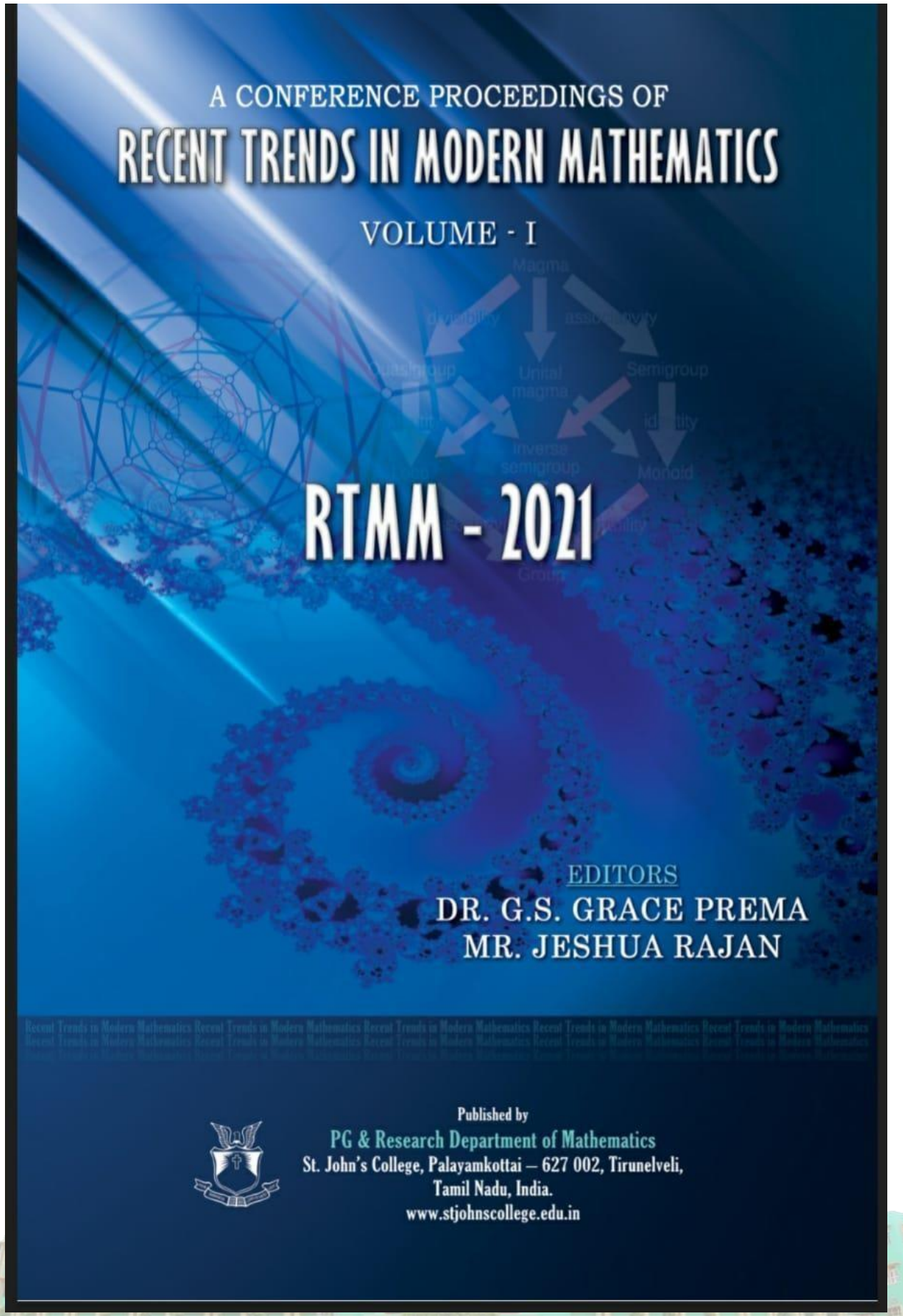
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Minimum Dominating Distance Energy of Cycle Related Graphs

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Abstract: M.R. Rajesh Kanna et al defined the minimum dominating distance energy, $E_{D_M}(G)$ of some families of graphs such as, Star graph, Complete graph, Crown graph and Cocktail graphs. Motivated by this, we obtained the minimum dominating distance energy of Globe graph and Durer graphs. Relation between domination number, energy and rank of minimum dominating distance matrix of graphs are also established.

AMS Subject Classification: 05C50, 05C69

Keywords : minimum dominating set, minimum dominating distance matrix, minimum dominating distance eigenvalues, minimum dominating distance energy of a graph.

1. INTRODUCTION

Let G = (V, E) be a simple undirected graph. I. Gutman [6] introduced the concept of energy of a graph in the year 1978. Let G be a graph with n vertices and m edges and let the adjacency matrix of the graph be $R = (r_{ij})$. $\omega_1, \omega_2, \cdots, \omega_m$ assumed in non-increasing order, are the eigenvalues of the graph G. The eigenvalues of G are real with sum equal to zero. Since, A is real symmetric. The energy $E(G)$ of G is defined to be the sum of the absolute values of the eigenvalues of G. i.e., $E(G) = \sum_{i=1}^{m} |\omega_i|$ [7,8]

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THE FORCING CHROMATIC DETOUR NUMBER OF A GRAPH

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Tirunelveli-627 012, Tamil Nadu, India

2 Abstract

Let G be a connected graph and S be a χ_{dn}-set of G. A subset $T \subseteq S$ is said to be a *forcing subset* for S if S is the uniqueminimum chromatic detour set containing T. A *forcing chromatic detour number* of S, denoted by $f_{\chi dn}(S)$ is the cardinality of a minimum forcing subset of S. The forcing chromatic detour number of G, denoted by $f_{\chi dn}(G)$ is $f_{\chi dn}(G) = \min\{f_{\chi dn}(S)\}$ where the minimum is taken over all minimum chromatic detour sets S in G.Some general properties satisfied by this concept are studied.The forcing chromatic detour number of some standard graphs are determined.Connected graphs of order $n \geq 2$ chromatic detour number 0 or 1 or $\chi_{dn}(G)$ are characterized.

Keywords:detour number, chromatic number, forcing chromatic detour number.

Subject Classification: AMS Subject Classification. 05C15.

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 n and m respectively. For basic graph theoretic terminology, we refer to [3]. Two

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THE MINIMUM DOMINATING ENERGY OF STAR RELATED GRAPHS

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Contract Number: [1] 9445126645, [2] 9487410402 & [3] 8089897231

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ract: Chandrasekhar Adiga et.al., introduced the minimum covering energy of a graph which depends particular minimum cover. M.R. Rajesh Kanna et al defined the minimum dominating energy, $E_D(G)$ families of graphs such as, Star graph, Complete graph, Crown graph and Cocktail graphs. ted by this, we obtained the minimum dominating energy of star related graphs.

Subject Classification: 05C50, 05C69

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he Minimum Dominating Energy

ition 2.1: A **dominating set** in a graph G is a subset M of V(G) such that each element of V(G) – M cent to at least one vertex of M.

Equivalently N[M] = V.

If M is a dominating set of a graph G, then every super set $M' \supset M$ is also a dominating set.

ition 2.2:[6] The **minimum dominating set** in a graph G is a dominating set of minimum cardinality. set is also called γ - set.

nition 2.3:[6]The **domination number** of G, denoted by γ(G), is the minimum cardinality of all nating sets of G that is $\gamma(G) = \min \{ |M| / M \subseteq V, N[M] = V \}$

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k-product cordial labeling of Napier bridge graphs

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Abstract

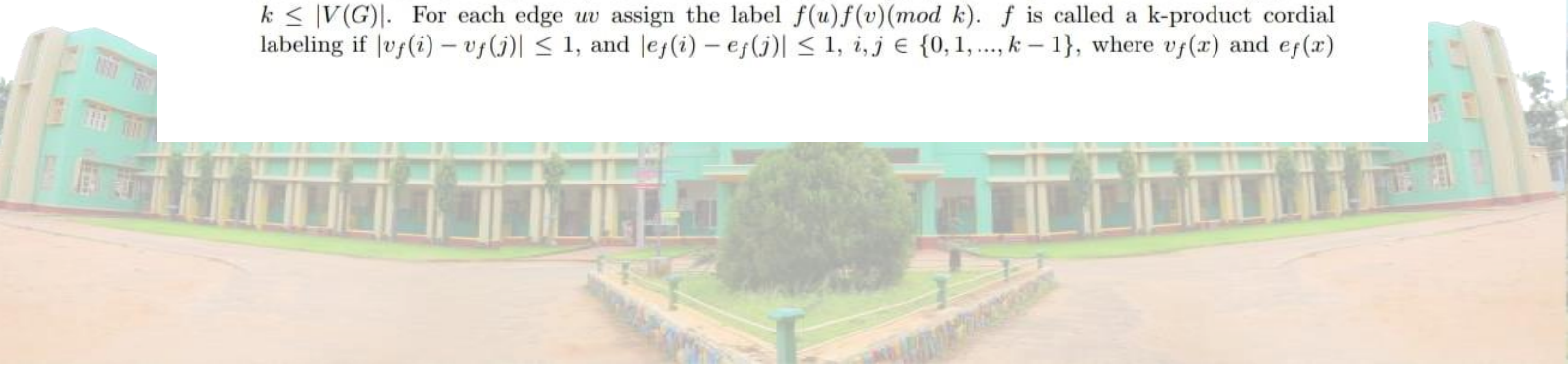
Let f be a map from $V(G)$ to $\{0, 1, ..., k-1\}$ where k is an integer, $1 \leq k \leq |V(G)|$. For each edge uv assign the label $f(u)f(v)(mod\, k)$. f is called a k-product cordial labeling if $|v_f(i) - v_f(j)| \leq 1$, and $|e_f(i) - e_f(j)| \leq 1$, $i, j \in \{0, 1, ..., k-1\}$, where $v_f(x)$ and $e_f(x)$ denote the number of vertices and edges respectively labeled with x $(x = 0, 1, ..., k-1)$. It is yet another study on k-product cordial labeling. In this paper, we define a new graph $P_n(t)$ namely Napier bridge graph and find some results on 3-product cordial and 4-product cordial labeling of Napier bridge graphs $P_n(3)$, $P_n(4)$ and $P_n(5)$.

Keywords: k-product cordial labeling; 3-product cordial labeling; 4-product cordial labeling; Napier bridge graph.
Subject Classification: 05C78.

1 Introduction

All graphs considered here are simple, finite, connected and undirected. We follow the basic notations and terminology of graph theory as in [3]. The concepts of labeling of graph has gained a lot of popularity in the field of graph theory during the last 60 years due to its wide range of applications. Labeling is a function that allocates the elements of a graph to real numbers, usually positive integers. In 1967, Rosa [12] published a pioneering paper on graph labeling problems. Thereafter, many types of graph labeling techniques have been studied by several authors. All these labelings are beautifully classified by Gallian [2] in his survey. Cordial labeling is a weaker version of graceful and harmonious labeling was defined by Cahit [1]. Let f be a function from the vertices of G to $\{0, 1\}$ and for each edge xy assign the label $|f(x) - f(y)|$. f is called a cordial labeling of G if the number of vertices labeled 0 and the number of vertices labeled 1 differ by at most 1, and the number of edges labeled 0 and the number of edges labeled 1 differ at most by 1. Motivated by the concept of cordial labeling, Sundaram et al. [13] introduced the concept of product cordial labeling. Let f be a function from $V(G)$ to $\{0, 1\}$. For each edge uv, assign the label $f(u)f(v)$. Then f is called product cordial labeling if $|v_f(0) - v_f(1)| \leq 1$ and $|e_f(0) - e_f(1)| \leq 1$ where $v_f(i)$ and $e_f(i)$ denotes the number of vertices and edges respectively labeled with $i(i = 0, 1)$. Several results have been published on this topic (see [2]).

In 2012, Ponraj et al. [11] extended the concept of product cordial labeling and introduced k-product cordial labeling: Let f be a map from $V(G)$ to $\{0, 1, ..., k-1\}$ where k is an integer, $1 \leq k \leq |V(G)|$. For each edge uv assign the label $f(u)f(v)(mod\ k)$. f is called a k-product cordial labeling if $|v_f(i) - v_f(j)| \leq 1$, and $|e_f(i) - e_f(j)| \leq 1$, $i, j \in \{0, 1, ..., k-1\}$, where $v_f(x)$ and $e_f(x)$



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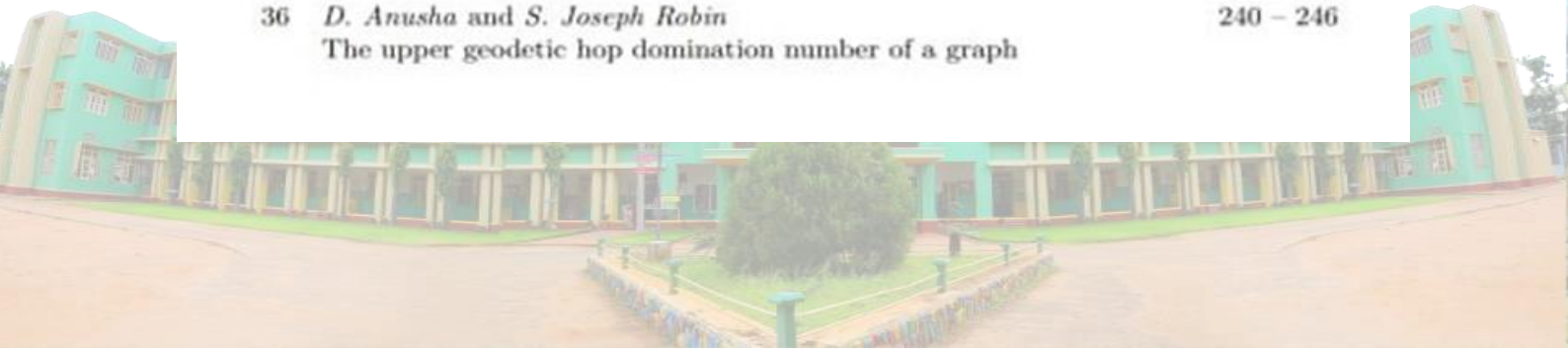

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Minimum Dominating Distance Energy of Some Bipartite Graphs

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[1,2] Research Department of Mathematics, Holy Cross College (Autonomous), Nagercoil
[3]Malankara Catholic College, Mariagiri, Kanyakumari
Tamilnadu, India

Abstract

M.R. Rajesh Kanna et al defined the minimum dominating distance energy, $E_{Dd}(G)$ of some families of graphs such as, Star graph, Complete graph, Crown graph and Cocktail graphs. Motivated by this, we obtained the minimum dominating distance energy of Barbell graph, Complete Bipartite graph and Shadow graph $D_2(S_{1,n})$. Relation between domination number, energy and rank of minimum dominating distance matrix of graphs are also established.

Keywords: minimum dominating set, minimum dominating distance matrix, minimum dominating distance eigenvalues, minimum dominating distance energy of a graph.
Subject Classification: 05C50, 05C69

1 Introduction

Let G = (V, E) be a simple undirected graph. I. Gutman [6] introduced the concept of energy of a graph in the year 1978. Let G be a graph with n vertices and m edges and let the adjacency matrix of the graph be $R = (r_{ij})$. $\omega_1, \omega_2, \omega_3 ... \omega_m$ assumed in non-increasing order, are the eigenvalues of the graph G. The eigenvalues of G are real with sum equal to zero. Since, A is real symmetric. The energy $E(G)$ is defined to be the sum of the absolute values of the eigenvalues of G. i.e., $E(G) = \sum_{s=1}^{m} |\omega_s|$ [7,8]. The distance matrix of G is the square matrix of order n whose $(i, j)^{th}$-entry is the distance (= length of the shortest path) between the vertices v_i and v_j. Let $\omega_1, \omega_2, \omega_3, \ldots, \omega_m$ be the eigenvalues of the distance matrix of G. The distance energy DE is defined by $DE = DE(G) = \sum_{s=1}^{m} |\omega_s|$. Detailed studies on distance energy can be found in [2, 3, 5, 9, & 12].

2 The Minimum Dominating Distance Energy

Definition 2.1. [1] A dominating set in a graph G is a subset M of V(G) such that each element of V(G) M is adjacent to at least one vertex of M. Equivalently N[M] = V.
If M is a dominating set of a graph G, then every super set $M' \supset M$ is also a dominating set.

Definition 2.2. [10] The minimum dominating set in a graph G is a dominating set of minimum cardinality. This set is also called γ - set.

Definition 2.3. [1] The domination number of G, denoted by $\gamma(G)$, is the minimum cardinality of all dominating sets of G that is

$$\gamma(G) = min|M|/M \subseteq V, N[M] = V.$$

Definition 2.4. [11] Let G be a simple graph of order n with vertex set $V = t_1, t_2, ...t_m$ and edge set E. Let M be a minimum dominating set of the graph G. The minimum dominating distance matrix of G is the m m matrix defined by $R_{Md}(G) = (r_{ij})$, where $r_{ij} = \begin{cases} 1 & if \quad i = j \ \ and \ \ v_i \in M \\ d(v_i, v_j) & otherwise. \end{cases}$

The characteristic polynomial of the minimum dominating distance matrix $R_{Md}(G)$ is

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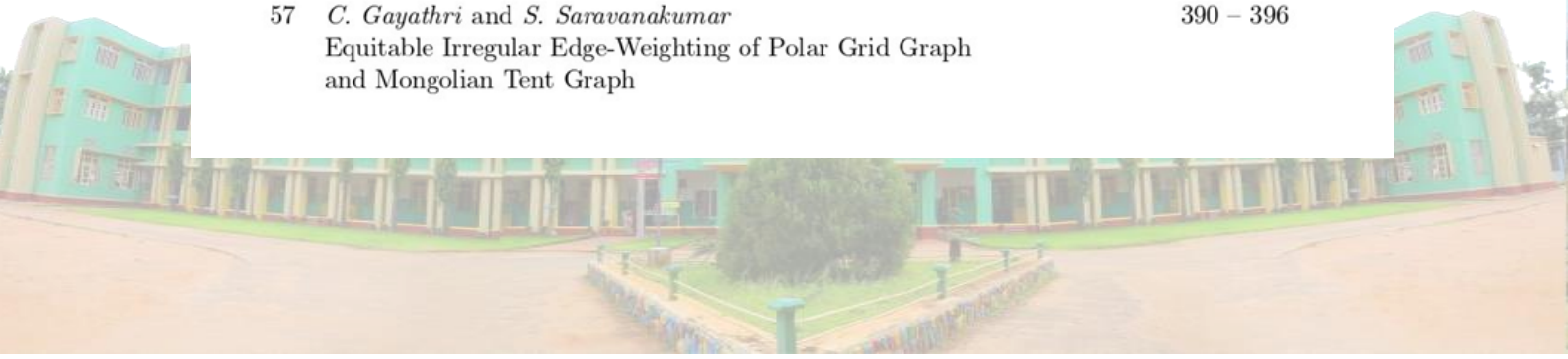

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The Geodetic Cototal Domination Number of a Graph

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Abstract

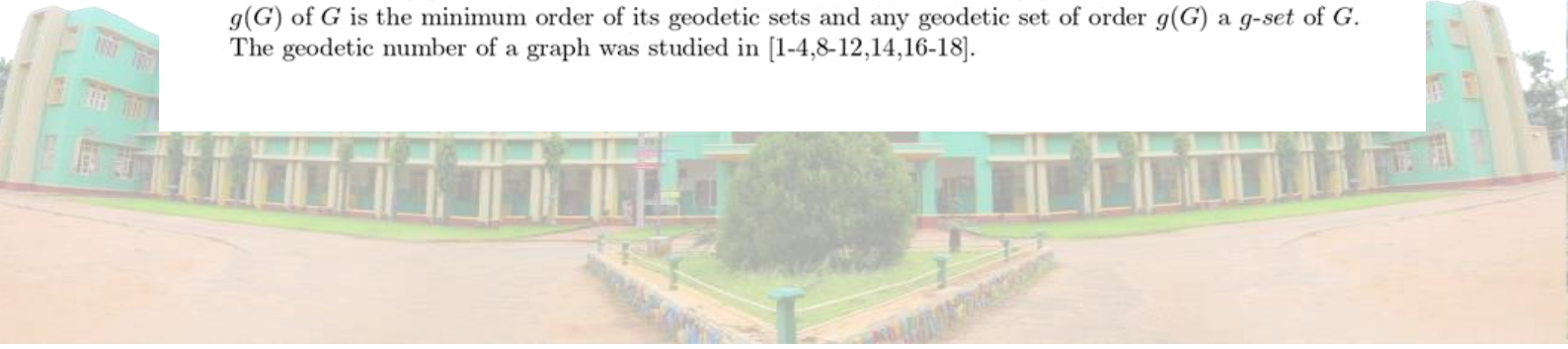
A set $S \subseteq V$ is said to be a geodetic cototal dominating set of G, if S is both geodetic set and cototal dominating set of G. The geodetic cototal domination number of G is the minimum cardinality among all geodetic co-total dominating sets in G and denoted by $\gamma_{gct}(G)$. Some of its general properties are studied. Connected graphs of order $n \geq 2$ with geodetic cototal domination number 2 or n are characterized. It is shown that for every pair a and b of integers with $2 \leq a \leq b$, there exists a connected graph G such that $g(G) = a$ and $\gamma_{gct}(G) = b$. Also it is shown that if G and $\overline{G}$ are connected graph of order $n \geq 4$, then $4 \leq \gamma_{gct}(G) + \gamma_{gct}(\overline{G}) \leq 2n$. Moreover the lower bound is sharp if and only if $G = P_4$ and the upper bound is sharp if and only if $G = C_5$.
Keywords: geodetic co-total dominating number, co-total dominating number, dominating number, geodetic number.

AMS Subject Classification: 05C12, 05C69.

