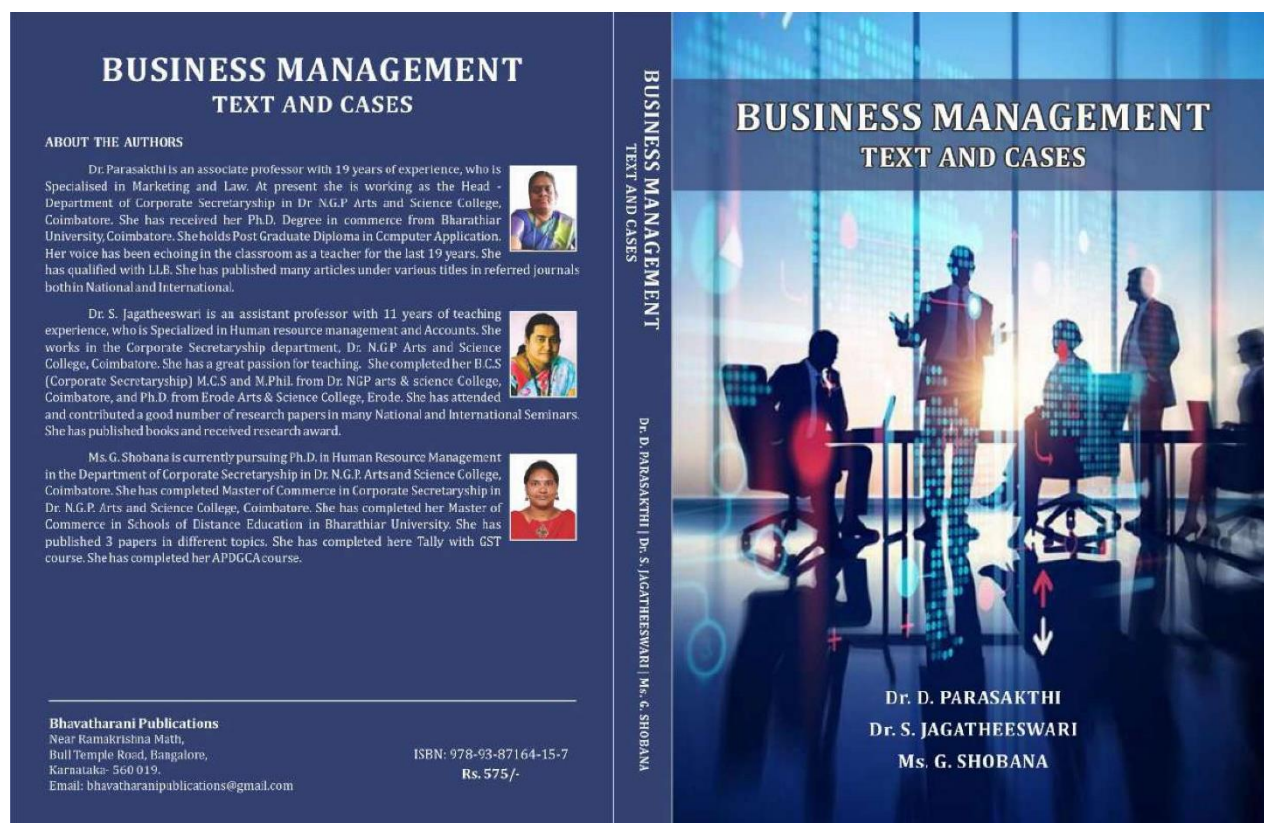


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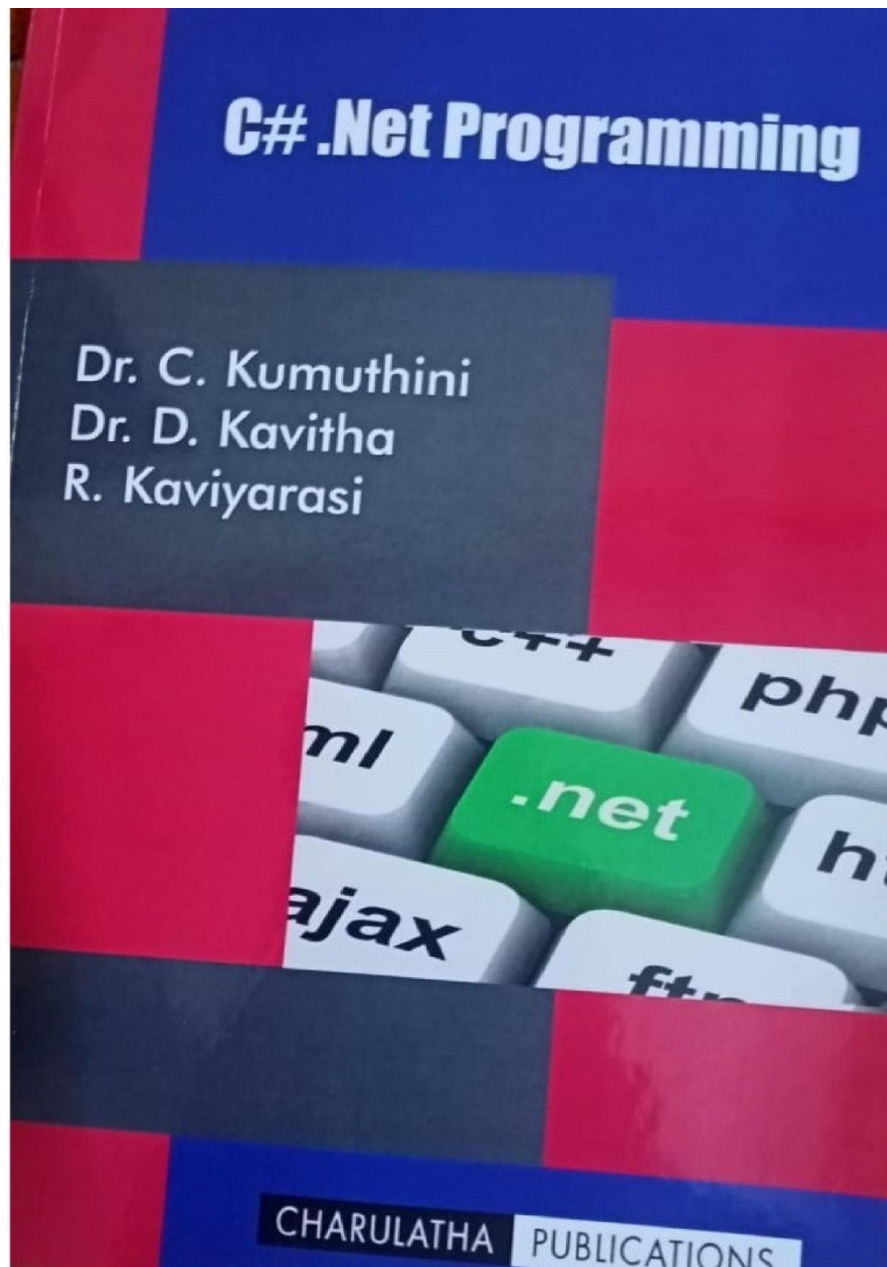
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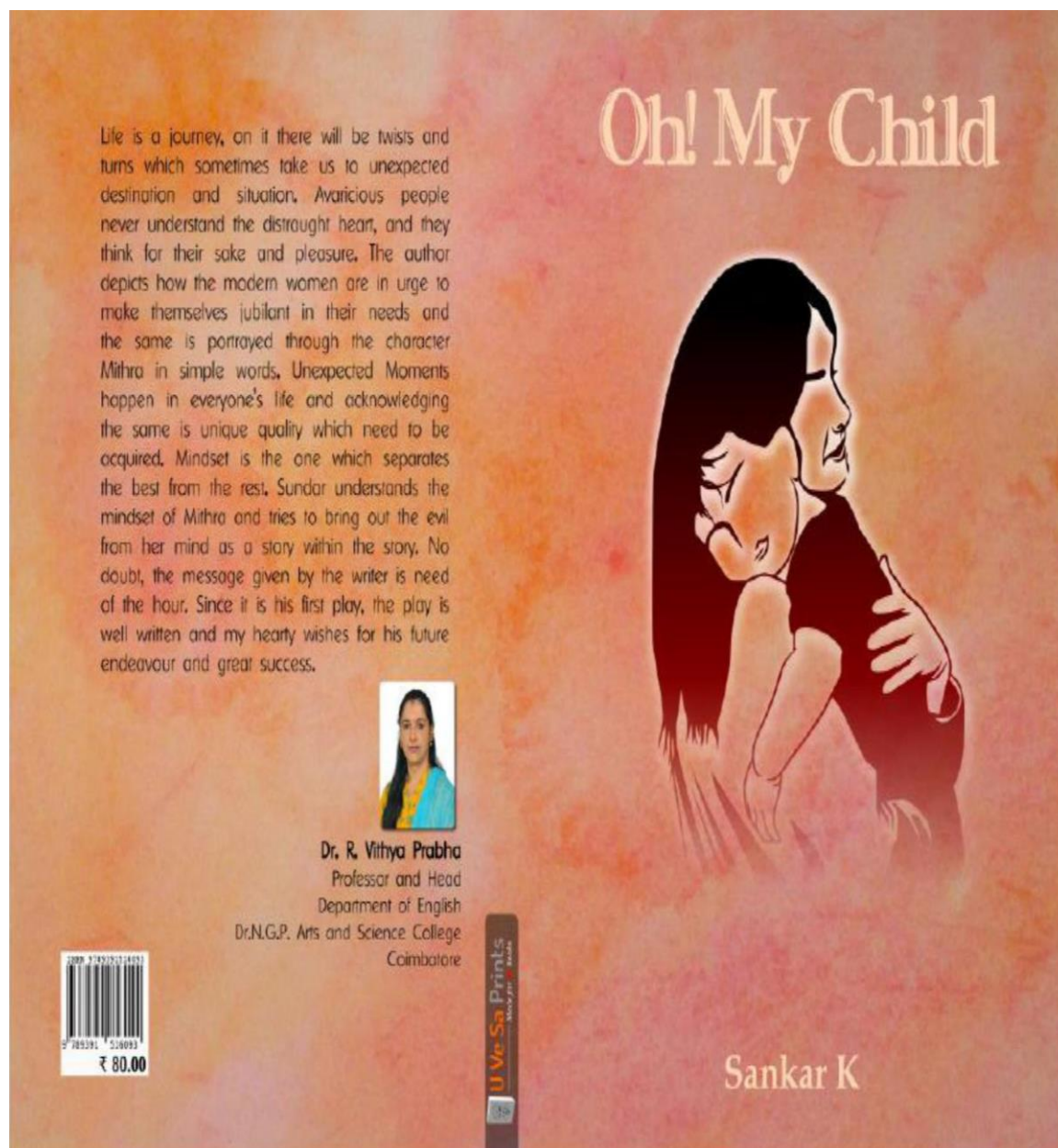
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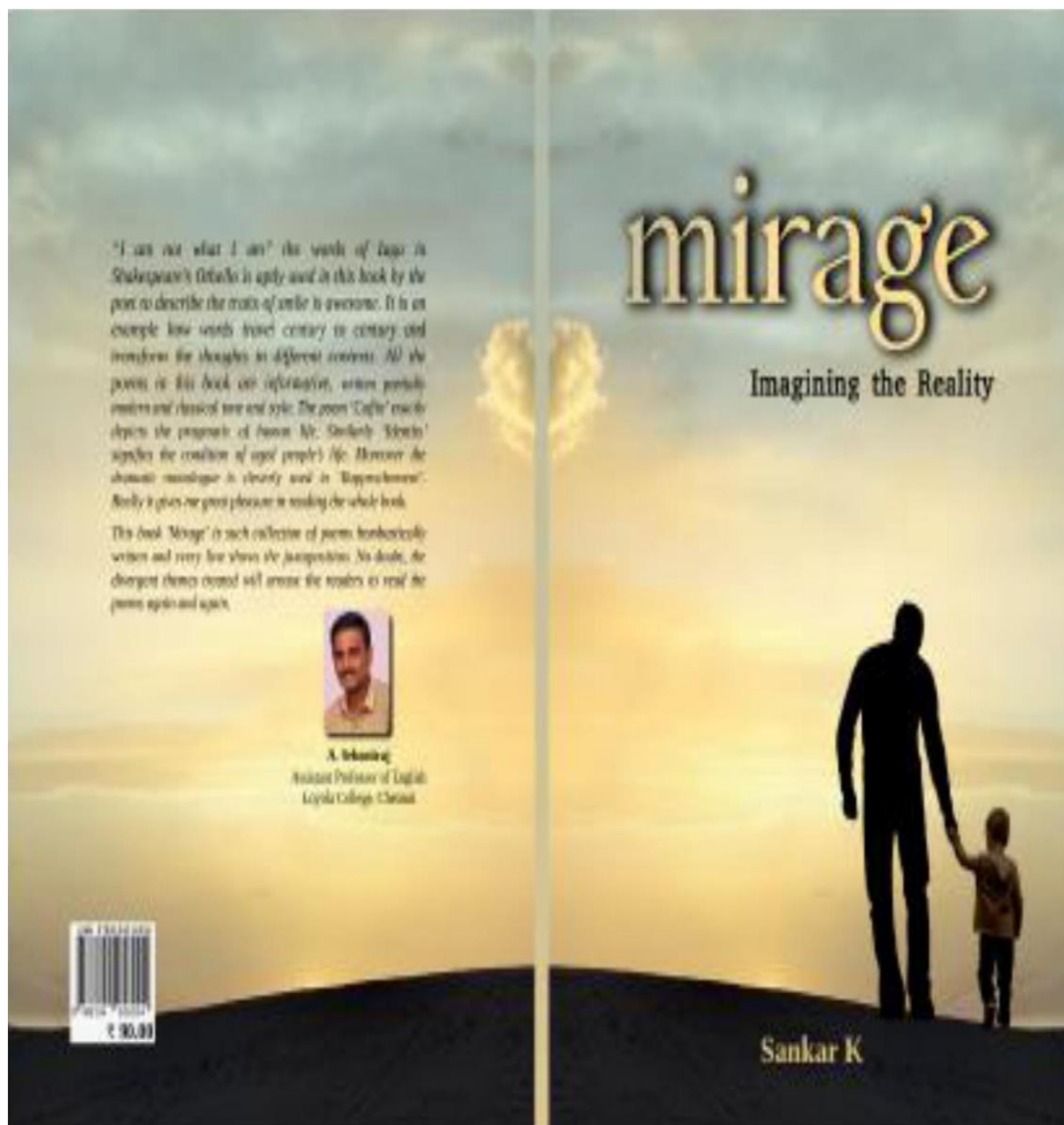
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தாய் - சேய்க்கான உணவுகள்