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 m and n respectively. For basic graph theoretic terminology, we refer to [7]. $N(v) = \{u \in V(G) : uv \in E(G)\}$ is called the *neighborhood* of the vertex v in G. The *degree* of a vertex of a graph is the number of edges that are incident to be vertex and is denoted $deg(v)$. The maximum degree of a graph G, denoted by $\triangle(G)$, and the minimum degree of a graph denoted by $\delta(G)$ are the maximum and minimum degree of its vertices. Let $S \subset V$ be any subset of vertices of G. Then the *induced subgraph* $G[S]$ is the graph whose vertex set is S and whose edge set consists of all of the edges in E that have both endpoints in S. A vertex v is called an *extreme vertex* if $G[N(v)]$ is complete. A graph is said to be *semi-complete* the distance between any two vertices is at most 2 and each edge of G lies on a triangle. An edge e of a graph G is called an *extreme edge* of G if one of its end is an extreme vertex of G. A vertex $v \in V(G)$ in a connected graph G is said to be *semi-extreme vertex* of G if $\triangle(G[N(v)]) = |N(v)| - 1$. A graph G is said to be *semi-extreme graph* if every vertex of G ia a semi-extreme vertex of G.

The *distance* $d(u, v)$ between two vertices u and v in a connected graph G is the length of a shortest u-v path in G. An u-v *path* of length $d(u, v)$ is called an u-v *geodesic*. A vertex x is said to lie on a u-v geodesic P if x is a vertex of P including the vertices u and v. The *eccentricity* $e(v)$ of a vertex v in G is the maximum distance from v and a vertex of G. $e(v) = max\{d(v, u) : u \in V\}$ The minimum eccentricity among the vertices of G is the *radius*, $radG$ and the maximum eccentricity is its *diameter*, $diamG$. We denote $rad(G)$ by r and $diamG$ by d. Two vertices u and v of G are *antipodal vertex* if $d(u, v) = d$. A vertex v is called a *peripheral vertex* of G, if $e(v) = d$. For two vertices u and v, the *closed interval* $I[u, v]$ consists of u and v together with all vertices lying in a u-v geodesic. If u and v are adjacent, then $I[u, v] = \{u, v\}$. For a set S of vertices, let $I[S] = \cup_{u,v \in S} I[u, v]$. Then certainly $S \subseteq I[S]$. A set $S \subseteq V(G)$ is called a *geodetic set* of G if $I[S] = V$. The *geodetic number* $g(G)$ of G is the minimum order of its geodetic sets and any geodetic set of order $g(G)$ a *g-set* of G. The geodetic number of a graph was studied in [1-4,8-12,14,16-18].



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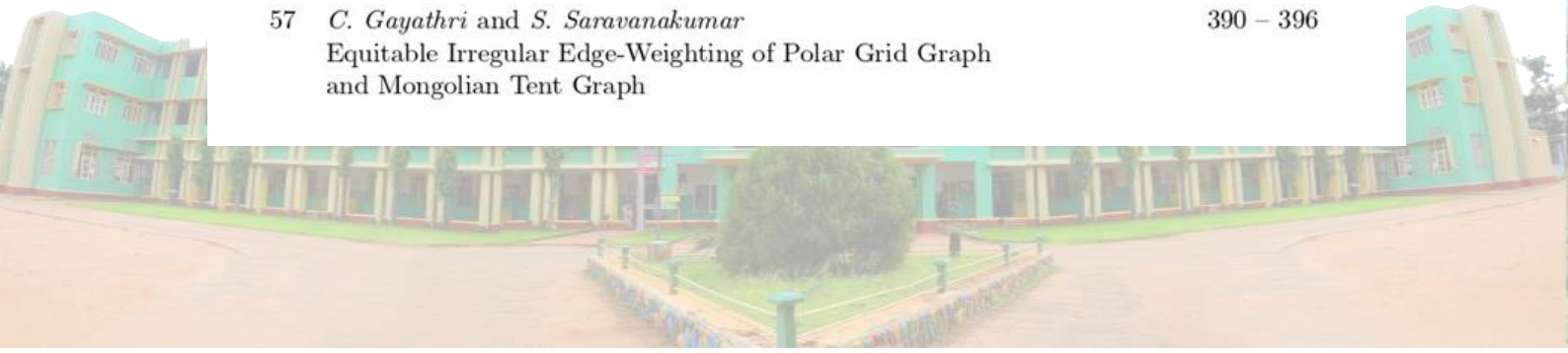

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The Adjacency Energy of a T_2 Hypergraph

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Abstract

A hypergraph $H = (X, D)$ is said to be a T_2 hypergraph if for any three distinct vertices u, v and w in$H$, there exist a hyperedge containing u, v but not w and another hyperedge containing w but not u and$v$. In this article, the adjacency energy of a T_2 hypergraph is studied. It is shown that, $\epsilon(H) > \sqrt{\frac{w(H)}{n}}$.

Keywords: T_2 hypergraph, Adjacency matrix, Adjacency energy.
Subject Classification: 05C65

1 Introduction

The basic definitions and terminalogies of a hypergraph are not given here and we refer it [3] and [13]. The concept of hypergraph was introduced by Berge in 1967. Later the same concept was studied by different authors in [13] and [1], Seena V and Raji Pilakkat were introduced Hausdroff hypergraph, T_0 hypergraph and T_1 hypergraph. Based on [10] and [11] we introduced a new class of hypergraph namely T_2 hypergraph is studied the parameter adjacency energy of a hpergraph. Throughout this article $H = T_2$ is a simple connected hypergraph with order n and size m. Here the order and size are the minimum number of vertices and edges used to define a T_2 hypergraph. The following definitions and theorems are used in sequel.

Definition 1.1. *[9] A hypergraph $H = (X, D)$is said to be a Hausdroff hypergraph if for any two distinct vertices u, v of X there exist hyperedges D_1 and $D_2 \in D$ such that $u \in D_1$, $v \in D_2$ and $D_1 \cap D_2 = \phi$.*

Definition 1.2. *[10] A hypergraph $H = (X, D)$is said to be a T_0 hypergraph if for any two distinct vertices u and v of X there exist a hyperedge containing one of them but not the other.*

Definition 1.3. *[11] A hypergraph $H = (X, D)$ is said to be a T_1 hypergraph if for any two distinct vertices u and$v$ of X there exist a hyperedge containing u but not v and another hyperedge containing v but not u.*

Definition 1.4. *[2] The Wiener index $W(H)$ is defined by $W(H) = \sum_{u,v \in X(H)} d_H(u, v)$.*

Definition 1.5. *[12] The Gutman index is defined as $GutH = \sum_{u,v \in X(H)} d_H(u, v)d_H(u)d_H(v)$*

Definition 1.6. *[6] The rank of a hypergraph is the maximum cardinality of any of the edges in the hypergraph.*

Definition 1.7. *[6] The number of edges of a hypergraph H that are incident to a given vertex is called the degree of the vertex.*

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The 3-Component Connectivity Number of Arithmetic Graph

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Abstract

A 3-component cut of G is a set of vertices whose removal yields a graph with at least three connected components. The 3-component connectivity number of G is denoted as $\kappa_3(G)$ is the cardinality of minimum number of vertices that must be removed from G in order to obtain a graph with at least three connected components. In this paper, we identified that for an arithmetic graph $G = V_n$ where $n = p_1^{a_1} \times p_2^{a_2} \times \cdots \times p_r^{a_r}$, $r \geq 3$ and if $a_i > 2$ for at least one i then the 3-component connectivity number is equal to its connectivity number r.

Keywords: arithmetic graph, component connectivity number, component cut.
Subject Classification: 05C40

1 Introduction

For notation and graph theory terminalogy not given here, we follow [2]. In this paper three component connectivity of an Arithmetic Graph $G = V_n$ is studied. A 3-component cut of G is a set of vertices whose removal yields a graph with at least three connected components. The three component connectivity number of G is denoted as $\kappa_3(G)$ is the cardinality of minimum number of vertices that must be removed from G in order to obtain a graph with at least three connected components. This concept was originally introduced by sampathkumar [10] has been recently studied for hypercubes by Hsu-et-al-in [11]. The definition is from [3]. A 3-component cut of G is a set of vertices whose removal yields a graph with at least three connected components. The 3- component connectivity number of G is denoted as $\kappa_3(G)$ is the cardinality of minimum number of vertices that must be removed from G in order to obtain a graph with at least three connected components. The arithmetic graph V_n is defined as a graph with its vertex set is the set consists of the divisors of n(excluding1) where n is a positive integer and $G = V_n, n = p_1^{a_1} \times p_2^{a_2} \times \cdots \times p_r^{a_r}$ where $p_i's$ are distinct primes and $a_i's \geq 1$ 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 concept was studied from [12]. Also various authors studied different parameters of an arithmetic graph. In [7] the super connectivity number of an arithmetic graph is studied by L.Mary jenitha and S.Sujitha. In [5] the connectivity number of an arithmetic graph is studied by L.Mary jenitha and S.Sujitha. Later, the various parameters of connectivity of an arithmetic graph are studied by the same authors in [6,8]. The following theorems are used in sequel.

Theorem 1.1. [6]*For an arithmetic graph G=V_n, n =$p_1^{a_1} \times p_2^{a_2}$ where p_1 and p_2 are distinct primes, $a_1, a_2 \geq 1$ then $\epsilon = 4a_1a_2 - a_1 - a_2$, where ϵ is the size of the graph G.*

Theorem 1.2. [6]*For an arithmetic graph G=V_n, n =$p_1^{a_1} \times p_2^{a_2}$ where p_1 and p_2 are distinct primes, $a_1, a_2 \geq 1$ then G is a bipartite graph.*

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On Neutrosophic Beta Omega Continuous Mappings

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[3]) Head and Associate Professor, V. O. Chidambaram College, (Affiliated to Manonmaniam Sundaranar University, Tirunelveli), Thoothukudi, Tamilnadu, India.

Abstract: In this paper, we introduce and analyze some applications of neutrosophic beta omega closed sets namely $T_{N\beta\omega}-$space,$PT_{N\beta\omega}-$space, $\beta T_{N\beta\omega}-$space, $SGT_{N\beta\omega}-$space, $GST_{N\beta\omega}-$space. We also introduce the concept of neutrosophic beta omega continuous mapping in neutrosophic topological spaces. Furthermore, we study the relation between the neutrosophic beta omega continuous mapping with the already neutrosophic continuous mapping. In addition, we discuss the properties of neutrosophic beta omega continuous mapping.

Keywords: $T_{N\beta\omega}-$space,$PT_{N\beta\omega}-$space, $\beta T_{N\beta\omega}-$space, $SGT_{N\beta\omega}-$space, $GST_{N\beta\omega}-$space, neutrosophic-beta-omega-continuous mapping.

The Upper Edge to Edge Hull Number of Graph

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Abstract: For a connected graph $G = (V, E)$, the smallest convex set containing S can be called as convex hull of S is denoted by $conv(S)$. Let S be a subset of $E(G)$, a set S of an edges of a graph G is called to edge to edge hull set S if $I_{e\square}[s] = E(G)$. An Edge to Edge hull set S in a connected graph G is called a minimal edge to edge hull set if no proper subset of S is an edge to edge hull set of G. From this edge to edge hull number, the researchers define a new concept $\square^{+}_{ee}(G)$ of a graph G that is an upper edge to edge hull number with at least three vertices and learn some of its properties. The upper edge to edge hull number $\square^{+}_{ee}(G)$ is the largest cardinality of a minimal edge to edge hull set of a graph. Connected graph of size m with upper edge to edge hull number m or

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A New Class of Functions on Soft J Closed Sets

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[2]) Research Scholar, P.G. and Research Department of Mathematics, V. O. Chidambaram College,(Affiliated to Manonmaniam Sundaranar University, Tirunelveli), Thoothukudi, India – 628008.

Abstract: In this paper, our aim is to define Soft quasi J open and closed maps and obtain some characterizations of it. Furthermore, we investigate the properties of Soft quasi J open and closed maps and the relationships with the existing Soft mappings.

Keywords: Soft J closed set; Soft J open set; Soft J continuous; Soft J irresolute; Soft strongly J closed map, Soft quasi J open map.

Line Graph of a Ferrers Graph

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[1], [2]) Department of Mathematics, Holy Cross College(Autonomous), Affliated to Manonmaniam Sundaranar University, Tirunelveli Nagercoil, Tamilnadu, India.

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 $yz \in E$. In this paper, we study the line graph of a ferrers graphs.

Keywords: Ferrers graph, diameter of graph, line graph.

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The Open Geodetic Vertex Covering Number of a Graph

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Abstract

A subset S of vertices of a connected graph G is said to be an *open geodetic vertex cover* of G if S serves both as an open geodetic set and a vertex covering set of G. An open geodetic vertex cover having smallest number of vertices is called a *minimum open geodetic vertex cover* of G and this number is called the *open geodetic vertex covering number* $og_\alpha(G)$ of G. An open *geodetic* vertex cover of G with cardinality $og_\alpha(G)$ is said to be an og_α-set of G. The parameter $og_\alpha(G)$ is determined for paths, cycles, complete graphs, complete bipartite graphs and wheels. Characterization is given for connected graphs G of order n with $og_\alpha(G) = 2$.

Keywords: *open geodetic number, vertex cover, open geodetic vertex covering number*

1.Introduction

For basic graph theoretic terminology and basic definitions not given here we refer to Harary [7]. The geodetic number of a graph was introduced in [2,8] and this concept was further studied in [3,5,6]. A set S of vertices in a connected graph G is an *open geodetic set* if for each vertex v in G either v is an extreme vertex of G and $v \in S$ or v is an internal vertex of an $x - y$ geodesic for some $x, y \in S$. An open geodetic set of minimum cardinality is a *minimum open geodetic set* and this cardinality is the *open geodetic number* $og(G)$ of G. The open geodetic number of a graph was introduced by G. Chartrand, F. Harary, H.C. Swart and P. Zhang in [4] and further studied by A.P. Santhakumaran and T. Kumari Latha in [9]. A subset $S \subseteq V(G)$ is called a *vertex covering set* of G if each edge of G is incident with at least one vertex in S. A vertex covering set with smallest number of vertices is a *minimum vertex covering set* of G. The *vertex covering number* of G is the cardinality of any minimum vertex covering set of G denoted as $\alpha(G)$. The vertex covering number of a graph was studied by D.K. Thakkar and J.C. Bosamiya in [10]. The geodetic vertex covering number was introduced by V.M. Arul Flower Mary, J. Anne Mary Leema, P. Titus and B. Uma Devi and this concept was studied in [1].

Theorem 1.1.[5] Every extreme vertex of a connected graph G belongs to every geodetic set of G.

Theorem 1.2.[1] Every simplicial vertex of a connected graph G belongs to every geodetic vertex cover of G.

Theorem 1.3.[9] If a non-trivial connected graph G contains no extreme vertices, then $og(G) \geq 4$.

Theorem 1.4.[1] If G is a connected graph of order $n \geq 2$, then $g_\alpha(G) = 2$ if and only if G

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Efficient Detour Global Domination Number of a Graph

Dr. A. Punitha Tharani1[1], A. Ferdina[2]

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[2]) Research Scholar, Department of Mathematics, St. Mary's College (Autonomous), (Affiliated to Manonmaniam Sundaranar University, Abishekapatti, Tirunelveli),Thoothukudi, Tamilnadu, India.

Abstract: In this paper, we introduce the concept efficient detour global domination number of a graph. A subset F of $V(G)$ is a detour global dominating set if for every vertex of G is contained in a detour joining some pair of vertices in F and global dominating set. The minimum cardinality taken over all detour global dominating sets of G is called the detour global domination number of G and is denoted by $\gamma_{dng}(G)$A detour global dominating set of cardinality $\gamma_{dng}(G)$ is called a $\gamma_{dng}-$ set of G. A detour global dominating set F is called an efficient detour global dominating set if F is an independent set and for every vertex not in F is adjacent to exactly one vertex in F. The efficient detour global domination number $Pr\gamma_{dng}(G)$ of G is the minimum cardinality taken over all efficient detour global dominating sets in G. An efficient detour global dominating set of cardinality $Pr\gamma_{dng}(G)$ is called a $Pr\gamma_{dng}-$set of G. We determine $Pr\gamma_{dng}(G)$ for some standard and special graphs and its properties are studied.

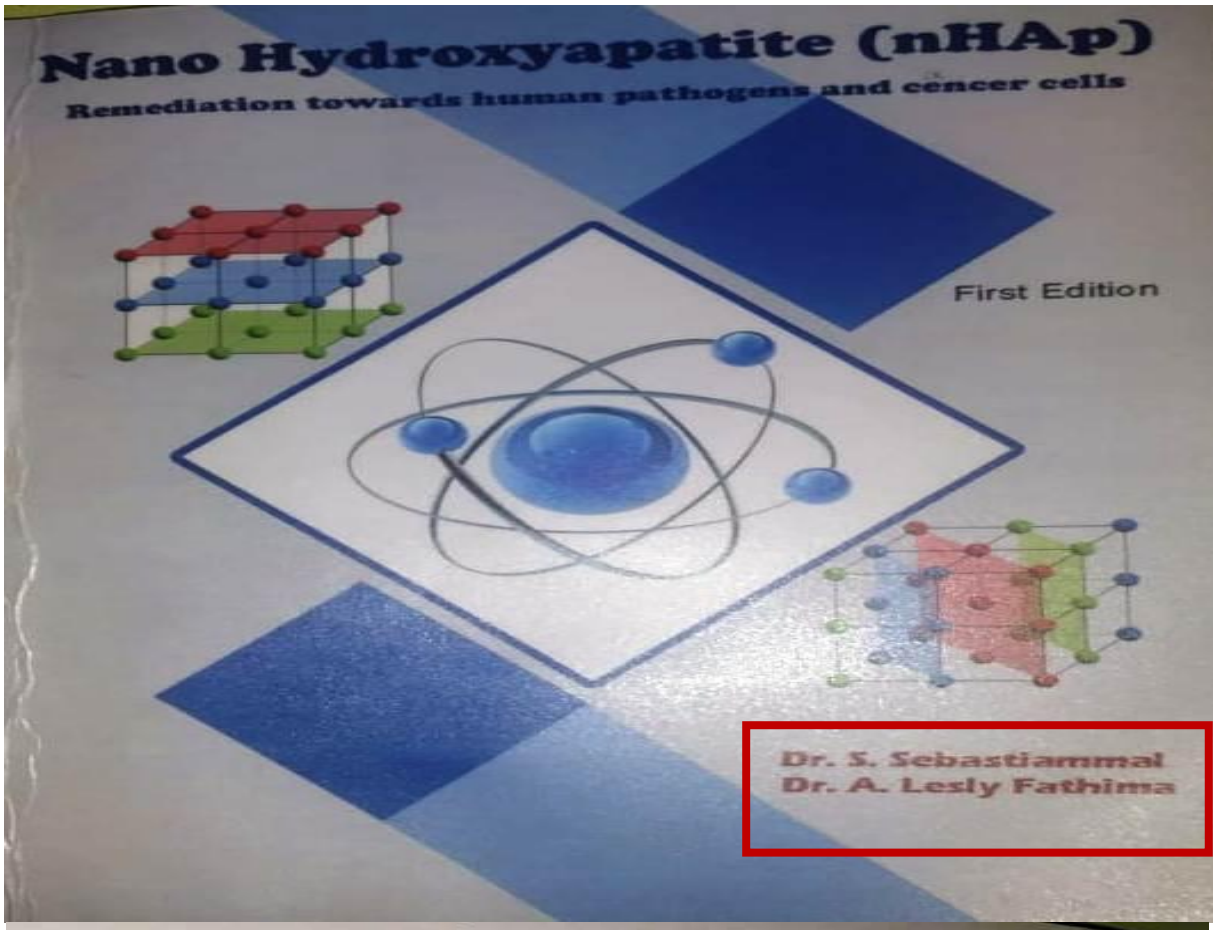
Keywords: detour global dominating set, efficient dominating set, efficient detour global dominating set.

The Forcing Geodetic Vertex Covering Number of a Graph

V.M. Arul Flower Mary[1], J. Anne Mary Leenna[2], P.Titus[3]

[1], [2]) Department of Mathematics, Holy Cross College (Autonomous), Nagercoil, (Affiliated to Manonmaniam Sundaranar University, Abishekapatti, Tirunelveli), Tamilnadu, India.
[3]) Department of Mathematics, University College of Engineering Nagercoil, Anna University: Tirunelveli Region, Tamilnadu, India.

Abstract: For a g_a-set S of G, a subset $T \subset S$ is called a forcing subset for S if S is the unique g_a-set containing T. A forcing subset for S of minimum cardinality is a minimum forcing subset of S. The forcing geodetic vertex covering number of S, denoted by $fg_a(S)$, is the cardinality of a minimum forcing subset of S. The forcing geodetic vertex covering number of G, denoted by $fg_a(G)$, is $fg_a(G) = \min fg_a(S)$, where the minimum is taken over all g_a-sets S in



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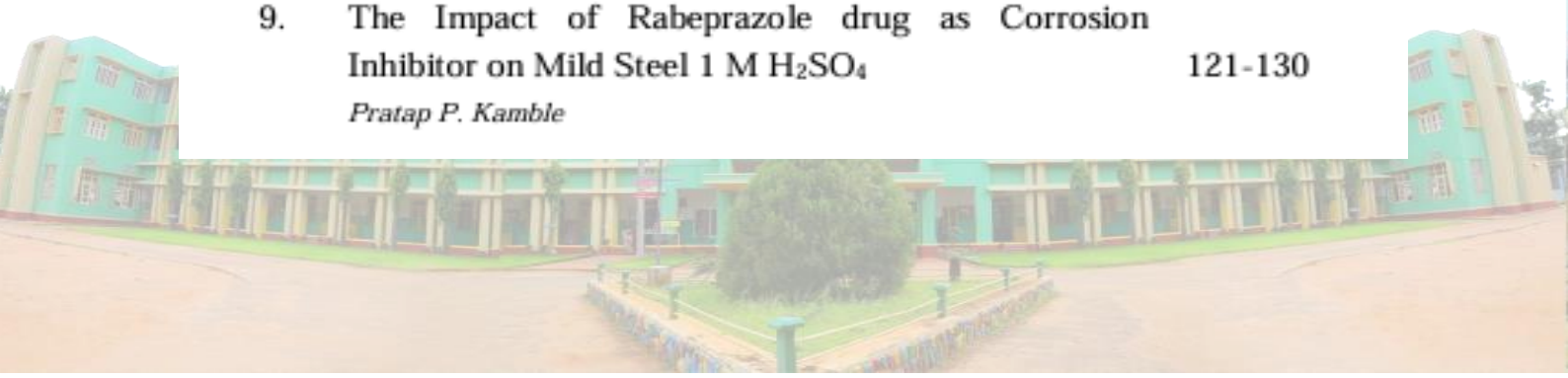

Chapter - 3

Bioactivity of Coumarin Derivatives and Its Methods of Composition

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Assistant Professor, Department of Chemistry, Holy Cross College (Autonomous), Nagercoil, Tamil Nadu, India

Dr. S. Ajith Sinthuja
Assistant Professor, Department of Chemistry, Hoetly Cross College (Autonomous), Nagercoil, Tamil Nadu, India

B Jone Magadelin
Research Scholar, Department of Chemistry, Holy Cross College (Autonomous), Nagercoil, Tamil Nadu, India

Abstract

Given the important position of coumarins in the field of natural and synthetic chemistry, there has been great interest in finding and developing methods to achieve accurate and efficient production of synthetic coumarins. The techniques that have been developed in this century and a half of coumarin chemical synthesis are numerous and involve a variety of mechanisms. Each one meets specific criteria and has specific advantages and disadvantages. Also, many modifications are often applied to already known methods which aim to make them more suitable for the needs of each research effort.

1. General Biological Properties

Coumarin's natural and synthetic analogies show a wide range of biological and pharmacological properties. In the recent literature, coumarins are referred to as biologically active compounds, which have broad pharmacological activity having Osteoporotic, antiseptic and analgesic properties. They act to treat asthma, [3] lymphadenopathy, selective estrogen receptor regulators, aromatase inhibitors, and others [4-9]. In addition, coumarin derivatives have antifungal and anticoagulant activity [10] while coumarin, coumarin derivative sulphene (3- (alpha, alpha-dimethyl) psoralen) and its derivatives have proven biological activity [11]. Significant biological activity has been shown by 3-alternative coumarins, which have been shown to have significant anti-inflammatory analgesic [12],

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OP10

Synthesis, Characterization and DNA Cleavage Activity of Novel $[Ru(bpy)_2(pytrzSH)_2](PF_6)_2$ Complex

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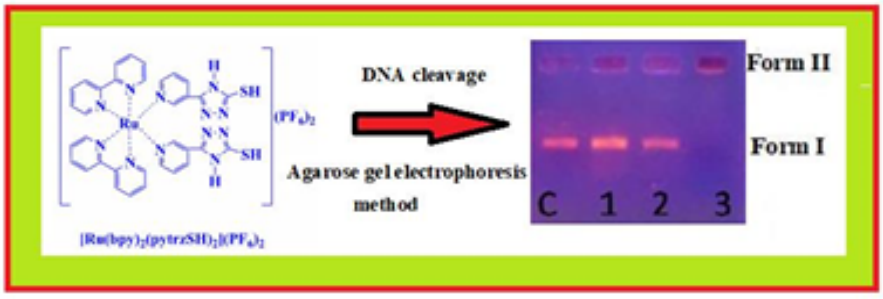
Abstract

The novel mixed ligand $[Ru(bpy)_2(pytrzSH)_2](PF_6)_2$ (bpy = 2,2′-bipyridine and pytrzSH=5-(3-pyridyl)-4H-1,2,4-triazole-3-thiol) complex has been synthesized and characterized by elemental analysis, UV, FTIR, ^{1}H NMR, ^{13}C NMR and MALDI-TOF mass spectral techniques. The spectral data confirms the formation of octahedral $[Ru(bpy)_2(pytrzSH)_2]^{2+}$ complex. The magnetic moment and molar conductance value is found to be less than 0 BM and 180 Ω^{-1} cm^2 mol^{-1}. The lipophilic nature of the complex is determined from the partition coefficient (*log* P) value and is found to be 1.20 ± 0.004. The DNA cleavage activity of the synthesized complex on *E. coli* genomic DNA (gDNA) has been carried out using Agarose gel electrophoresis method. The purity of gDNA isolated from *E. coli* is found to be 1.7 and is used for DNA cleavage experiment. The extent of DNA cleavage activity of the synthesised complex on *E. coli* gDNA is determined from the band intensities and the cleaving ability depends on the nature of the ligands present in the complex. The pattern for the DNA cleavage of the synthesized complex is analysed by three lane forms (1, 2, 3) and the extent of DNA cleavage is in the order 3 >1=2. The synthesized complex shows no cleavage activity at 25 and 50 µg/mL, but exhibits full cleavage at 100 µg/mL. The thiol groups present in the intercalating pytrzSH ligands are responsible for the DNA cleavage activity of $[Ru(bpy)_2(pytrzSH)_2]^{2+}$ complex. The results indicate that the DNA cleavage activity of $[Ru(bpy)_2(pytrzSH)_2]^{2+}$ on *E. coli* gDNA depends on the concentration of the complex.



Keywords: $[Ru(bpy)_2(pytrzSH)_2]^{2+}$ complex; *E. coli* genomic DNA, Intercalating ligands, DNA Cleavage

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OP15

Studies on the Antibacterial and Catalytic Activities of Silver Nanoparticles Synthesized from Cyperus Rotundus L.

B. Jone Magadelin[1] and S. Ajith Sinthuja[2*]

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Abstract

The current work demonstrates a simple and green biosynthesis of silver nanoparticles (AgNps) using the extract of Cyperus rotundus L., a native plant having some medicinal importance. The antibacterial activity of AgNps on Escherichia coli, a Gram-negative bacterium as well as the catalytic activity of AgNps for degradation of azo dyes was investigated. The inhibition of the cell growth of Escherichia coli was found to occur in 18h corresponding to AgNps concentration of 7.2 $\mu g\ mL^{-1}$, considered as the minimum inhibitory concentration. The 99.9% cell killing was achieved in 18h on treatment with AgNps at a concentration of 7.8 $\mu g\ mL^{-1}$, considered as minimum bactericidal concentration. The Escherichia coli cell filamentation was observed when treated with AgNps. The bactericidal activity of Escherichia coli is thought to be due to the cell death via AgNps concentration dependent reactive oxygen species production. The catalytic activity of AgNps for degradation of azo dyes (methyl orange, methyl red and congo red) in presence of sodium borohydride was also investigated. Almost 95% dye degradation occurred in few minutes using AgNps and nil without AgNps. The degradation pathway follows pseudo first order kinetics. The activation energy for dye degradation was calculated.

Keywords: Silver nanoparticles (AgNPs); Cyperus rotundus L; Biosynthesis; Antibacterial activity; Catalytic activity

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GREEN SYNTHESIS AND CHARACTERIZATION OF Ag NPs USING JUSTICIA ADHATODA L. LEAF EXTRACT

B. Jone Magadelin[1] S. AjithSinthuja*
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Abstract.

Nanotechnology is the science of the manipulating matter at nanoscale has received much attention in last few years due to its multifaceted beneficial properties including medicinal, electrical, optical, chemical stability and catalytic activity. The novel properties of nanoparticles are widely deployed for various applications in medicine, cosmetics, biomedical devices and environmental remediation. Nano materials are also called as "wonder of modern medicine "due to their distinctive features such as catalytic, optical, antimicrobial, wound healing and anti-inflammatory properties. Among the available large number of nanoparticles, metal oxide nanoparticles are considered to be more promising as they exhibit unique physical, chemical and biological properties. Novel Properties and functions of nano particles are basically dependent on as size, distribution and morphology. Furthermore for the better antimicrobial and catalytic activity of nano particles there is a certain control over the shape and size of the nano particles which is achieved by using different stabilizer reducing agents and employing different synthesis method. Various physical and chemical methods are available for the synthesis of nano particle, in these methods various hazardous chemicals are used which is very toxic to our environment. Thus, a better alternative is required which can be attained by green synthesis, Green synthesis of nanoparticle is an eco-friendly approach which is in common practice.

The green synthesis is a simple alternative to chemical and physical methods due to low cost and less use of toxic chemicals. Silver has long been recognized as one of the nanoparticles having inhibitory effect on microbes present in medical and industrial process. Nanomaterials have a long list of applicability in improving human life and its environment. The synthesis and assembly of nanoparticles would define from the development of clean, nontoxic and environmentally acceptable "green chemistry" approaches for nanoparticles. Silver is an effective antimicrobial agent, exhibits low toxicity and has diverse in vitro and in vivo applications.

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Direct Microscopic Evaluation of Novel Ruthenium(II)-Phenanthroline-Benzoyl-Picolinic Acid Complex on SK-MEL-28 and Normal L6 Cell Lines

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[2]*Department of Chemistry, Holy Cross College (Autonomous), Nagercoil, Tamil Nadu.

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Abstract

The *in vitro*antiproliferative and cytotoxic evaluation of novel $[Ru(phen)_2(bzpic)_2]^{2+}$(phen = 1,10-phenanthrolineandbzpic = 3-benzoyl-pyridine-2-carboxylic acid) complex on SK-MEL-28 and normal L6 cell lines has been carried out by direct microscopic method. The morphological changesof cancerous SK-MEL-28 and normal L6 cell lines in the presence of $[Ru(phen)_2(bzpic)_2]^{2+}$ complex in DMEM is determined at various concentrations. The direct *in vitro*antiproliferative and cytotoxic evaluation of the synthesised complex clearly explains that the morphological changes in cells are purely based on concentrations through dose and time-dependent manner.

Keywords:$[Ru(phen)_2(bzpic)_2]^{2+}$ complex; SK-MEL-28 cell line;L6 cell line; Direct microscopic method

1.Introduction

Transition metal complexes have been extensively studied due to their potential applications in biological processes. Among the transition metal complexes, ruthenium complexes are stable and get easily accumulated in cancer tissues [1]. The most promising biological feature of ruthenium complexes include bio-distribution and are less toxic than that of cisplatin [2]. Due to its photophysical properties, charge, solubility and lipophilicity, Ru(II)-polypyridyl complexes act as potential cellular imaging for antitumor drugs, cellular targeting and therapeutic agents. Ru(II)-polypyridyl complexes non-covalently interact with biomolecules lends itself to design new therapeutic agents.Based on the literature survey, SK-MEL-28 melanoma and normal living L6 cell lines have high migratory potential and are used in the present investigation for analysing the *in vitro* antiproliferative and cytotoxic activity of $[Ru(phen)_2(bzpic)_2]^{2+}$ (phen= 1,10-phenanthroline and bzpic = 3-benzoyl-pyridine-2-carboxylic acid) complex. The synthesised $[Ru(phen)_2(bzpic)_2]^{2+}$ complex is characterized by analytical and spectroscopic techniques. The morphology of the cancerous SK-MEL-28 and normal L6 cell lines at various concentrations of $[Ru(phen)_2(bzpic)_2]^{2+}$ complexis carried out by direct microscopic observation method.

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THERMAL STUDY AND X-RAY DIFFRACTION STUDY OF CHELATING METAL COMPLEX

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ABSTRACT

Chelates are used for the elimination of harmful radioactive and heavy metal toxicity from the body. Some of the chelating agents such as ethylenediaminetetraacetic acid, ethylenediamine, and 1,2-trans-cyclohexylenedinitrilotetraacetic acid are used in the elimination of harmful radioactive metals from the body. Chelates used in food preservation. Fruit, fruit juice, foodstuffs, etc., are now preserved with the help of chelating compounds. Supplementation of essential trace elements is an area of increasing interest in the field of human and veterinary pharmacology. In the present work synthesis of tris N-methyl ethylene diamine iron complex. The synthesized complex was characterized by thermo gravimetric analysis and differential thermal analysis and X-ray diffraction.

KEY WORDS: Chelate, Electronic absorption, Poly dentate, Thermal stability, XRD

INTRODUCTION

Many essential biological chemicals are chelates. Chelates play important roles in oxygen transport and in photosynthesis. Furthermore, many biological catalysts (enzymes) are chelates. In addition to their significance in living organisms, chelates are also economically important, both as products in themselves and as agents in the production of other chemicals. A chelate is a chemical compound composed of a metal ion and a chelating agent. A chelating agent is a substance whose molecules can form several bonds to a single metal ion. Metals are an integral part of many structural and functional components in the body and the critical role of metals in physiological and pathological processes has always been of interest to researchers. Unfolding the latter has inspirednewer therapeutic strategies based on alteration of the metal concentrations in specific body organs and/or entire body evolving branches such as metallotoxicology and metallopharmacology. The use of metals to restore the normal healthy physiology of the body either by direct administration of essential metals. [1,2]

MATERIALS AND METHODS

Preparation of Metal Complexes

The complex $[Fe\ (CH_3\ NHCH_2\ CH_2\ NH_2\ )\ ]^{2+}$ was prepared from ferrous sulfate heptahydrate

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COMPARISON OF XRD PATTERNS OF IRON OXIDE NANOPARTICLES OBTAINED FROM A FEW MEDICINAL PLANT EXTRACTS AND SEM CHARACTERIZATION OF CHITOSAN IRON OXIDE NANOCOMPOSITE

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Abstract

Iron oxide nanoparticles have been synthesized in a green method using some medicinal plant extracts. Most of the medicinal plant extracts contain important constituents likealkaloids, glycosides, organic acids, resins, volatile oils, sugars, amino acids, proteins and enzymes, tannins, plant pigments oils and waxes, and inorganic ingredients. These constituents present in plants help in reducing metal salts to their corresponding nano particles. In the present study some of the medicinal plants likeAcalypha indica, Euphorbia hirta, Cleome viscosa, Cassia occidentalis and Ecbolium lingustrinum were collected, shade dried and extracted using ethyl alcohol. These extracts were used to reduce anhydrous iron (III) chloride to iron oxide nanoparticles. The resulting iron oxide nanoparticles were characterized using XRD spectrum. The results shows the formation of iron oxide nanoparticles. All the XRD peaks were found to be sharp which indicates the crystalline nature of the iron oxide nanoparticles. The SEM images of nanochitosan and iron oxide doped chitosan were recorded. The average particlesize of the chitosan and iron oxide doped chitosan nanoparticles lie between 1µm to 2 µm.

Key words

Nanoparticles, green method, resins, metal salts, *Euphorbia hirta.*

Introduction

Particles ranging in size from 1 – 100 nm are called as nanoparticles. The difference in physical and chemical properties of nanoparticles is because of the significant number of particles at the surface. They form a bridge between bulk materials and molecular sized particles.Plants during their growth process undergo a series of metabolic and biochemical process which decides

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EFFECT OF pH MODULATION ON HYDROXY PROPYL ALPHA CYCLODEXTRIN COMPLEXATION WITH STIGMASTEROL

Francy.K[a] And Dr.J.Premakumari[b]

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b – Associate Professor of Chemistry, Department of Chemistry, Scott Christian College, Nagercoil

Abstract

Stigmasterol is a phytosterol having high pharmacological property used in the treatment of various ailments including cancer. Its efficacy is restricted due to it's low aqueous solubility. To enhance the aqueous solubility of stigmasterol, inclusion complex with Hydroxy Propyl α-cyclodextrin (HPα-CD) is carried out at different pH ~ 4,6,7 and 9. This research work investigates the appropriate pH for the formation of stable inclusion complex between stigmasterol and HPα-CD. The liquid inclusion complexes at varied concentration in different pH medium were prepared and characterized using UV-Vis spectroscopy.The calculated stability constants are found to be 692, 651,553 and 443 M^{-1} at pH 4, 6, 7 and 9 respectively byBenesi-Hilderbrand equation. From the stability constants it is clear that pH~4 is favorable for stigmasterol:HPα-CD inclusion complex and this enhances solubility.

Introduction

Stigmasterol is an unsaturated phytosterol and is found in many vegetables, including legumes, nuts, seeds, herbs, and edible oils(1). Stigmasterol inhibits the survival of human umbilical vein endothelial cells (HUVECs) and iPSC-derived cardiomyocytes (2). Stigmasterol suppresses the development of various cancers(3). Hence stigmasterol is potent bioactive agent with significant therapeutic efficacy. This documented effectiveness of stigmasterol is restricted due to its chalky taste and poor solubility. To overcome this problem stigmasterol may be complexed with different compounds which would enhance their physicochemical properties.Cyclodextrins(CD's) are cyclic oligomersobtained by enzymatic transformer of starchThey are crystalline, homogeneous and nonhygroscopic substances which are torus – like macro – rings(4). This peculiar structure allows various substrates to be included in the cavity via non covalent bonds to form inclusion complexes. Interactions between CDs and guest molecules are accompanied by pH adjustments.

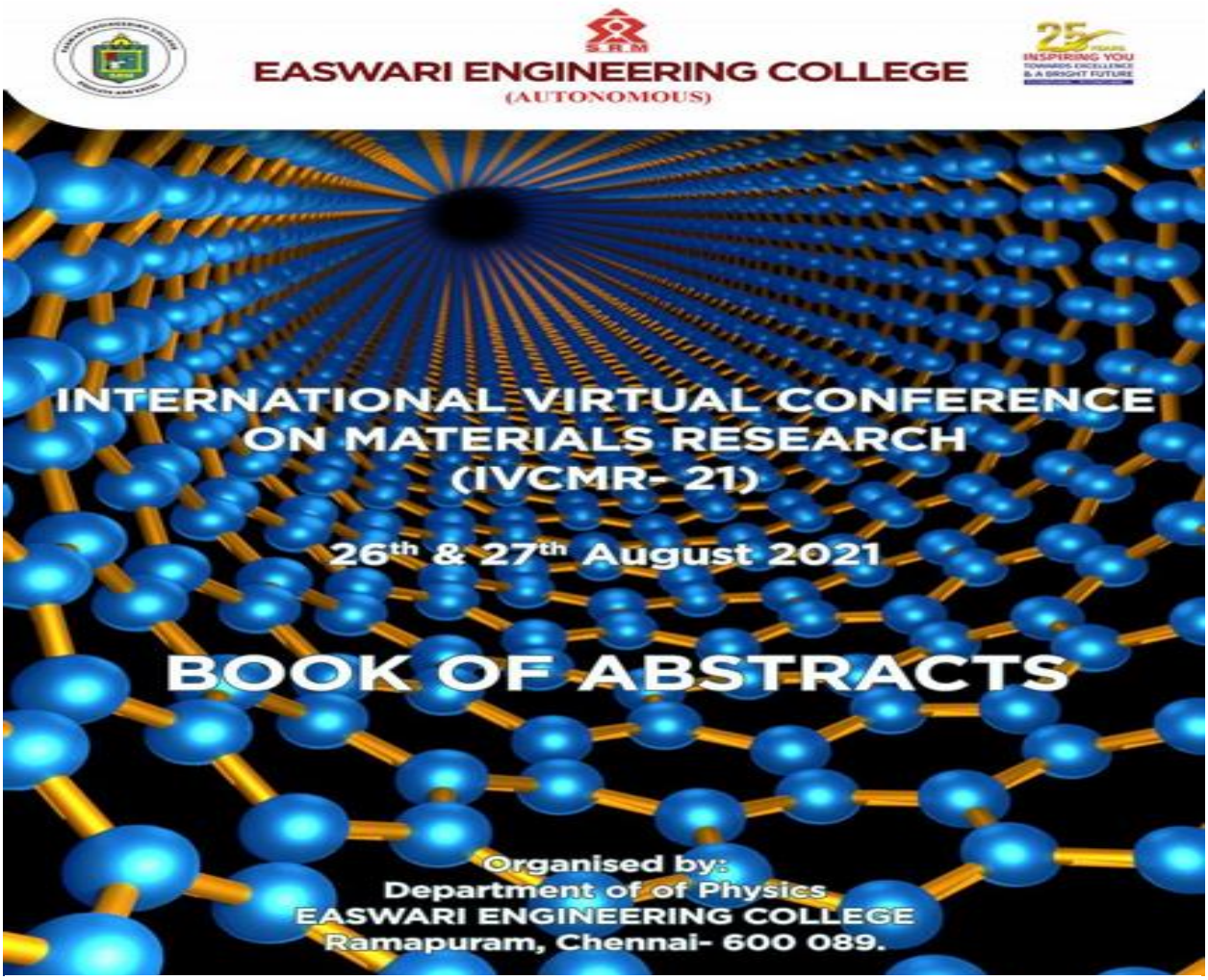
1. Materials and Methods

1.1. Preparation of liquid inclusion complex of Stigmasterol and HPα-CD

About 0.0089g of stigmasterol is accurately weighed and dissolved in 10ml solution maintained at pH~4. About 0.043g of HP α-CD is dissolved in 30ml of distilled water in a 250 ml beaker. Liquid inclusion complexes were synthesised by varying the concentration of HPα-CD and stigmasterol from $2x10^{-3}$M to $1x10^{-3}$M. Similarly for pH~6,7,9 stigmasterol was dissolved in respective pH solutions and inclusion complexes are prepared(5).

1.2. UV-VIS spectroscopy

Absorbance values were recorded for the liquid inclusion complexes of stigmasterol with HPα-CD using UV-1800, (Shimadzu) spectrophotometer(5).



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MR 050

Green biosynthesis of platinum nanoparticles using plant-mediated extracts – a review

Jone Magadelin B[1] and Dr. AjithSinthuja S[2*]

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ABSTRACT

Platinum nanoparticles (Pt NP's) have superior physicochemical properties and great potential in biomedical applications. Eco-friendly and economic approaches for the synthesis of Pt NP's have been developed to overcome the shortcomings of the traditional physical and chemical methods. Various biogenic entities have been utilized in the green synthesis of Pt NP's, including mainly plant extracts, algae, fungi bacteria, and their biomedical effects were assessed. Other biological derivatives have been used in the synthesis of Pt NP's such as egg yolk, sheep milk, honey, and bovine serum albumin protein. The green approaches for the synthesis of Pt NP's have reduced the reaction time, the energy required, and offered ambient conditions of fabrication. This review highlights the state-of-the-art methods used for green synthesis of Pt NP's, synthesis parameters, and their reported biomedical applications.

Keywords: Green synthesis, biosynthesis, platinum nanoparticles, anticancer, antioxidant, antibacterial, antifungal.

Contents

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PHARMACEUTICAL COMPONENTS FROM MARINE FLORA AND FAUNA

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[2]Department of Biomedical Sciences, Noorul Islam Centre for Higher Education, Kumaracoil, Kanyakumari District, TamilNadu.