பாடர் க. இராஜேந்திரன் அவர்கள் மேய்ப்பதற்கு மருத்துவக்கல்லூரியில் எம்.பி.பி.எஸ்.எம்.பெ.எம். மருத்துவக்கல்லூரியில் குழந்தை மருத்துவத்தில் எம்.டி.யும் முத்தவர். அமெரிக்காவில் உள்ள பாஸ்கன் பல்கலைக்கழகத்தில் குழந்தைகளுக்கான ஊட்டச்சத்துக்களில் முதுநிலை பட்டம் கௌரவிக்கப்பட்டவர். இவர் தாய் மருத்துவமனையில் பணி செய்து, கோவை மகளிக் குழந்தைகள் மருத்துவமனையில் உதவித் தலைமை மருத்துவ அதிகாரியாகப் பணிபுர்தி அனுபவம் பெற்றவர்.

தற்போது கோவை மருத்துவ மனம் மற்றும் மருத்துவமனையில் பேராசிரியர் மற்றும் துறைத் தலைவராகவும் குழந்தைகள் மற்றும் சிசுவச் சிறப்புப் பிரிவு மருத்துவராகவும் பணிபுர்தி வருகிறார்.

இவர் இந்திய குழந்தை மருத்துவக் குழுமத்தின் கோவை மாவட்டப்பிரிவின் முன்னர் தலைவராகவும் செயலாளராகவும் பணிபுர்தினார். மேலும், தமிழ்நாடு மாநிலப்பிரிவின் முன்னர் செயலாளராகவும் தற்போது செயலாளராகவும் பணிபுர்தி வருகிறார். இவர் குழந்தைகள் நலம் பற்றி எழுதியுள்ள மேற்பட்ட கட்டுரைகளை வெளியிட்டுள்ளார். குழந்தை நல மருத்துவ இளநிலை மற்றும் முதுநிலை பட்டப்படிப்பிற்கான துறைத் தலைவராகவும் ஆய்வு மானவர்களுக்கு வழிகாட்டாளராகவும் பாடர் எம்.ஜி.ஆர். மருத்துவப் பல்கலைக்கழகத் தொழில்நுட்பப் பரிநிதி மானவர்களுக்கு பேராசிரியராகவும் இருந்து வருகிறார்.