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Abstract

Therapeutically important compounds of present scenario can be extracted from diversified natural sources like plants, animals, marine organisms, and microorganisms. Marine biota accounts for about 50 % of the world biodiversity, but their active potential as a rich source of novel bioactive compounds and their applications towards pharmaceutical and nutraceutical industries have grown recently. Marine microflora and fauna like Algae, Sponges, Bacteria, Fungi, Actinomycetes and Corals possess many bioactive substances, and can be used in the treatment of cancer, anemia, diarrhea, obesity, diabetes, atopic dermatitis etc. The most implemented natural products of marine are mainly accumulated in the invertebrates such as sponges, tunicates, bryozoans, and mollusks. They are a great highlight for natural antioxidants, colours, immunosuppressants, enzyme inhibitors, hypocholesterolemic agents, vitamins, enzymes, and antibiotics. Apart from these, they possess special concern towards food ingredients and dietary supplements, which is the special need of all human beings.

Key words: Therapeutic importance, Natural products, Bioactive compounds, Human health, Marine flora and fauna.

Dr. Mukta Sharma presently working as Professor and Head, Department of Microbiology at Shree Bankey Bihari Dental College, Ghaziabad, Uttar Pradesh, India. She has been teaching Microbiology for the last twenty years.

Her research work is focused on Bacteriocin (Nisin) production and probiotics. She has published a number of scientific research papers in national and international scientific journals apart from writing textbook of Microbiology for medical students and author of a book entitled Medical Microbiology and Immunology (MB 211). She has conducted many research programmes on Medical Bacteriology. She was also invited to participate and present her scientific research work in many international and national conferences. She has successfully completed a course of Medical Microbiology conducted by University of Goettingen, Germany. She is an Editorial Board Member of Journal of Pure and Applied Science & Technology and Academic Journals Online and lifetime member of Indian Journal of Microbiology.

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MICROBES- FERMENTED FOODS AND HUMAN HEALTH

Dr. Mukta Sharma

MICROBES - FERMENTED FOODS AND HUMAN HEALTH

Editor Dr. Mukta Sharma

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FERMENTED FOOD PRODUCTS AS A DIETARY SUPPLEMENT

J. Albino Wins
Department of Botany, Holy Cross College (Autonomous), Nagercoil. (Affiliated to ManonmaniamSundaranar University, Abishekapatti, Tirunelveli) Email : winsbt@gmail.com
&
M. Murugan
Department of Biomedical Sciences,
Noorul Islam Centre for Higher Education, Kumaracoil, Kanyakumari.

Abstract

More recently, the consumption of fermented foods has become an important dietary strategy for improving human health by all over the world. Many lactic acid bacteria, yeast and fungi contribute a great to food fermentations, by producing many food products.The consumption of fermented foods and fermented drinks possess lot of benefits to human health and boosting the immune system. The bio-transformation of sugars and starches will make the beneficial role of bacteria in fermenting the food products. Hence, the present study was focused to highlight the dietary supplements and the importance of fermented food products.

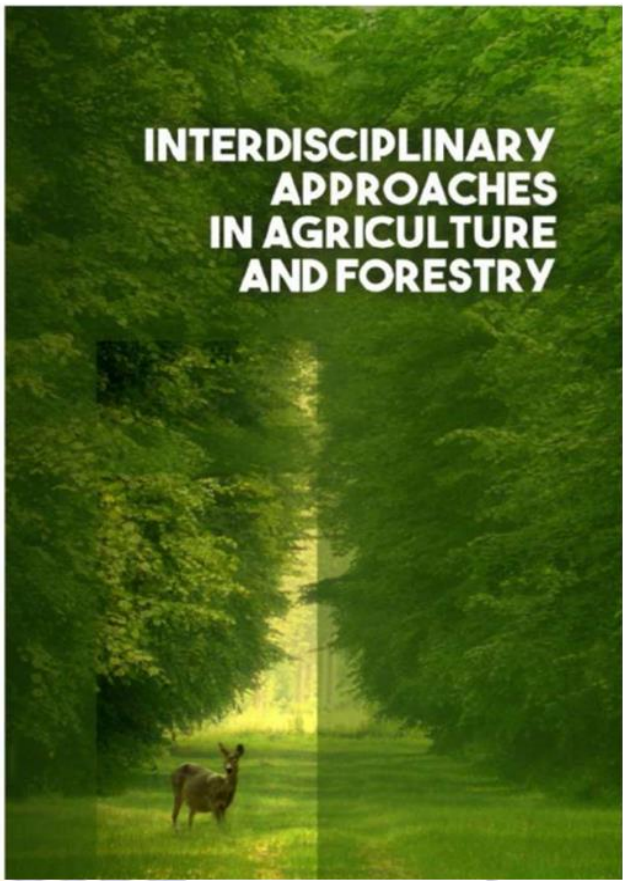
Key Words : Fermentation, Diet, Microorganisms, Food Products.

****

Introduction

Fermented foods have long been produced and used according to knowledge passed down from generation to generation but without the real understanding of the secret role of the microorganism(s) adopted in the process.They emerged as an important dietary strategy for improving human health[(5)] .The Western countries understand the main importance of fermentation and start facilitating in their household purposes, which in-turn converted into industrial commercial purposes.

The popularity and importance of fermented foods is due to their shelf-life, safety, functionality, sensory, flavor, texture and nutritional properties.The indigenous fermented foods like *dahi*, *bhalle*, *papad*, *idli*,



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Advancement in Crop Improvement

J. Albino Wins and M. Murugan*

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(Affiliated to Manonmaniam Sundaranar University, Tirunelveli)
*Department of Biomedical Engineering, Noorul Islam Centre for Higher Education, Kumaracoil, Kanyakumari District

Abstract:

Crop improvement is a necessary and urgent need of today in plant breeding sector. Due to tremendous population growth and sudden depletion of fossil fuels, there is more and more demand for plant based new products.Some modern developmental technologies will contribute to a great extent of crop improvement. Genetic engineering techniques with mutagenic properties possessing physical, chemical and biological factors helps in studying the particular genes and identification of molecular mechanisms in improving the crops.

Keywords: Genetic engineering, Gene transfer, Hybridization, Mutagenesis.

Introduction:

Crop improvement, is actually, the engineering of plants for the beneficial of humanity and society, but it's as old as agriculture. Before thousand years ago, the old age people create a sudden transit from hunting and foraging to cultivate the necessary plants and crops. There is strong evidence that the agricultural sectors are quietly degra ding, exacerbated due to the loss of biodiversity and of increasing unknown uncertainties of climatic change.Due to this switch on, there is more development of new and modern process, for the improvement of plants, in which human beings depend for food, feed and fiber. Crop improvement is a necessary and urgent need of today in plant breeding sector. Due to tremendous population growth and sudden depletion of fossil fuels, there is more and more demand for plant based new products.

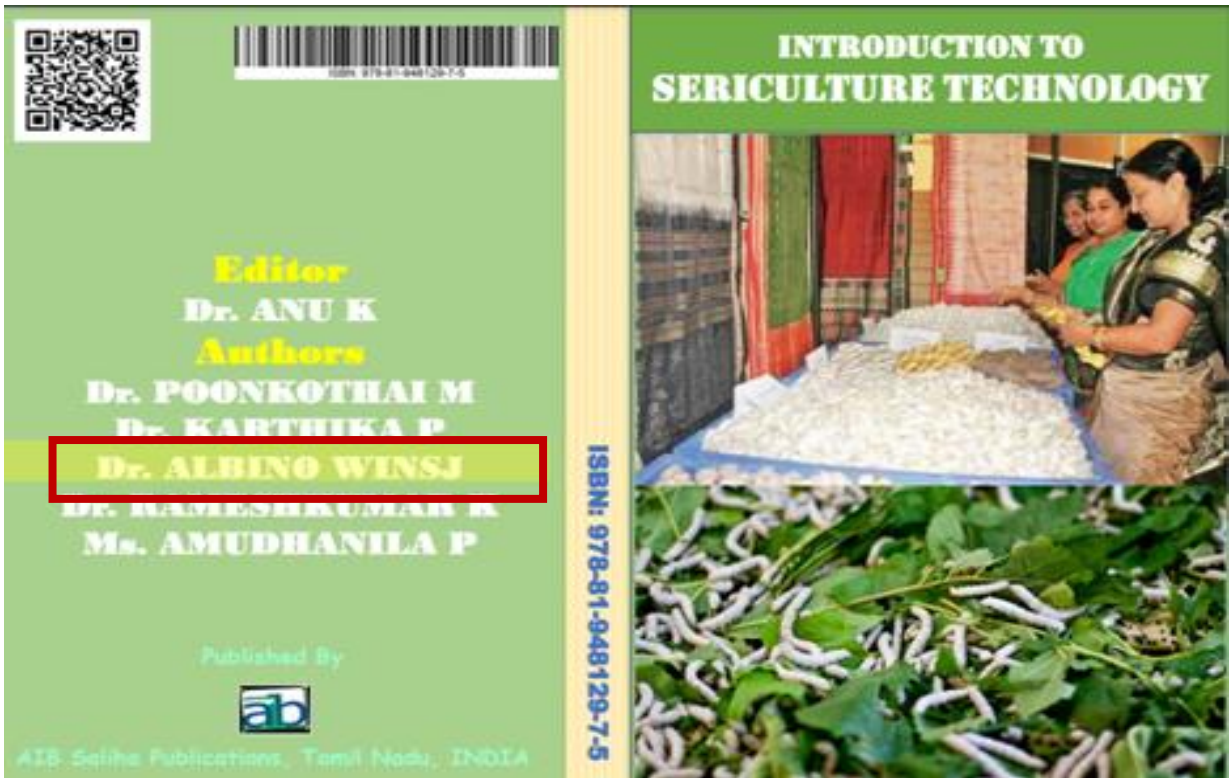
The 20th century insights a tremendous increase in crop yields due to crop improvement. There are so many reasons for the continuous improvements in crop yield. Mainly, there is hike development due to modern plant breeding technologies and introduction of agronomical interventions. Because of these improvements, people were strengthened with safer food that lowers malnutrition (Ali *et al*., 2015).

There is a great challenging effort in this century, faced by the human populationfor the intense need of food security. It was estimated that, in 2050, there will be increased population ofabout10 billion. So, compulsory, there should be increase in food production of about 70–100% (FAOSTAT, 2016). But, there are so many demerits to overcome crop development; they are change in climatic condition, lack of large lands, both biotic and abiotic stresses, low agricultural facilities etc.

Some modern developmental technologies will contribute to a great extent of crop improvement. Genetic engineering techniques with mutagenic properties possessing physical, chemical and biological factors helps in studying the particular genes and identification of molecular mechanisms in improving the crops. (Ma et al., 2016). Mostly, the conventional breeding is most widely used in crop improvement. But, this approach is labor intensive and also ensures many long years to progress from the starting stages of screening the phenotypes and genotypes to the first crosses and particularly into commercial varieties.There is mainly two techniques applicable for the improvement of crops - selection and breeding.

The selection technique will make use of genetic variation inherent in plants. In earlier times, the farmers select the plants with potential traits, with largest fruit to harvest. The selection of plants and seeds will be applicable for establishing the next year's crop. The natural selection, enhance the survival of species. By selecting the suitable and choicest plants, the farmers influence for cross-pollination. Through selection and isolation, the gene pool was modified for each and every crop.

In breeding technique, the farmers will select two plants and further crossed them, in order to produce offspring with desired traits of both parents. The early plant breeders do not have idea on genetic transmission of traits and unable to predict about the particular cross. But, the valuable traits arise must be maintained in the specified population.



ECONOMIC IMPORTANCE AND SILKWORM BIOLOGY

INTRODUCTION

Sericulture is the cultivation of silk through rearing of silkworm. It is an agro based industry which involves the raising of food plants for silkworm, rearing of silkworm for production of cocoons, reeling and spinning of cocoon for production of yarn etc. for value added benefits such as processing and weaving. Sericulture also comprises the practical aspects such as increasing productivity of land as well as labour, stabilization of cocoon production, improvement of silk yarn, fabric and generating profitable income for rural poor, SC, ST and OBC people. Silk is an animal protein fibre secreted (produced) by the silkworm larva for spinning of the cocoon. The cocoon provides a protective shell (shelter) for the soft and delicate caterpillar to pass the pupal stage inside it and metamorphose into an imago (moth). Silk yarn is obtained from the silk cocoons.

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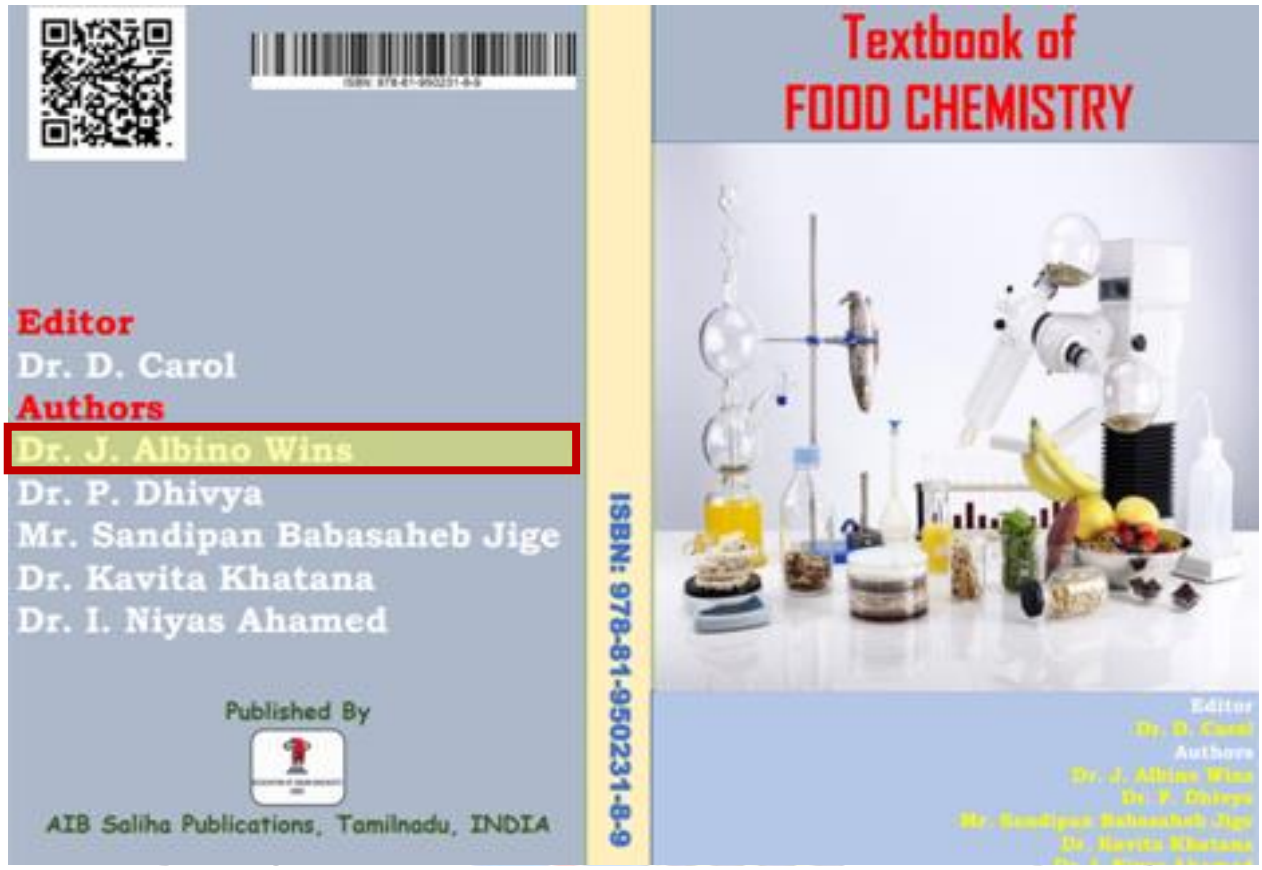
STRUCTURE AND CLASSIFICATION OF VIRUS

Viruses are non-cellular, microscopic infectious agents that can only replicate inside a host cell. From a biological perspective, viruses cannot be classified either a living organism or non-living. This is due to the fact that they possess certain defining characteristic features of living organisms and non-living entities. A virus cannot replicate itself outside the host cell. This is because viruses lack the required cellular machinery. Therefore, it enters and attaches itself to a specific host cell, injects its genetic material, reproduces by using the host genetic material and finally the host cell splits open, releasing the new viruses. Viruses can also be crystallized, which no other living organisms can do. It is these factors that lead to viruses being classified in the grey area – between the living and non-living.

STRUCTURE OF VIRUS

Size:

Viruses are much smaller than bacteria. The extracellular infectious virus particle is called the



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Cereal definition:

A cereal is any grass cultivated (grown) for the edible components of its grain (botanically, a type of fruit called a caryopsis), composed of the endosperm, germ, and bran. The term may also refer to the resulting grain itself (specifically "cereal grain"). Cereal grain crops are grown in greater quantities and provide more food energy worldwide than any other type of crop and are therefore staple crops. Edible grains from other plant families, such as buckwheat, quinoa and chia, are referred to as pseudocereals.

In their natural, unprocessed, *whole grain* form, cereals are a rich source of vitamins, minerals, carbohydrates, fats, oils, and protein. When processed by the removal of the bran, and germ, the remaining endosperm is mostly carbohydrate. In some developing countries, grain in the form of rice, wheat, millet, or maize constitutes a majority of daily

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ECOSYSTEM

The ecosystem is an ecological study of the interaction between living things and non-living things in an environment. The main component of ecology is biotic factors and abiotic factors. You should note that the ecosystem does not change but can be transformed into another ecosystem.

COMMUNITY

Community is an ecological study that deals with the study of the population of different species living together and interacting in the same region. The community tends to comprise biotic factors only and it is highly susceptible to changes due to environmental changes.

DIFFERENCE BETWEEN ECOSYSTEM AND COMMUNITY

Ecosystem and community are essential entities in ecology. These two entities play a significant role in maintaining the composure of the environment. A

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PROCEEDINGS OF VIRTUAL INTERNATIONAL CONFERENCE ON ADVANCEMENTS IN ARTS, SCIENCE AND HUMANITIES [VICAASH-2021]

BACTERIOLOGICAL CONTAMINATION OF GROUNDWATER IN RELATION TO SEPTIC TANKS OF KANYAKUMARI DISTRICT, SOUTH INDIA

J. Albino Wins and M.Murugan*

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[Affiliated to ManonmaniamSundaranar University, Abishekapatti, Tirunelveli District]

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Abstract

Water is an indispensable source for the survival of human life. Almost 80% of our earth's surface is covered by water. With increasing industrialization and urbanization, the scarcity and quality of water supply is increasing tremendously everyday. Apart from this, water is contaminated heavily by many industrial wastes. Hence, the quantity and quality of potable water is affected profoundly without its suitability for drinking as well as domestic purposes. To know about the present condition, investigation was carried out to enumerate the microbial population present in boreholes, with effect to septic tanks.

Keywords: Ground water, Boreholes, Water-borne diseases, Septic tank.

1. Introduction

The developing world depends upon ground water for their daily utilities.Increasing population and industrial developmentsresults withhigh water pollution, which indirectlyleads to environmental pollution. Water is considered as an indispensable source to the human life. Water scarcity is an important criteria concerned with population growth, industrialization and even urbanization. Groundwater has a great potency of satisfying human life throughout the world. But the activities of human beings leads to the deterioration of surface water.

According to the World Health Organization (WHO), pathogenic microorganisms should not be found in drinking water sources (Gorchev&Ozolins, 2011). Water contamination will leads to many water-borne diseases like cholera, dysentery, diarrhoea, typhoid fever etc . Most of the contamination arise from the faecesof warm-blooded animals and human beings.

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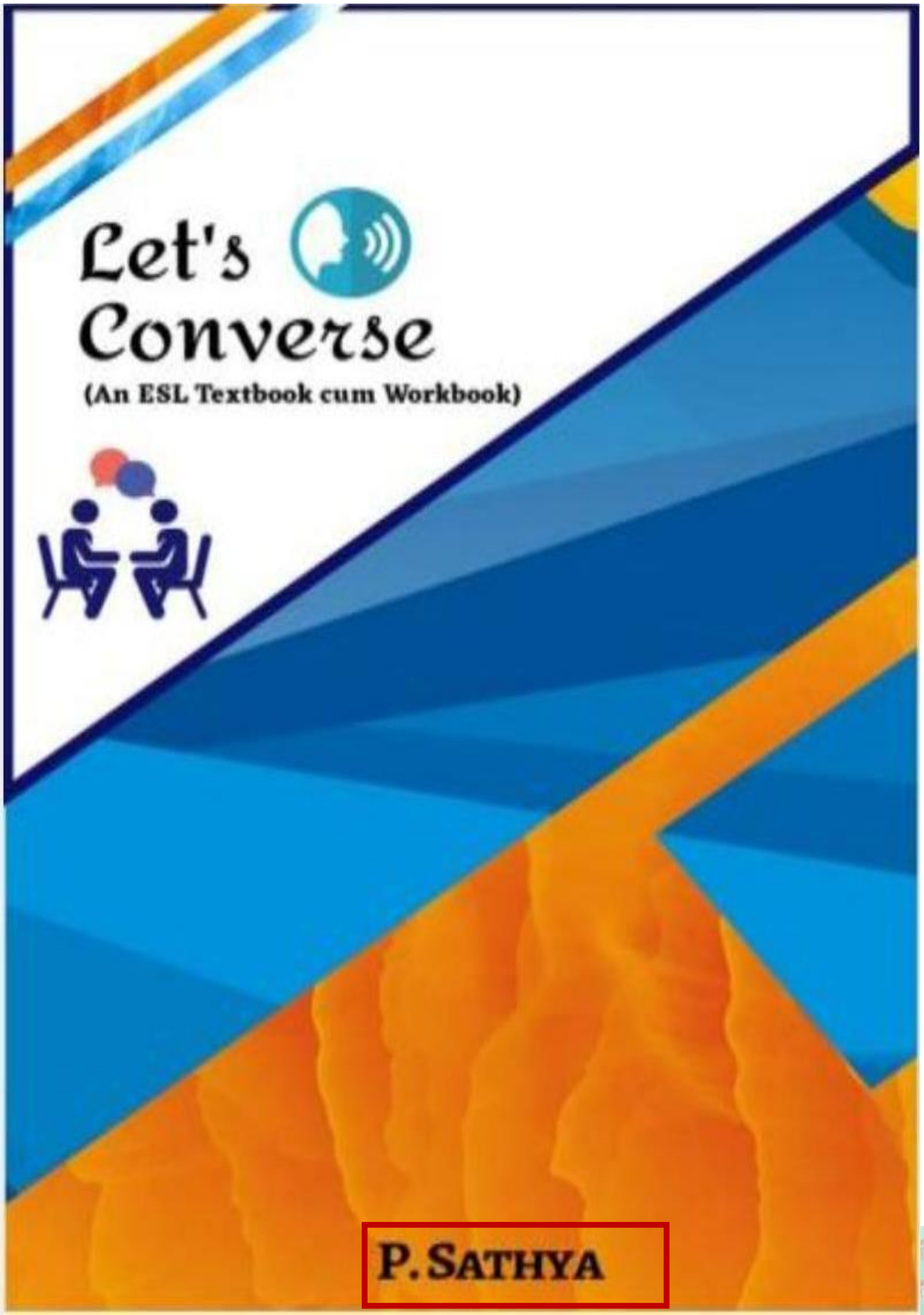
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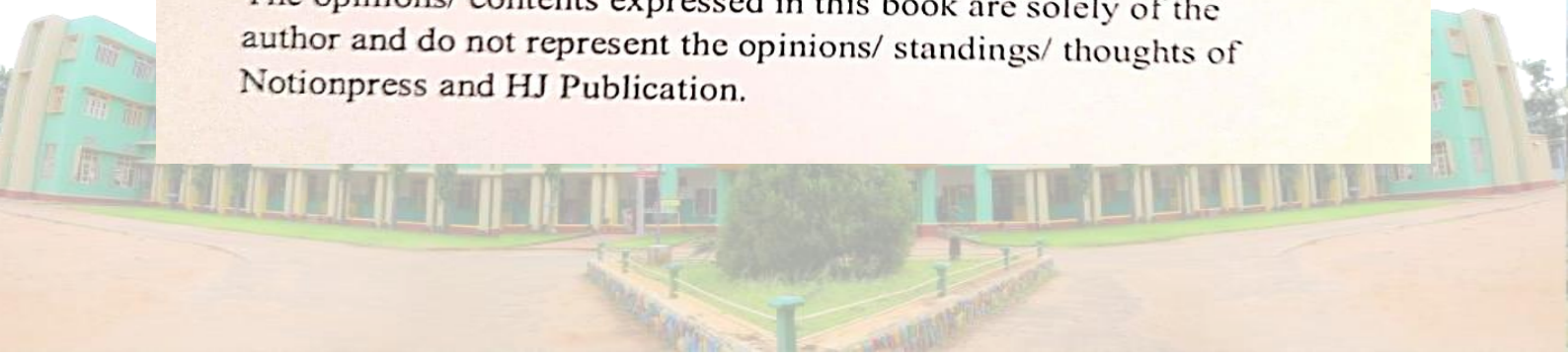

1 Hello!

Key words and phrases	
Good morning/afternoon	Pleased to meet you
Good evening (after 5.00 p.m.)	I am so pleased to meet you finally
Good night (when going to bed)	It's so nice to meet you in person
Good bye	Thanks/ thank you/ thank you very much
Goodbye ladies and gentlemen (formal context)	It's so kind/nice of you
How do you do?	I am extremely sorry
I am good/fine	I am really sorry
I have heard a lot about you	I take leave
Great to meet you at last	Meet you later
	Pardon me

Dialogue 1

John	Good morning, Sam
Sam	Good morning, John
John	How are you?
Sam	I am doing well. How about you?
John	I am good. Thank you.
Sam	Glad to meet you.
John	Glad to meet you too. Goodbye.

Dialogue 2

Paul	Good evening, Raj.
Raj	Good evening, Paul.
Paul	How was the day today?
Raj	It was good. What about you?
Paul	It was not bad. I am too tired.
Raj	Take some rest. We will meet tomorrow.
Paul	Sure. I take leave now.
Raj	Goodbye.

Explanations


அவளுடன் என் பயணம்...
ம. மரிய ஹெலன் ஜெனோபா
(கார்க்குழலி)
அறிமுகமே இல்லாத
முதல் சந்திப்பு நட்பு
அறியாதோரும்
பொறாமை கொள்ள தூண்டும்
இப்புத்தகம் மேலான
நட்பு மலையில் சிக்கல் கூடும்!
"கருவாச்சியின் காதல் ஓவியமாய்" என்னும் புத்தகமாய்
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அப்பா, மகளின் முதல் கதாநாயகன். அப்பா இல்லாதவனுக்கும், அப்பா இருந்தும் இல்லாமல் ஏங்கும் மனம் அறியும் அவரின் அருமை. எனக்காய், என் சிரிப்பிற்காய் ஒவ்வொரு நாளும் காத்துக்கிடக்கும் என் தந்தைக்காய் என் இரண்டாம் முத்தம் சமர்ப்பணம். என் தனித்துவமான கவிகளால் உங்கள் மனதில் பாதம் பதிப்பேன்.

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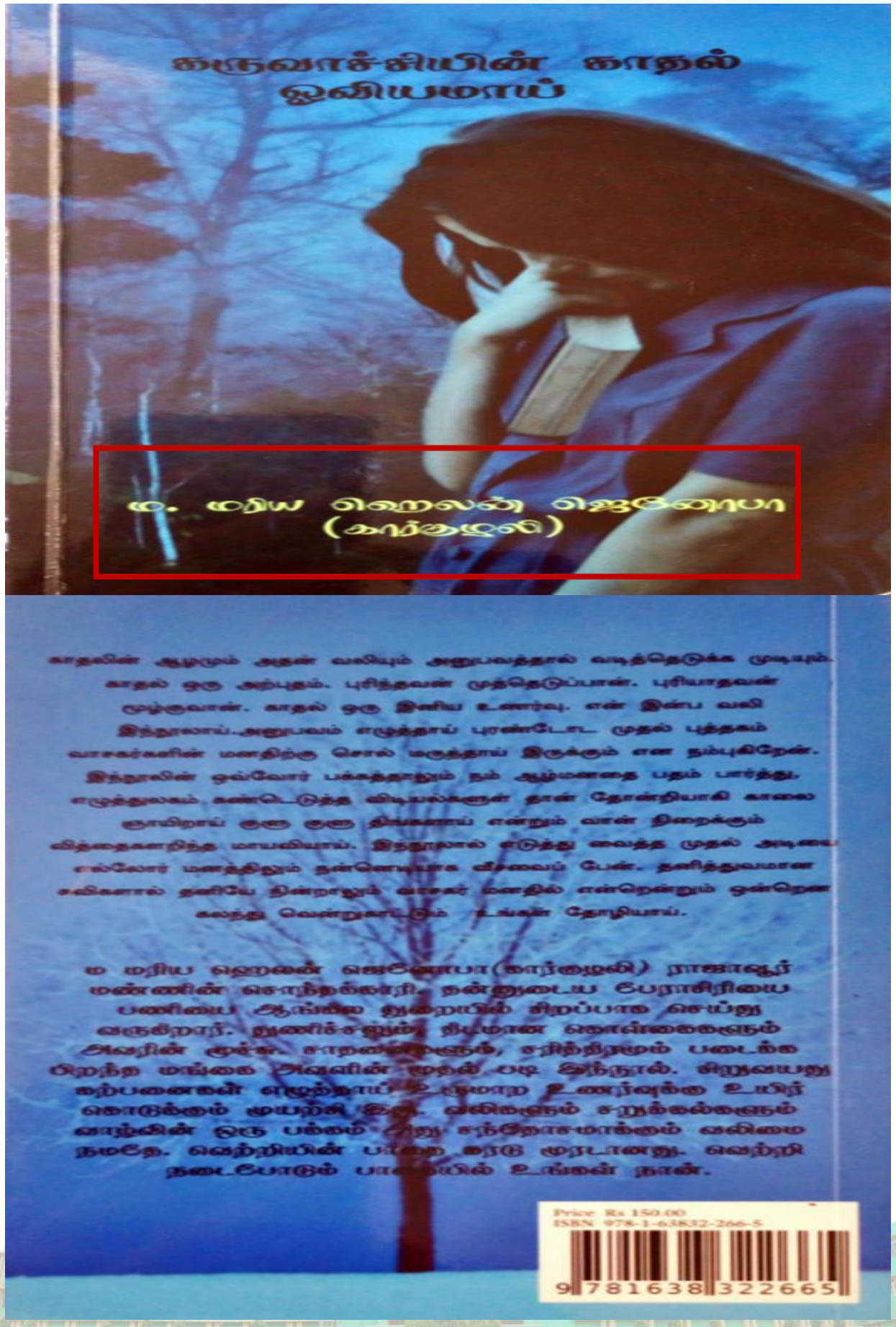
கருவாச்சியின் காதல்
ஓவியமாய்
ம. மரிய ஹெலன் ஜெசிந்தா
(கார்குழலி)
காதலின் ஆழமும் அதன் வலியும் அனுபவத்தால் வடித்தெடுக்க முடியும். காதல் ஒரு அற்புதம். புரிந்தவன் முத்தெடுப்பான். புரியாதவன் முழ்குவான். காதல் ஒரு இனிய உணர்வு. என் இன்ப வலி இந்நூலாய்.அனுபவம் எழுத்தாய் புரண்டோட முதல் புத்தகம் வாசகர்களின் மனதிற்கு சொல் மருந்தாய் இருக்கும் என நம்புகிறேன். இந்நூலின் ஒவ்வோர் பக்கத்திலும் நம் ஆழ்மனதை பதம் பார்த்து, எழுத்துலகம் கண்டெடுத்த விடியல்களுள் தான் தோன்றியாகி காலை சூரியனாய் குரு குரு திங்களாய் என்றும் வான் நிறைக்கும் வித்தகனாகிய மாயவியாய். இந்நூலால் எடுத்து வைத்த முதல் அடியை எல்லோர் மனத்திலும் நன்னெறியாக வீசவைப் பேன். தனித்துவமான எனிகளால் தனியே நின்றாலும் வாசகர் மனதில் என்றென்றும் ஒன்றென கலந்து வென்றாடும் உங்கள் தோழியாய்.
ம மரிய ஹெலன் ஜெசிந்தா(கார்குழலி) ராஜாவூர் மண்ணின் சொந்தக்காரி. தன்னுடைய பேராசிரியை பணியை ஆங்கில துறையில் சிறப்பாக செய்து வருகிறார். துணிச்சலும் நிதானமான தொலைநோக்கும் அவரின் மூச்சு. சாதனையாளரும், சரித்திரமும் படைக்க பிறந்த மங்கை அவளின் முதல் படி இந்நூல். சிறுவயது கற்பனைகளை எழுத்தாய் உருமாற உணர்வுக்கு உயிர் கொடுக்கும் முயற்சி இது. எனினும் சாதிக்கவேண்டும் வாழ்வின் ஒரு பக்கம் அது. சந்தோசமாக்கும் வலிமை நமதே. வெற்றியின் பாதை கரடு முரடானது. வெற்றி நடைபோடும் பாதையில் உங்கள் நான்.
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முனைவர் பா.மலர்
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சிலம்பில் உலகப் பொதுமறை கருத்தியல்கள்

முனைவர் செ.சுனிதா,
உதவிப் பேராசிரியர்,
தமிழ்த்துறை, திருச்சிலுவைக் கல்லூரி,
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முன்னுரை

தமிழிலுள்ள ஐம்பெருங்காப்பியங்களுள் முதன்மை காப்பியமாக விளங்குவது சிலப்பதிகாரம் எனலாம். எனவே தான் பாரதியார் 'நெஞ்சை அள்ளும் சிலப்பதிகாரம்' என்று சிறப்பித்துக் கூறியுள்ளார். சமயத்தாலும், கருத்தாலும் என்றும் நிலைபெற்று வரும் உலகப் பொதுமறை போல் மூவேந்தரையும், முத்தமிழையும், முக்காலத்தையும் விளக்கும் இக்காப்பியம் ஒருமைப்பாட்டுக் காப்பியம் என்னும் சிறப்பை பெற்றுள்ளது. திருக்குறளின் அறத்தைப் பின்பற்றி எழுதப்படும் நூலுக்கு தான் அக்காலத்தில் அதிக மதிப்பு இருந்தது. இந்த உண்மையை சிலப்பதிகாரம் நமக்கு எடுத்துரைக்கிறது. சிலப்பதிகாரத்தில் இடம்பெற்றுள்ள திருக்குறளின் கருத்துகளை ஆய்வதே இக்கட்டுரையின் நோக்கமாகும்.

செங்கோன்மை

செங்கோன்மை என்பது ஒரு அரசன் சிறந்த முறையில் ஆட்சி செய்வதை குறிப்பதாகும். ஒரு வழக்கை நன்கு ஆராய்ந்து, ஒருபக்கம் சார்ந்து விடாமல் நடுநிலைமையுடன் இருந்து சாட்சிகளை தீர விசாரித்து பின் தீர்ப்பு வழங்குவது செங்கோன்மை ஆகும். இதனை திருவள்ளுவர்

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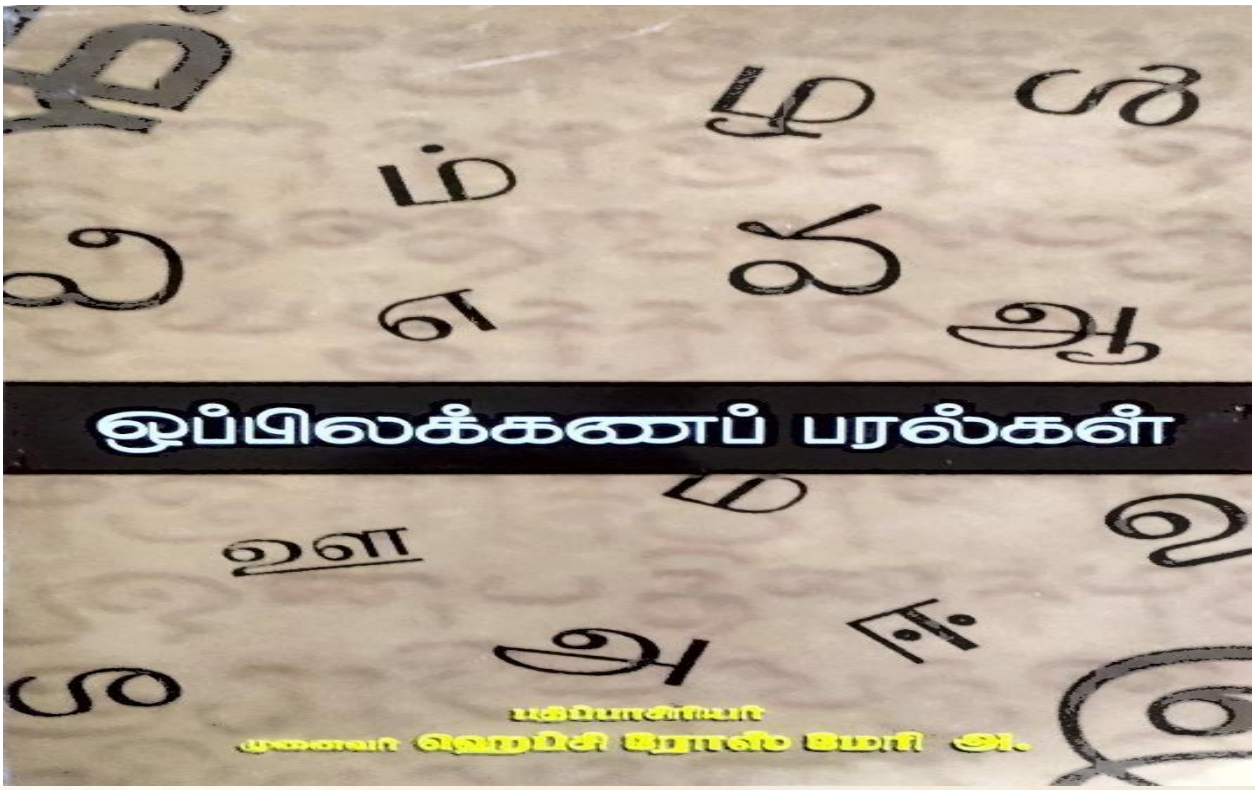

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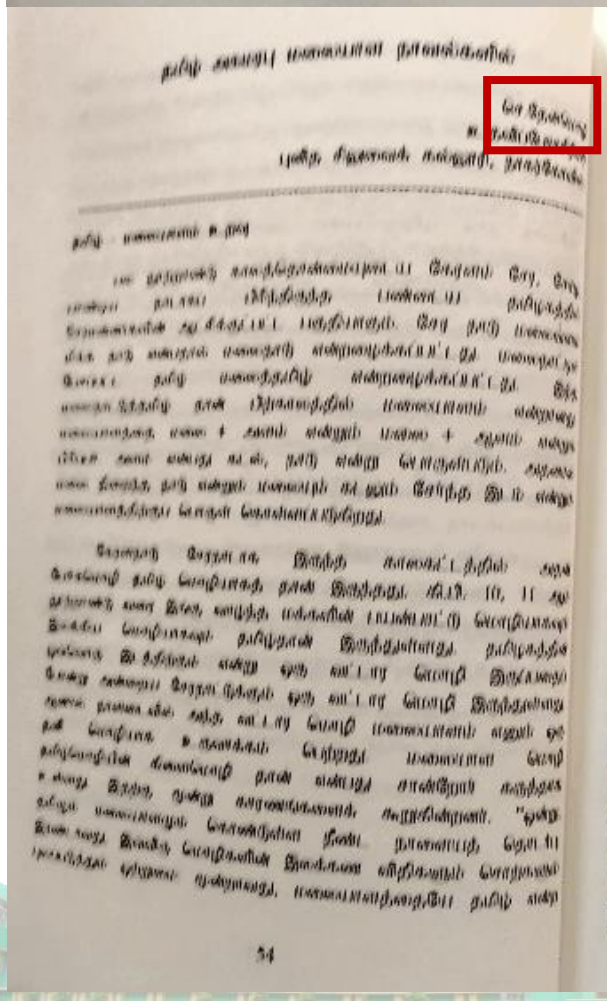

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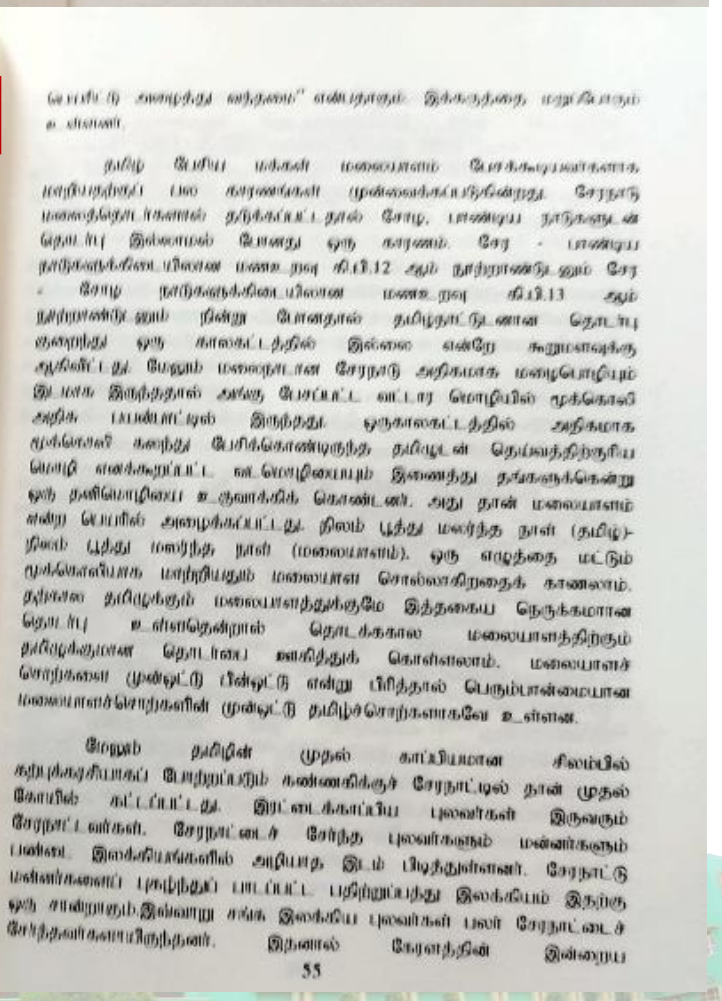


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திருச்சிலுவை கல்லூரி, நாகர்கோவில்

ஆளுமை என்பது ஒருவருடைய ஆளுந்திறனை குறிப்பதாகும். சிலர் புறத்தோற்றத்தை வைத்து இது தான் ஆளுமை எனக் கருதுவர். புறத்தோற்றம் மட்டுமே ஆளுமை என்பதன்று. அகஆளுமை, புற ஆளுமை என ஆளுமையை வகைப்படுத்தலாம். ஒருவருடைய செயல்பாடுகள் , பழக்கவழக்கங்கள், நற்பண்புகளைப் பொறுத்தும் ஆளுமை மதிப்பிடப்படுகிறது. சமுதாயத்திற்குப் பயனுள்ள வகையில் வாழும் ஒருவரைத் தலைவராகவும், வழிகாட்டியாகவும் சமூகம் மதிக்கிறது. "தனிமனிதனுடைய எண்ணங்கள், செயற்படும் முறை, நடத்தைகள், அவன் பிறருடன் பழகும் முறை, மனப்பான்மைகள் அவனுடைய வாழ்க்கைத் தத்துவம், அறிவாற்றல், உணர்ச்சிகள் ஆகிய யாவும் சேர்ந்த தொகுப்பிலிருந்து அவனுக்கு ஏற்படும் ஒரு தனித்தன்மை ஆளுமை எனப்படும்" என்று வாழ்வியல் களஞ்சியம் தொகுதி 2 குறிப்பிடுகிறது. அண்ணா அவர்கள் பன்மொழி திறமையும், பல் இலக்கிய பயிற்சியும் பெற்றவர். அவர் இலக்கியங்களிலிருந்து பெற்ற அறிவின் வெளிப்பாடாக அமைந்த பன்முக ஆளுமையினை இக்கட்டுரையில் ஆய்வு செய்யப்பட்டுள்ளது.

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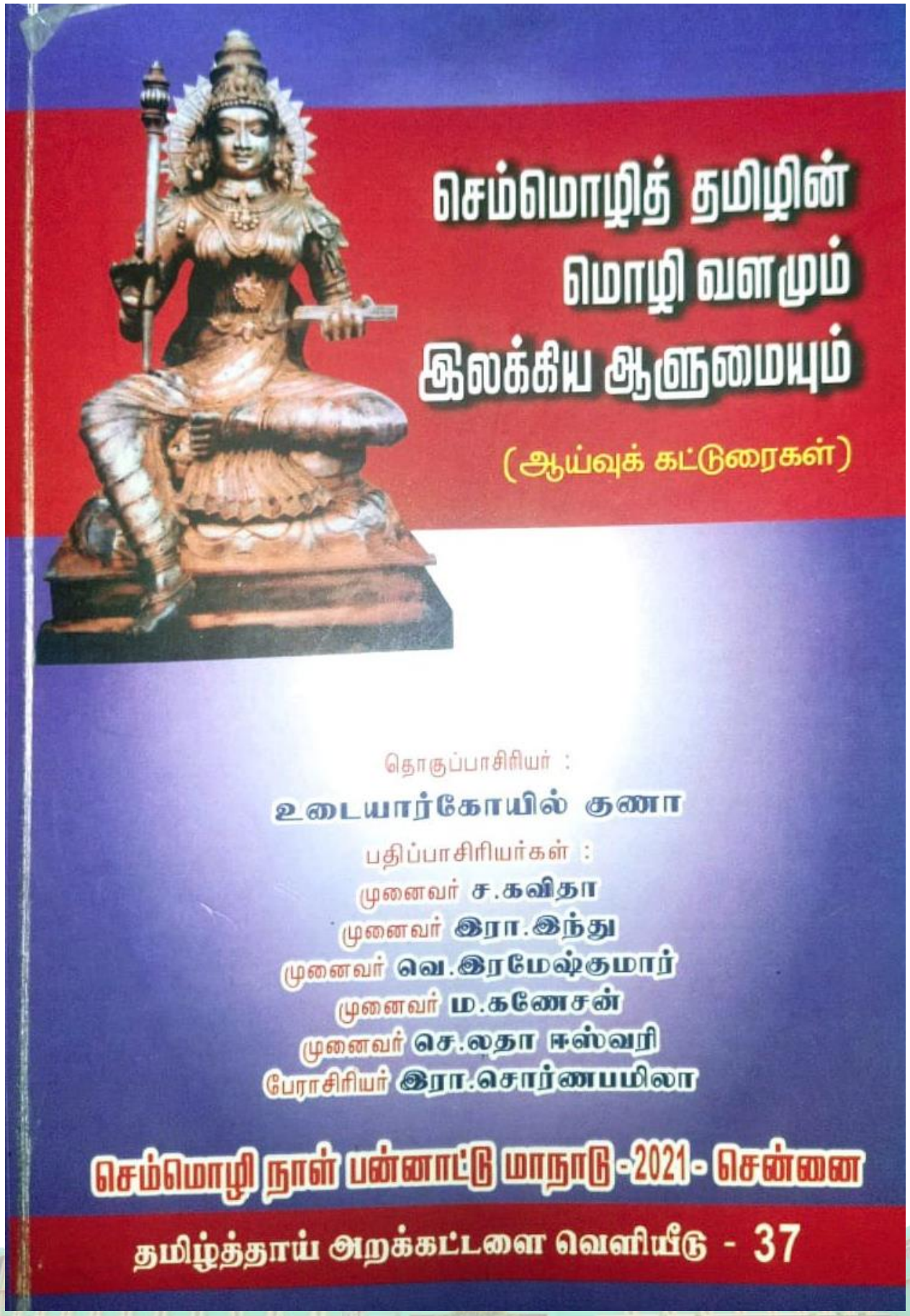
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அச்சாக்கம்	:	மாணவர் நகலகம், சென்னை-01

கரிசல் இலக்கியங்களில் வெளிப்படும் செவ்வியல் பண்புகள்

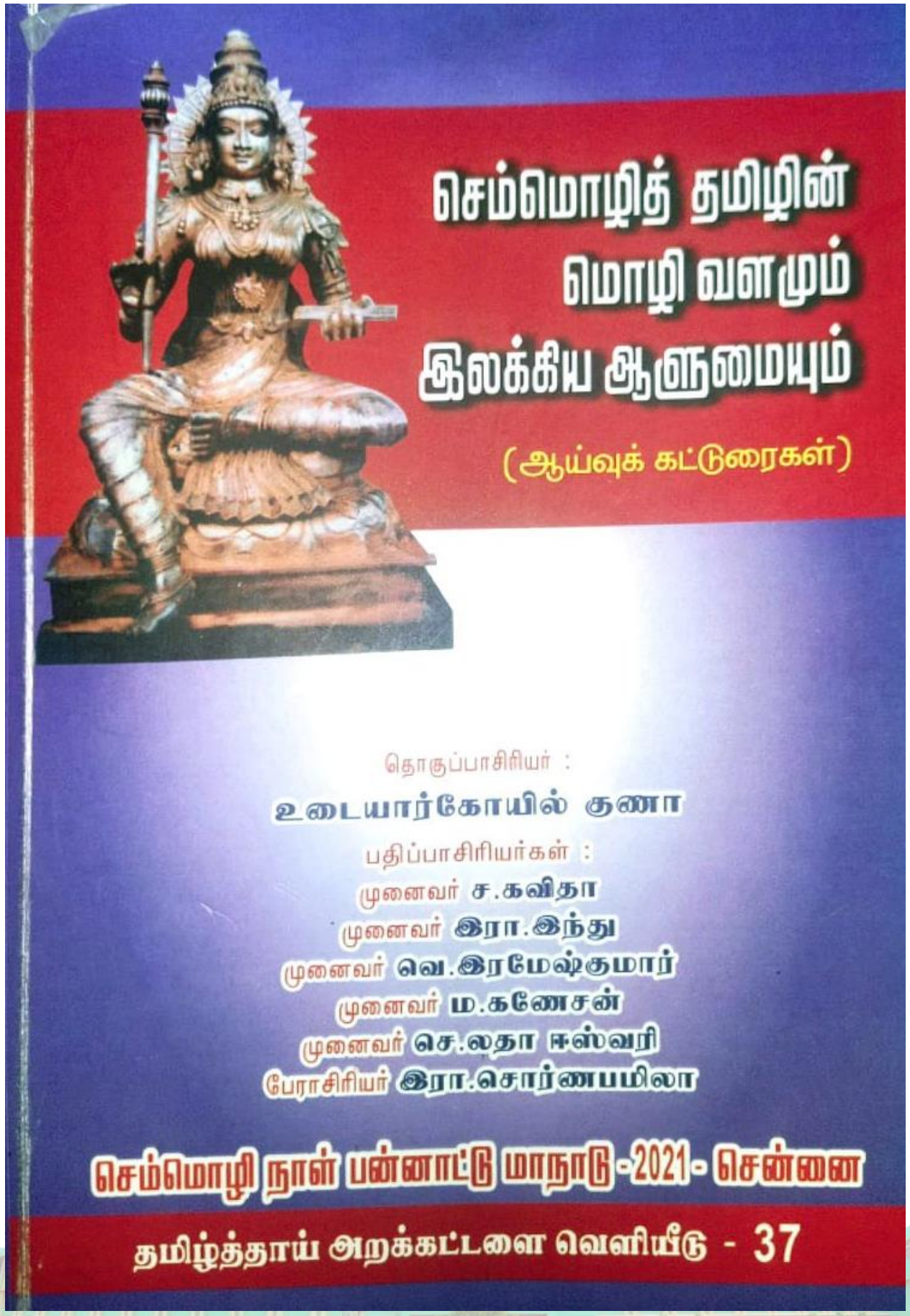
முனைவர் அ.டெல்பின்
உதவிப் பேராசிரியர்,
திருச்சிலுவை கல்லூரி,
நாகர்கோவில்.

ஆய்வுச்சுருக்கம்

"கரிசல் இலக்கியங்களில் வெளிப்படும் செவ்வியல் பண்புகள்" என்னும் கட்டுரையில் வீணையின் மெல்லிய நரம்புக் கம்பியின் அதிர்வு போன்று எழுதப்பட்டிருக்கும் பா.செயப்பிரகாசம் சிறுகதைகளில் உலாவரும் கரிசல் கதைமாந்தர்களின் வழியாக கரிசல் வட்டார மக்களின் வாழ்க்கைச் சூழலில் வெளிப்படும் மனித மாண்புகள் மற்றும் வாழிடப் பின்னணிகள் ஆகியன இவ்வாய்வுக் கட்டுரையில் உட்படுத்தப்பட்டுள்ளது.

முன்னுரை

நாடோடிகளாக அலைந்து திரிந்து கொண்டிருந்த மனித ஒரே இடத்தில் நிலையாக வாழும் நிலை ஏற்பட்டபின் அவனுடைய சந்ததிகளின் பெருக்கத்தினால் சூழ் அமைப்பானது சமூகமாக உருவெடுத்தது. இதன் காரணமாக வாழ்க்கையை மனிதன் விரிவுப்படுத்திக் கொண்டான் வெவ்வேறு [illegible] அவ்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அச்சாக்கம்	:	மாணவர் நகலகம், சென்னை-01

பார்போற்றும் வள்ளுவமும் செவ்வியல் பண்புகளும்

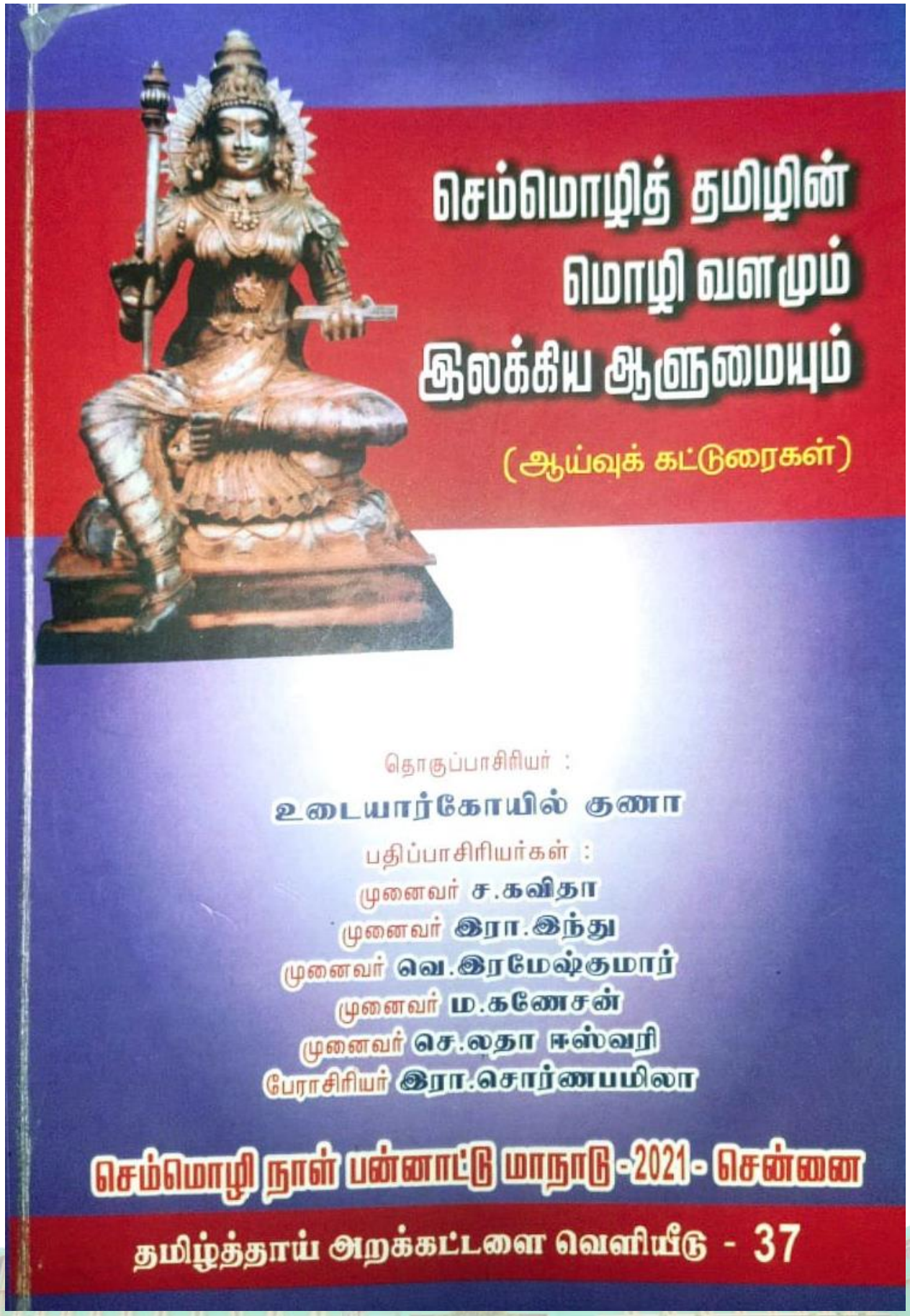
முனைவர் சா.டெய்சி பாய்
உதவிப் பேராசிரியர்,
தமிழ்த்துறை(சுயநிதி),
ஹோலிகிராஸ் கல்லூரி, (தன்னாட்சி)
நாகர்கோவில்-4.

முன்னுரை

தமிழ் இலக்கிய வரலாற்றில் பெரும்பான்மையான இடத்தைப் பிடித்த இலக்கியங்களுள் அறஇலக்கியங்களும் ஒன்று.உலகப் பொதுமையான வாழ்வியல் கூறுகளை எடுத்துரைப்பதில் செவ்வியல் இலக்கியங்கள்முன்னோடியாகத் திகழ்கின்றன. செவ்விலக்கியங்கள் எல்லா நாட்டினருக்கும், சமூகத்தார்க்கும் பொதுவான வாழ்வியல் தத்துவங்களையும், சிந்தனைகளையும் உரைக்கும் பொக்கிசமாகத் திகழ்கின்றன. இன்றும் திருக்குறள் கருத்துக்கள் நடைமுறை வாழ்க்கைக்கு உதாரணமாகத் திகழ்கின்றன தமிழ் இலக்கிய வரலாற்றில் அறநெறி இலக்கியங்கள் சமுக விழுமியங்களை உருவாக்குவதில் பெரும் பங்காற்றியுள்ளன.

பார் போற்றும் குறள்

இவ்வுலகிற்கு தமிழன் ஈந்த தலைசிறந்த கொடை நம் திருக்குறள் என்றால் அது மிகையாகாது. இவ்வுலக மானிடருக்குத் தேவையான விழுமியங்களையும் நெறிமுறைகளையும் வகுத்த 'மாமறை' என்றும் திருக்குறளைப் போற்றலாம்.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ஹோலி கிராஸ் கல்லூரி, (தன்னாட்சி)
நாகர்கோவில்,
கன்னியாகுமரி மாவட்டம்.

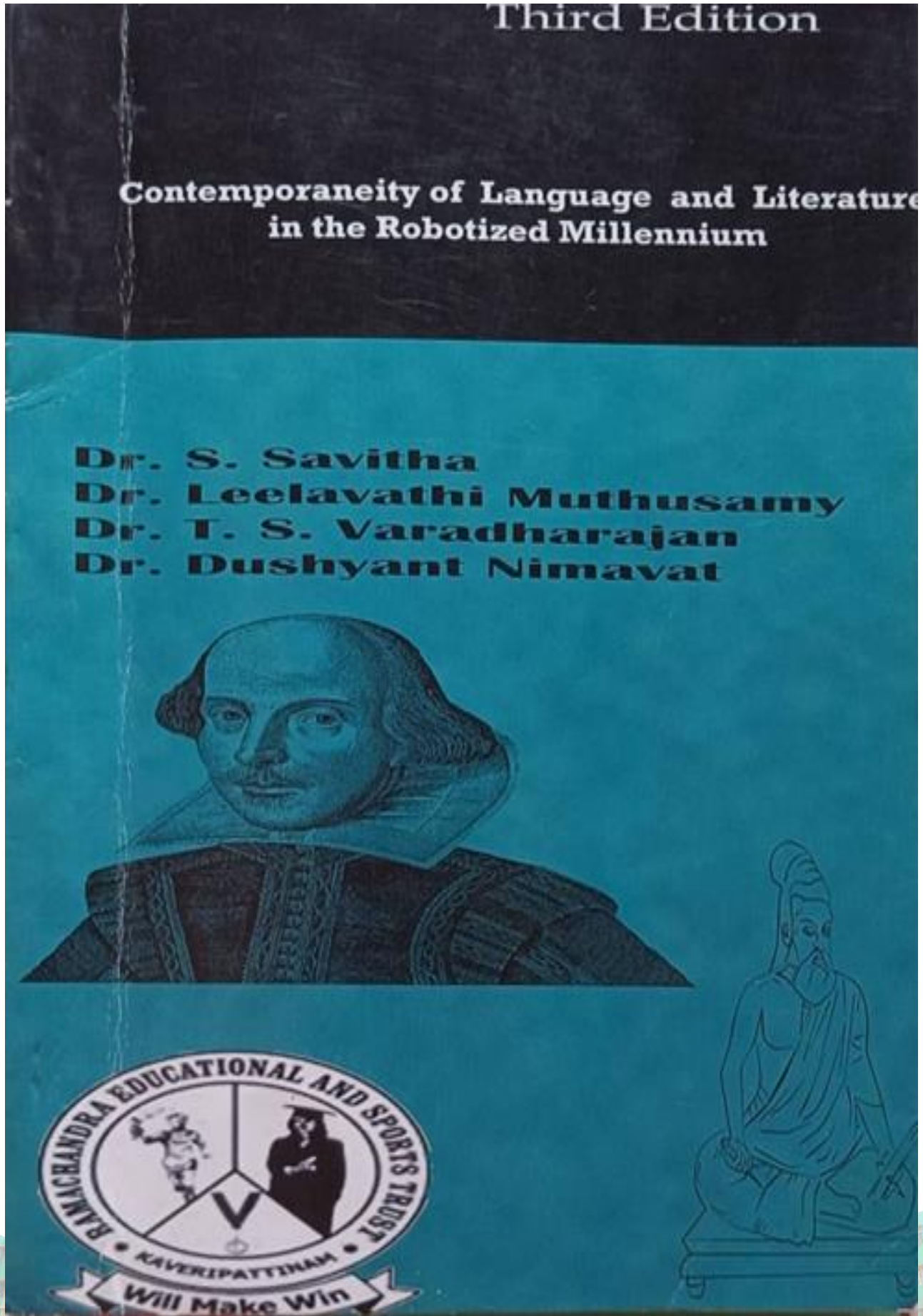
முன்னுரை

தமிழ் பழமையும் பல்வேறு பெருமைகளையும் ஒருங்கே கொண்ட இனிய மொழி.

கல்தோன்றி மண்தோன்றி காலத்தே வாளொடு
முன்தோன்றி மூத்தகுடி"

என்னும் பெருமைமிகு மக்களின் தாய்மொழி தமிழாகும்.

சங்க இலக்கியங்கள், தொன்மை, தொடர்ச்சி, செழுமைவளம் என்னும் மூன்று முக்கிய பண்புகளுடன், பிறமொழி தாக்கமில்லாத தனித்தன்மை, தாய்த்தன்மை, இலக்கிய வளம், இலக்கண சிறப்பு, மொழிக்கோட்பாடு ஆகிய பிற பண்புகளையும் செம்மொழி பண்புகளாக கொண்டு திகழும் மொழி தமிழ்மொழி. சங்க இலக்கியங்கள் எவ்வித மதச்சார்பும் இல்லாமல் சமுதாய நோக்குடைய இலக்கிய படைப்பாக திகழ்வது தமிழ்மொழி. தமிழின் தனித்தன்மையை உலகிற்கு எடுத்துரைப்பதற்கு சங்க இலக்கிய நூல்கள் உறுதுணையாக அமைகிறது.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L'enseignement de la langue français a traves la traduction d'un conte de la bande dessinee

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Abstract

'ai choisi le thème de la bande dessinée parce que c'est un bon moyen d'intéresser les élèves à la littérature et aussi l'apprendre les langues étrangères. On a plusieurs possibilités pour travailler avec la BD dans la classe. Nous avons exposé à lusieurs méthodologies de l'enseignement de français langue étrangère. Chacune de ces méthodes a ses grandeurs et ses nisères et J'ai pensé à proposer une nouvelle approche en classe de langue en utilisant la Bande Dessinée. Les gens sont ascinés par la BD. Pour rendre la classe de langue plus intéressante et pour motiver l'apprenant nous avons proposé une pproché d'enseignement à travers la Bande dessinée.
Mots-clés: Bande dessinée, la langue étrangère, méthodologie, l'enseignement.

L'introduction

Il y a plusieurs méthodologies de l'enseignement de français langue étrangère. Ce sont la méthode traditionnelle, la méthode directe, la méthode audio-orale et la méthode audio visuelle. L'utilisation la B.D en classe de langue française est une nouvelle approche. Aujourd'hui beaucoup de gens aiment lire la bande dessinée, surtout les jeunes gens sont fascinés par la bande dessinée. Ainsi, avons-nous donné comment les enseignants peuvent utiliser la bande dessinée dans leurs cours et les moyens pour l'utilisation de la bande dessinée dans l'éducation de la langue française.

La choix de la Bande dessinée

Bien qu'il existe des Bandes dessinée en français nous avons constaté que la Bande dessinée française sera difficile à comprendre pour les jeunes débutants indiens (au niveau XI ou le cours certificat).
Ainsi, avons-nous choisi ceux d'Amar Chitra Katha pour notre travail parce qu'Amar Chitra katha est plus simple et plus connu parmi nos étudiants. Cette Bande dessinée indienne sera facile à comprendre pour les jeunes indiens.
A travers Amar chitra katha On peut faire connaissance avec des épopées indiennes, des contes folkloriques, la mythologie et la vie de grandes personnalités. Nous avons choisi un conte d'Amar chitra katha comme corpus de notre travail.
Le conte "l'âne du blanchisseur" est pris de Panchatantra. Le trait unique du Panchatantra est que les pluparts des personnages sont des animaux comme les fables de la Fontaine et ce conte nous donne une morale. Par exemple, la morale de ce conte est "Le silence est d'or" qui est une leçon très importante dans la vie quotidienne.

L'objectif de notre travail a été le suivant

1. Présenter la B.D en général.
2. Traduire le conte.
3. Exploiter ce conte pour l'enseignement de la grammaire et du vocabulaire.

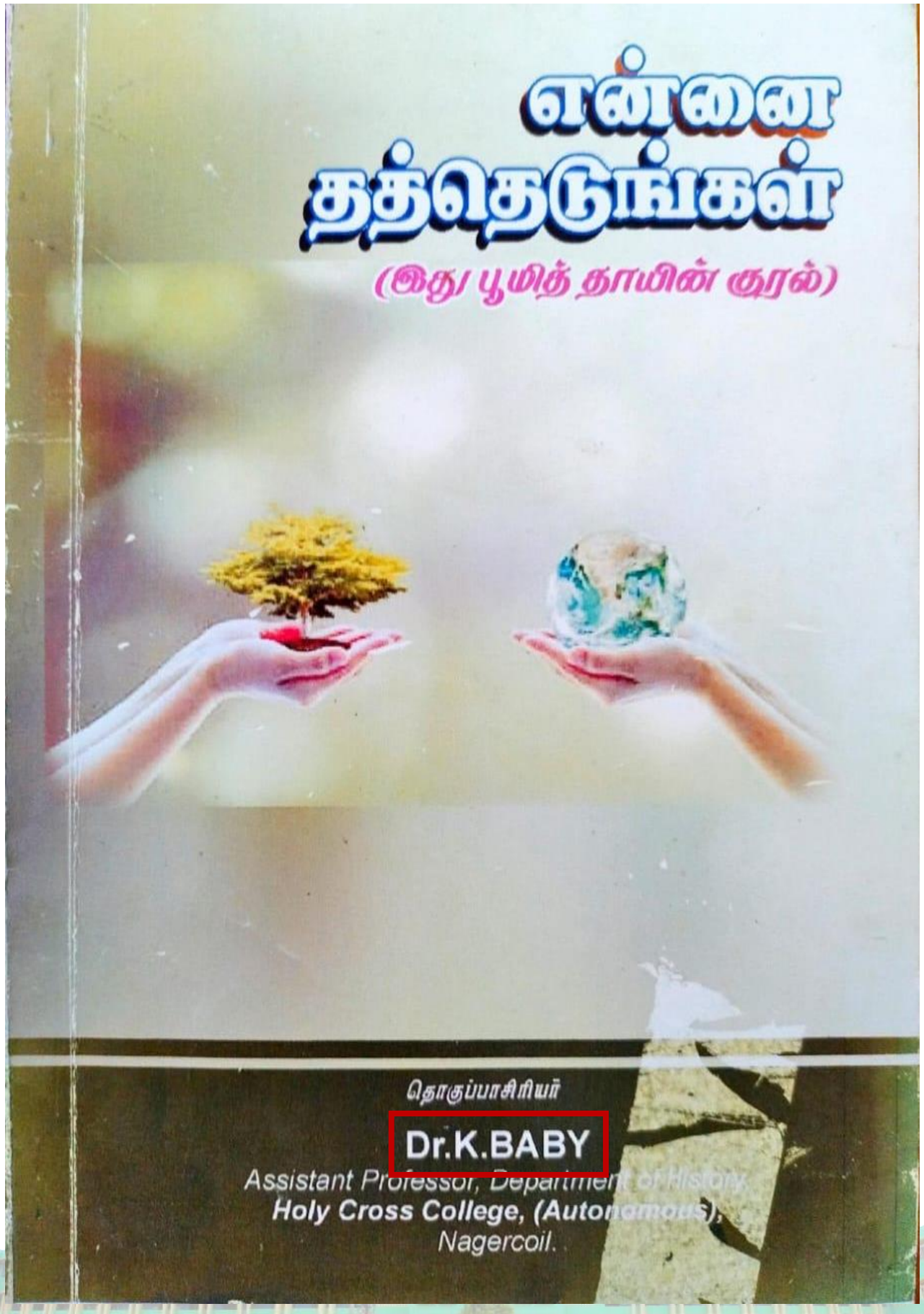
Avec cet objectif en vue, nous avons été obligés d'organiser le plan de notre travail. Avant de faire la traduction, nous avons donné une présentation qui est indispensable pour mieux comprendre l'oeuvre.
La traduction permettra aux lecteurs de connaître l'histoire de ce conte. Tout en restent fidèle au contenu socioculturel nous avons donné l'importance au sens; comme la plupart des gens connaissent bien le texte indien. Il sera facile d'expliquer la grammaire et le vocabulaire.

La Présentation de la Bande dessinée

La Bande Dessinée se présente comme un récit constitué d'images accompagnées d'un texte. B.D est un moyen de partager la culture et l'histoire d'un pays. Particulièrement en Inde la Bande dessinée diffuse des épopées indiennes, des contes folkloriques, la vie de grandes personnalités et la mythologie indienne. Elle aide les enfants et les adultes à accéder et à comprendre de grandes épopées qui sont les pillers de notre civilisation ancienne.

Les techniques de la Bande dessinée

On peut voir que le Bande Dessinée se sert de nombreuses de techniques. Chaque dialogue est présenté dans un Ballon, une Bulle, un cartouche etc. Ainsi, faut-il définir les termes qui sont utilisés.
Dans la B.D, il y a plusieurs vignettes (affiche qui porte un dessin) chaque vignette consiste d'un Ballon, d'une Bulle, d'un cartouche, d'ondes, d'idéogrammes, d'une bande, d'onomatopées et de planche.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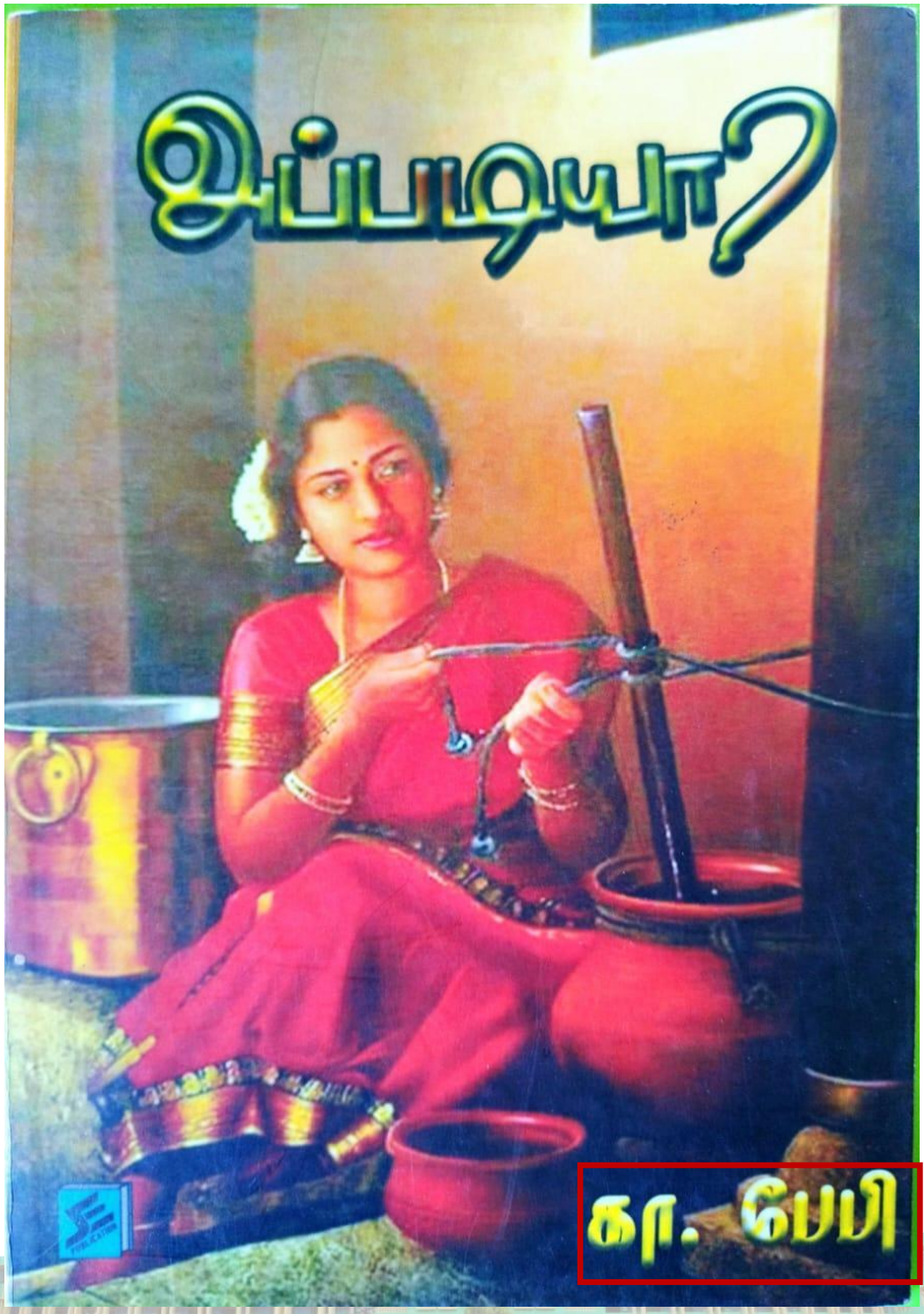
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மூழ்கிய கண்டத்தின் வெளிப்பாடுகள்

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HISTORICAL EVOLUTION OF THE THEORY OF LEMURIA

Dr. G. Pushparaj,
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Abstract

Lemuria is a place considered to be submerged into the Indian Ocean thousands of years back. It is called as Kumarikkandam in Tamil language. As most of the scholars, researchers and geographers in Tamil Nadu and even some of the world renowned scholars accept this theory, some others are propounding a separate theory of another land known as Gondwana land. As the sources are there, though in meager, to prove the above two theories, the contradiction prevails all through the years from the 19th century. In this article, using the given opportunity, the authors share their thoughts on the historical evolution of the theory of Lemuria. It is a historical narration just to understand emergence and development of the concept of Lemuria continent.

Introduction:

As a part of knowing the origin of earth and the universe, many scholars propounded many theories and concepts. Galileo Galilei the "father of modern physics" proved the theory of Copernican heliocentrism (Earth rotating daily and revolving around the sun) the astronomical model developed by Nicolaus Copernicus in 1543. This model positioned the Sun at the center of the Universe with Earth and the other planets orbiting around it in circular paths at uniform speed. Later it was modified by epicycles. The Copernican model displaced the geocentric model that had placed Earth at the center of the Universe. With this many new theories on the origin and genesis of the earth and the life including the human beings had evolved.

Charles Lyell, Scottish geologist was largely responsible for the general acceptance of the view that all features of the Earth's surface are produced by physical, chemical, and biological processes through long periods of geological time. The concept was called uniformitarianism. Charles Lyell was probably the most famous geologist alive in the mid-nineteenth century. He had a great inspiration for famous scientists like Charles Darwin. For Lyell, continents could rise and fall, but they couldn't move. The distribution of land and sea in particular region did not endure throughout all time, but it became sea in those parts where it was land, and again it became land where it was sea. These changes were taken place according to a certain system, and within a certain period. Sunken continents and land bridges that had crumbled into the sea became the most popular solution to a riddle that scientists of all stripes were desperate to solve.

Concept of Gondwana:

Eduard Suess an Austrian geologist laied the basis for paleogeography and tectonics—i.e., the study of the architecture and evolution of the Earth's outer rocky shell. In 1857 he published a book entitled "The Origin of the Alps". In this book he argued about the concept of horizontal movements of the lithosphere, the rocky outer shell of the earth. At that time, the vertical uplift of the lithosphere was the widely accepted concept. According to the vertical uplift of the lithosphere, mountain ranges were formed by the folding and thrust faulting of the rocky outer shell of the earth. Further, Suess in his four-volume treatise on the geologic structure of the entire planet, "The Face of the Earth" discussed in detail about the tectonic plates of the earth including the Gondwanaland, a supercontinent that once consisted of South America, Africa, the Arabian Peninsula, India, Australia, and Antarctica. Thus he became the first one to propose the theory of Gondwanaland

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WOMEN IN SANGAM LITERATURE

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ABSTRACT

The purpose of the article is to tell about the women the sangam literature, espaciously their heroic beats and their poetic activities of Puranaanuru, one of the eight volumes of Sangam literature, Pattu and Thogai. The Sangam period is referred to as a golden age. The lives of women at that time were seen differently than they are today. Women were given personal freedom in choosing a husband for themselves in life. Women were respected. But there is no denying that her likes and dislikes depended on Adavan.

INTRODUCTION:

Motherhood women are the primary factors in the emergence of the world. She is the woman who revives and saves all life, the woman who lives in harmony with love, support and sharing. The wife is the root of the house. We all know that such women are still making amazing achievements in the world today. There is no doubt that women who lived in the late nineteenth century lived a life of heroism, fearlessness, selflessness, and morality as well as in the sangam age.

WOMEN IN SANGAM LITERATURE:

It can be seen from Sangam literature that ancient Tamil women were in a high position in the society. The terms used by Sanskrit poets to refer to women are astonishing. Mather, female, good, ayilai, aniyilai, mensayalar, ghost. Names such as Pedumbai, Mangai, Madanthai, Arivai, Therivai are mentioned in the literature referring to women.

THOUGHTS ABOUT THE WOMAN IN THE OCTAVE SONG:

More than half of the songs in the octave anthology are applications to a friend who smells the leader and protects her from the cruelty of love fever. On the same day of the marriage, the mother renounces her childlike nature like home and changes her personality and becomes a new woman in that on day. Thenshe sacrifice her life to cooking, hospitality and caring for her ancestors. She owes it to her son to find victory over the enemy. The leader divides her in search of material or education. He will seek them out for love, love and affection. But the leader was compelled by the community of the time to be the beacon of the land since he had carried the faction.

WOMEN'S RIGHTS:

Women who lived during the Sangam period were given the right to make love and to marry the same man. Women were also given the right to go out with their lover in an unmarried environment. In the eighth century, women considered chastity to be higher than life. No woman trapped in the bondage of being a wife even loves any other man by heart. The responsibility of running the family was given to the woman. The reason is that women spend more time at home than the leader spends with the family. As such, there is no category for women such as prostitution, police and abortion. So she was considered the mainstay of the home, the mother of the children, and the best at entertaining guests.

THE HEROISM OF THE WOMEN:

The status of the women in the sangam age is amazing. One of the Sangakkala Guardian Feminist, One day a man came to the guard's house holding a pillar of his house and asked where your son was. She showed her stomach to it and here is the cave where the tiger left. She says it is on the battlefield now. The lyrics read, "I don't know if your son is a year old, or if my son is a year old. Both of the above incidents are a great testament to the heroism of women. Women are timid.

RESPECT FOR WOMEN:

The fact that there were more than thirty feminist poets during the Sangam period shows that women were respected as much as male poets. The female poetes Avvai was respected to the extent. Avvai also has the advantage of preventing war in the context of war. Once Adiyaman and Thondaiman meet Avvai. Thondaiman who knows that war is going to take place. "Thus, in the song that begins with 'Peel-wearing, evening-pointing, eye-opening, ghee-wearing, your armor is stacked in the evening without any intimidating tone, but Adiyamans weapons attack the enemy and the tip is blunt, saying that the killer is in the furnace's field. Avvai took advantage of the situation and avoided war, from which the value of women's speech in society can be seen. Society that considered women as a gift.

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SANGAMS AND THE DEVELOPMENT OF SANGAM LITERATURES – AN INTERPRETATIONAL OUT LOOK

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ABSTRACT

Tamil Nadu has a great tradition of heritage and culture that has developed over 2,000 years and still continues to flourish. This great cultural heritage of the state of Tamil Nadu evolved through the rule of dynasties that ruled the state during various phases of history. Number of the ruling dynasties gave patronage to Art and Culture that resulted into the development and evolution of a unique Dravidian culture. The Sangam Age in Tamil country is significant and unique for its social, economic, religious and cultural life of the Tamils. There was an all-round development during this period. The Sangam literatures as well as the archaeological findings reveal these developments. In the beginning of the Sangam Age, the region was comprised of three Tamil States – the kingdoms of Pandya, Chera and Chola. However, the earliest of the Sangam literature, Tolkappiyam refers to the four divisions prevalent in the Sangam society namely, Anthanar, Arasar, Vaislyar and Vellalar. It may be said that this classification, roughly, corresponds to the Vedic Social division. Another Sangam work, Purananuru mentions the names of ancient Tamil tribes such as Thudiyan, Pannan, and Kadamban. These divisions indicate the complex social structure prevalent in the Sangam Age.

KEYWORDS: *Sangam People, Tamil sangam, Tradition of Sangam, Tamil scholars, Tamil literature, Three assemblies.*

INTRODUCTION:

South India or peninsular India lying to the south of the Tungabhadra River has been recognized as geologically older than northern India. The Tamil country to the south of the rivers Krishna and Tungabhadra and extending to the Cape Comorin formed the Tamil Country. The inhabitants spoke the Tamil language. This region was comprised of three Tamil States – the kingdoms of Pandya, Chera, and Chola. The early history of these kingdoms cannot be precisely traced. The Pandya kingdom is reputed as the most ancient of Tamil states. Its capital was at Madurai, a great seat of learning. Its important town was Korkai, a great sea-port and the cradle of the civilization of South India. The Tamil Sangams were assemblies of Tamil scholars and poets. These assemblies were originally known as kooṭam or "gathering," which was also a name for Madurai. The first two of the three sangams were held in cities since "taken by the sea", and the third was held in the present-day city of Madurai.

THE SANGAMS:

The Sangam period extended from roughly 200 BC to 200 AD. when the earliest extant works of Tamil literature were written. It was also known as Sangam literature. However, the name *Sangam* and the associated legends probably derive from a much later period. Whilst the accounts of first two Sangams are generally rejected as historical. Nevertheless legends of the Sangams played a significant role in inspiring political, social, and literary movements in Tamil Nadu in the early 20th century.There are four languages of Southern India – Tamil, Kannada, Telugu and Malayalam. Tamil is the oldest among them and it has the great literature next to Sanskrit. The history of Tamil literature begins with an account of Samgams. There were three sangams. Sangams were societies of learned writers, poets and scholars. Various authors submitted their works and writings to the sangam and obtained its final approval. The age of the sangams was a period of great literary progress of Tamil. It produced colossal volume of Tamil poetry. The poets of the sangam Age enjoyed liberal patronage of the kings.

THE FIRST SANGAM:

The first Sangam (*muṯaṟcaṅkam*) is described as having been held at "the Madurai which was submerged by the sea", lasted a total of 4400 years, and had 549 members, which supposedly included some gods of the Hindu pantheon such as Siva, Kubera, Murugan and Agastya. A total of 4449 poets are described as having composed songs for this Sangam. There were 89 Pandiya kings starting from Kaysina valudi to Kadungon were dsecendents and rulers of that period. The seat of the first sangam was the old capital Madura in the south. It was submerged in the Indian Ocean. Its distinguished poets were Agastya, Tiripuramerittha.

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SOCIAL REFORMS OF GOWRI PARVATHI BAI

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Abstract

Queen Gowri Parvathi Bai was recognized as Regent in 1815 A.D. Being very young she was without any experience of the country and its affairs. The political and economic development of a country is mainly associated with the social system which prevails in society. The period of Rani Parvathi Bai was a breakthrough for the social transformation of Travancore. She was very eager to uplift society particularly the downtrodden people. She took necessary steps to abolish the oppressive taxes imposed on the oppressed people. Queen Gowri Parvathi Bai made arrangements to this effect and every caste was to be treated according to their respective usages. Permission was given to Ezhavas, Shanars, and such other castes to inherit their property and to act according to their tradition. Queen Gowri Parvathi Bai abolished unnecessary taxes. Free services rendered by the low caste people to the temples and the government called Oolium were abolished. The social reforms thus established by Parvathi Bai enhanced the social status of women in Travancore. She directly interfered to end caste rigidities and practices. She made reforms in almost all the fields. Therefore, Queen Gowri Parvathi Bai was undoubtedly called as one of the shining lights in the galaxy of India's ruling chiefs.

Introduction:

Queen Gowri Parvathi Bai was recognized as Regent in 1815 A.D. Being very young she was without any experience of the country and its affairs. The political and economic development of a country is mainly associated with the social system which prevails in society. Travancore had plunged into chaos and confusion in the first decade of the nineteenth century. The most important problem in the feudal structure was the division of society in terms of caste. The caste system in all its severity and rigidity divided the Hindu Society into several groups mutually hating and co-operating only to degrade the other. Its principles made a major section of the people mere slaves of the dominant or privileged classes.

Social Reforms:

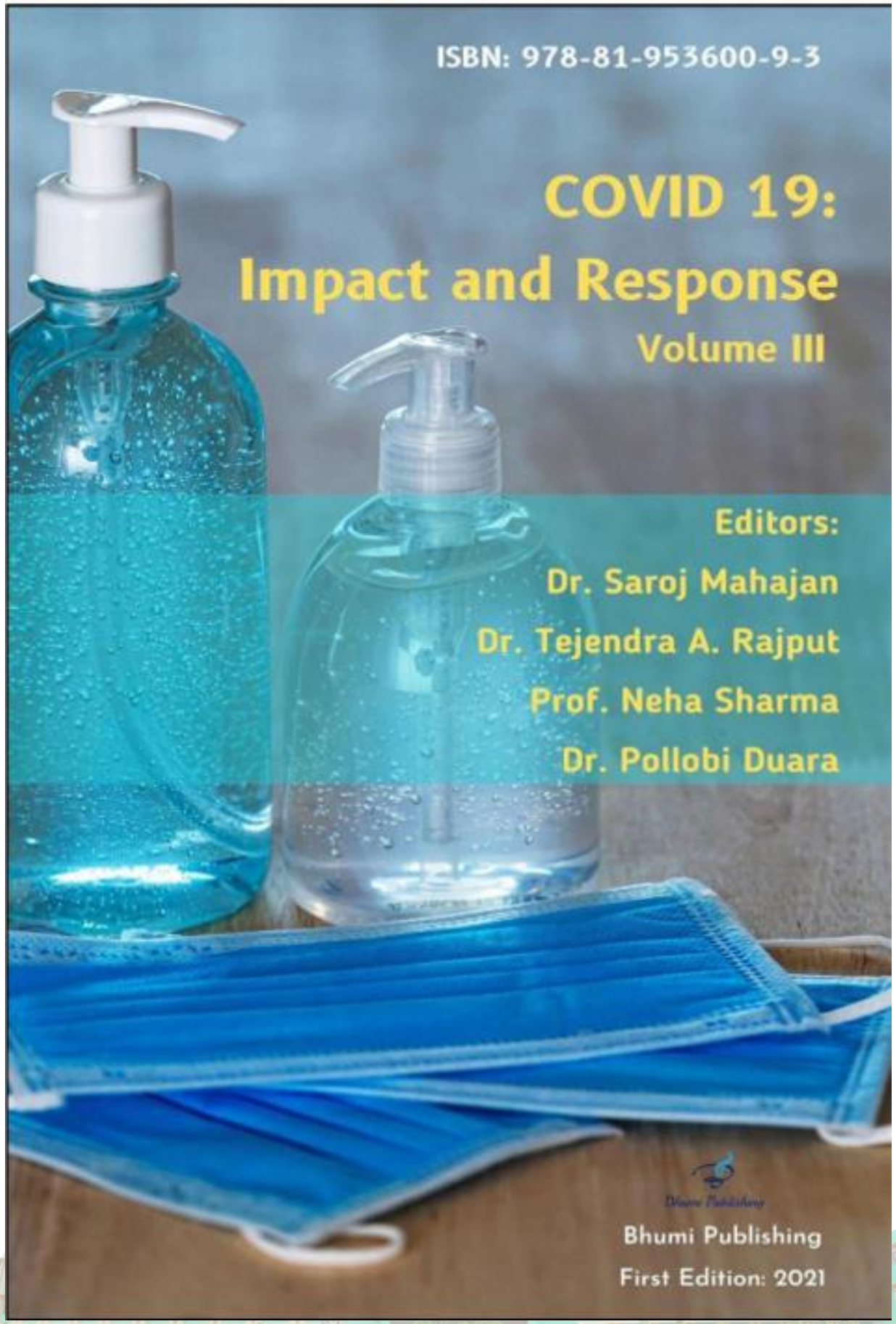
The caste Hindu predominance created a condition of general degradation causing social stagnation for centuries. The unprivileged or oppressed classes of the population composed of the Nadars, the Ezhavas, and the Parayas were kept by them in perennial subservience, poverty and ignorance. They were systematically excluded from all positions of power and were subjected to exploitation and humiliation. The establishment of political relations with the English East India Company was a turning point in the history of Travancore. The social order prevailing in Travancore at the beginning of the nineteenth century was favourable for the advent of the Protestant Missionaries. The arrival of Protestant Missionaries was a landmark in the history of Travancore. They ushered in a new era of thinking based on rationalism and liberalism. This endeavour certainly helped people to improve knowledge of the world and imbibe modern western ideas. Queen Gowri Parvathi Bai was very eager to uplift society particularly the downtrodden people. The period of Rani Parvathi Bai was a breakthrough for the social transformation of Travancore.

Abolition of Oppressive Taxes:

The whole system of taxation was arbitrary, unscientific, and barbarous in Travancore at the beginning of the nineteenth century. The burden of taxes mainly fell on the unprivileged classes, who suffered very much from the oppression of the government and the caste Hindus. With the advice of Col. Munro, Queen Gowri Parvathi Bai took necessary steps to abolish the oppressive taxes imposed on the oppressed people.

Poll Tax:

The poll tax was one of the few taxes that helped the rulers of Travancore to fill the coffer of the state. It was a capitation tax first imposed in 1754, on the Nadars and the Ezhavas by Marthanda Varma to meet the increased expenditure of the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SOCIO – ECONOMIC IMPLICATIONS OF COVID-19

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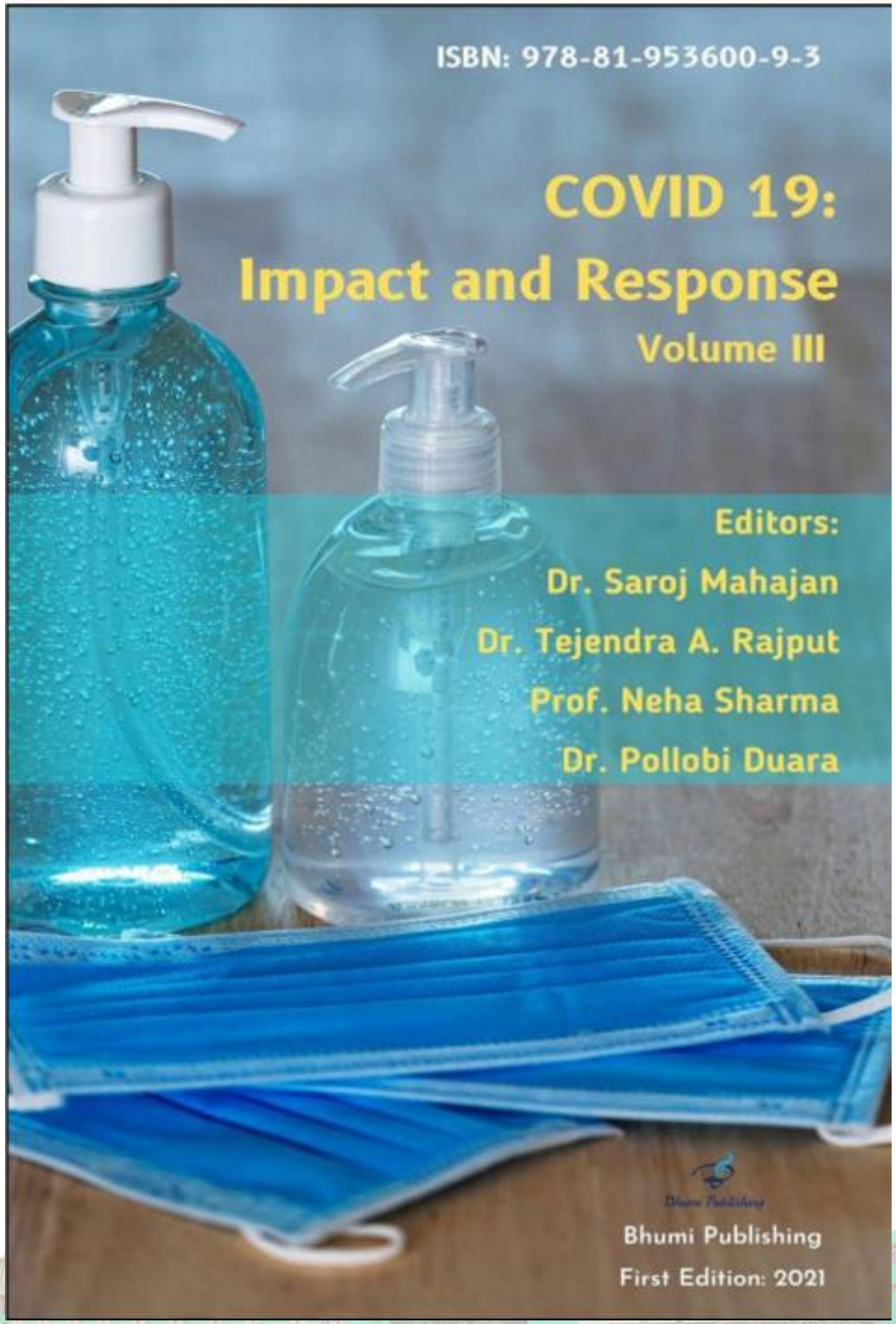
Abstract:

The Corona virus pandemic began spreading across the world just over a year ago, it did not spare any community or society. Socio-economic implications of COVID-19 such as loss of income, impacts on business, health care food and livelihood etc. Because of pandemic basic consumers' wants were affected. The lack of awareness among people, in the wake of an unknown disaster, additional exacerbated the circumstances.

Introduction:

The COVID-19 pandemic has prompted a sensational loss of human existence worldwide and presents a phenomenal test to general wellbeing, food and the work. The monetary and social interruption brought about by the pandemic is destroying. A huge number of individuals are in danger of falling into outrageous destitution, while the quantity of undernourished individuals, as of now assessed at almost 690 million, could increment by up to 132 million before the year's over. Almost 50% of the world's 3.3 billion workforce is in danger of losing their jobs. Casual economy laborers are especially helpless on the grounds that the larger part need social insurance and admittance to quality medical care and have lost admittance to useful resources. During lockdowns, many can't take care of themselves and their families. For most, no pay implies no food, or less food and less nutritious food.

The pandemic has been influencing the whole food framework and has revealed its delicacy. Boundary terminations, exchange cutoff points and imprisonment measures have been keeping ranchers from getting to business sectors, including for purchasing sources of info and selling their produce, and horticultural laborers from gathering crops, hence scattered homegrown and global food supply anchors and falling admittance to sound, protected and different weight control plans. The pandemic has obliterated positions and set great many vocations in danger. As providers lose positions, become sick and pass on, the food security and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POSITIVEANDNEGATIVEIMPACTOFCOVID-19ONEDUCATION

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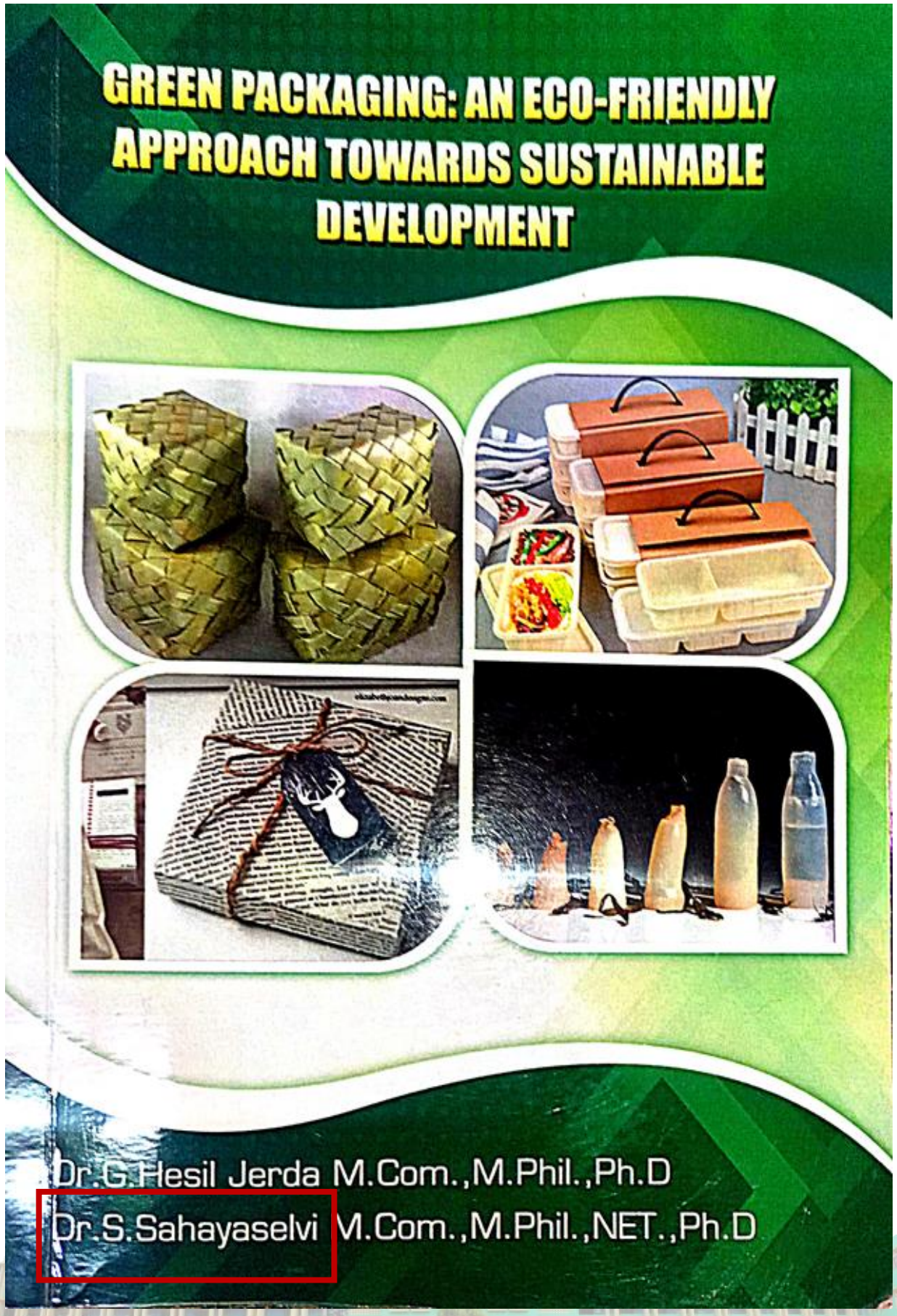
Abstract:
Corona affects the whole education system in our country. All the educational systemsare closed to control the covid- 19. It brings difficulties for students, teachers, and parents. So,distance learning is a solution to continue the education system. However, the lack of networkissues,infrastructures,computers,andinternetaccess is challengingdistancelearning indeveloping countries. Hence, countries design a strategy to use educational technology, zero-fee internet educational resources, free online learning resources, and broadcasts teaching.During closures, educational institutions design curriculum, prepare teaching-learningstrategiesforpost-coronavirus.Theeducational institutionsdesignstrategiesto recoverlostlearning,andreturnstudentstoschoolwhenschoolsreopen.

Introduction:

Theworldwideflare-upoftheCOVID-19pandemichasspreadaroundtheworld,influencingineveryoneofthenations.Inthewakeofnoticingthe Covidpandemiccircumstance the WHO encouraged to keep up with social separating is the principle avoidancestep. In this way, every nation began the activity of lockdown to isolate the defiled individuals.Every one of the instructive areas got shut. Classes suspended and all assessments of schools,universities andcolleges including passage tests weredelayed uncertainly. The understudiesareinfluencedwithoutquestion.Inspiteofthefactthatit'sanythingbutaremarkablecircumstance throughout the entire existence of instruction, COVID-19 has set out many opendoors to emerge from the thorough homeroom instructing model to another time of advancedmodel. The effect is expansive and has influenced picking up during this scholastic year orconsiderably more in the coming days. The majority of the schools, universities and collegeshave ended eye


GREEN PACKAGING: AN ECO-FRIENDLY APPROACH TOWARDS SUSTAINABLE DEVELOPMENT
Dr.G.Hesil Jerda M.Com.,M.Phil.,Ph.D
Dr.S.Sahayaselvi M.Com.,M.Phil.,NET.,Ph.D

Dr.G.Hesil Jerda did her under graduate from Meenatchi College for Women, Kodambakkam, Chennai, Madras University, her masters and M.Phil. in Holy Cross College (Autonomous) Nagercoil followed by Ph.D. under the guidance of Dr.S.Sahayaselvi. She has published 6 papers in high impact journal including Scopus. She has attended more than 20 seminars both national and international. She has a passion to bring some societal changes in Coastal villages, as she hails from Coastal area. At present she is working as an Asst.Professor in Commerce in St. Teresa Arts and Science College for Women, Mangalakuntru.

Dr.S.Sahayaselvi is renowned professor working in the Department of Commerce, Holy Cross College (Autonomous),Nagercoil for the past 16 years. She has published 50 + papers in the referred journals with high impact factor, UGC care list: group I and group II. She has attended several national and international seminars and published 13 papers in various proceedings.She goes as a resource person to the various schools and colleges in Tamilnadu which includes 3 talks in the radio station in Konam, Kanniyakumari District. She was the Head of the department for the past 10 years in the self - financed stream and at present she serves as an assistant professor in the aided stream. She has cleared NET exam in 2011. She is also a professional counsellor.To her credit she has completed 2 minor projects and published one book. She is the research guide from 2017 onward. She is a proud recipient of many prestigious awards like Dr.A.P.J.Abdul Kalam Rastriya Puraskar-2019 by Glacier Journal Research foundation, Global Management Council, Ahmedabad. Best Professor Award 2020 by ESN IND-SL International Award, Kandy, Sri Lanka, and Distinguished Women -2020 by Venus International Foundation, Chennai... to name a few. Dr. S. Sahayaselvi is a religious nun belonging to the Congregation of the Sisters of the Cross of Chavanod,France. At present she is the founder of CrossCom A to Z Tailoring Unit for Women under Start-up scheme of MHRD.

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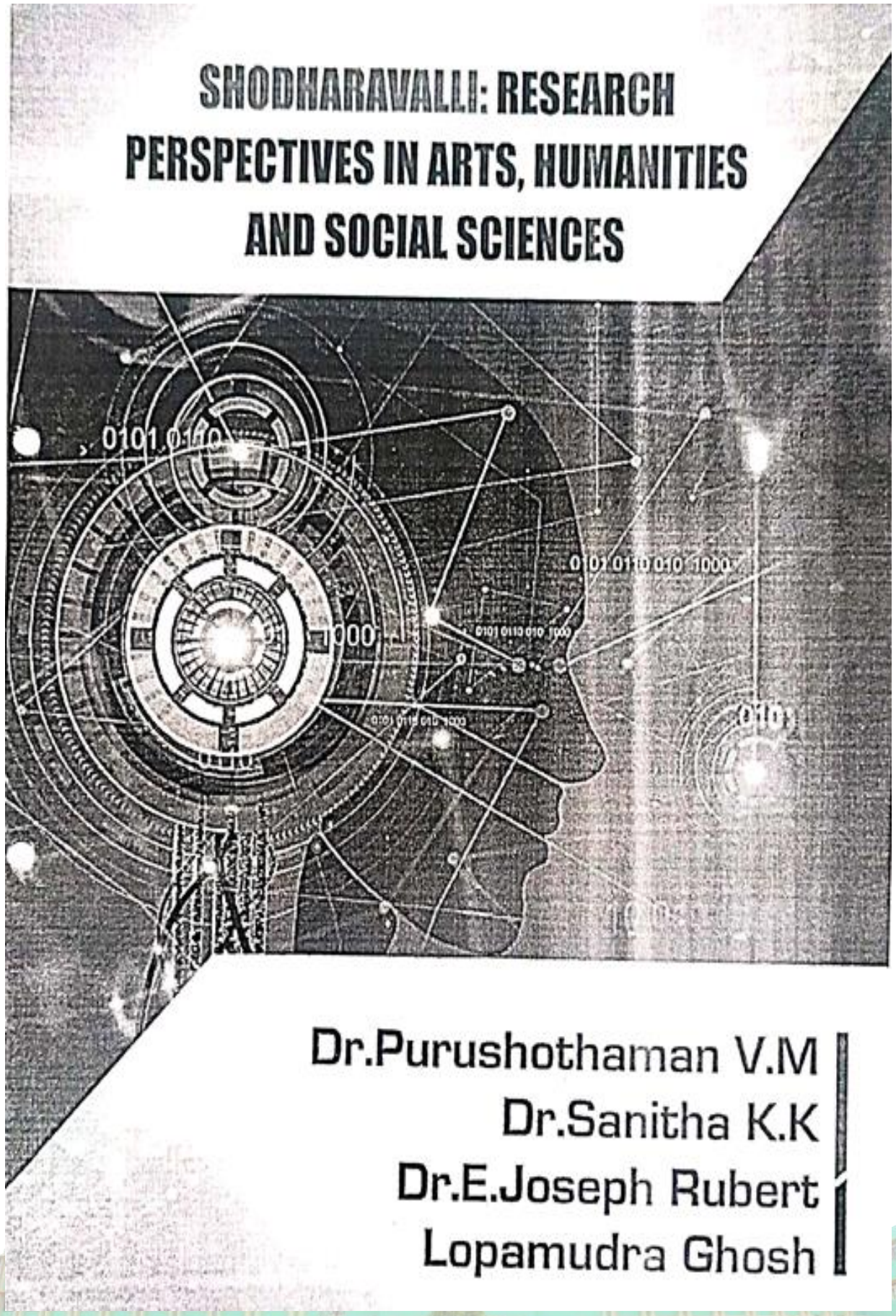
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Impact of Emotional Intelligence on Academic Achievements of Students in Nagercoil

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ABSTRACT

Emotional Intelligence is an important factor for success of student. Emotions shape a man's destiny and define the way he/she perceives life. So, Emotional Intelligence is necessary to equip students to solve new challenges and problems. This study aimed at studying and understanding the impact of emotional intelligence on academic achievements of students in Nagercoil, and studying the relationship between emotional intelligence and education. Present study is descriptive in nature and simple random sampling was adopted. A group of 50 respondents were selected as sample respondents. Both primary data and secondary were collected. The collected data were analyzed with the help of Likert's 5 point scale and Chi-square test. Based on the analysis findings are drawn and suggestions are given.

Introduction

Academic achievement means successful accomplishment of performance in a particular course of study. It is the result of education – the extent to which a student, teacher and institution has achieved their educational goals. In the present day world, the whole system of education narrowly

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Positive and Negative Outcomes of Performance Appraisal of Private Employees with Special Reference to Kurian Abraham Private Ltd, Nagercoil

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Abstract

Today, appraisal is not something a choice left to the wishes of corporates nor it is a privilege to be enjoyed by few business conglomerates. Every organization needs to have performance appraisal both for promoting and nurturing the employees' effectiveness as well as for its survival and growth in the present scenario. When employees are encouraged to perform better, it leads to overall growth and enhance productivity. Performance appraisal is conducted in a systematic and planned manner to achieve various organizational goals. Performance appraisal is carried out to ascertain the worth of the employees to the organization in which he/she works. This paper aims to study the importance and the outcomes of performance appraisal in Kurian Abraham Private Limited. The results of this research exhibit that salary rise, confidentiality, promotion, improvement and change in behavior are the positive outcomes and sharing the burden of one another, criticism and motivation are the negative outcomes of private employees working in Kurian Abraham Private Limited.

Keywords: Performance appraisal, employees, evaluation, improvement, promotion.