பெண்களின் கர்ப்ப காலப் பரிசோதனைகள், பராமரிப்பின் நோக்கங்கள், அகல் வலிமுறைகள், அவர்கள் பெரிய பெண்மைய உடற்பயிற்சிகள் மற்றும் உணவு முறைமைப் பற்றி வினாக்களைக் கூறுகிறார். தாய்ப்பால் கொடுக்கும் தாய்மார்களுக்கான உணவு முறைகள், தாய்ப்பால் ஊட்டம் வலிமுறைகள், அகல் மகத்தவம் பற்றிக் கூறுகிறார். தந்த உணவுகளால் ஏற்படும் பரப்பி, உணவு மற்றும் நீர் வழிபாக பரவல் நோய்களைத் தடுக்கும் முறைகள் ஆகியவற்றைப் பற்றித் தெளிவாக விளக்கிபுகிறார். வளர்ச்சிக்கூறுபடு, வயிற்றப்போக்கு, மலச்சிக்கல், குடம் அகற்சி போன்ற நோய்களால் பாதிக்கப்பட்ட குழந்தைகள் மற்றும் சிறந்தவல் பரப்பி, பிறந்தோடு, கவிரல், இருபு பரப்பின் குழந்தைகளுக்கான சிறப்பு உணவு முறைமைப் பற்றி எடுத்துரைத்துள்ளார். குழந்தைகளுக்கான நுழைவு ஊட்டச்சத்து, அவ்வுள்ள வலி உணவு வகைகள், வலிப்பு நோயால் பாதிக்கப்பட்ட குழந்தைகளுக்கான சிறப்பு கீட்டோஜெனிக் உணவு முறைமைப் பற்றிக் சிறப்பாக விளக்கிபுகிறார்.

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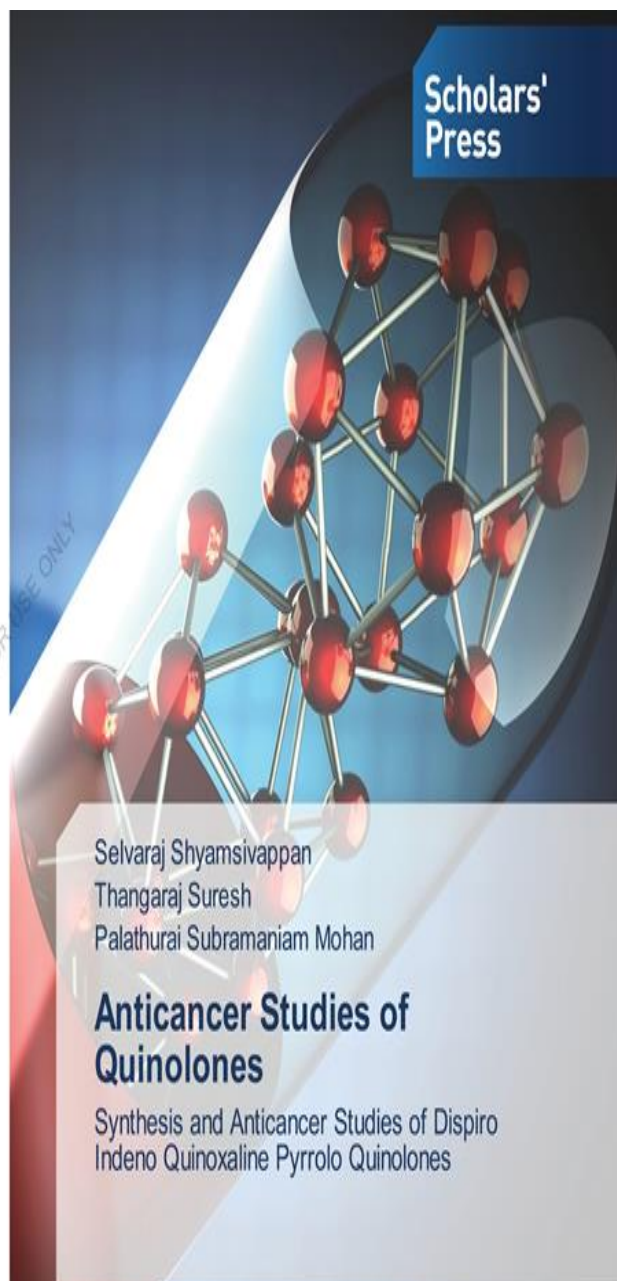
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Cancer is an uncontrollable disease and one of the top listed causes of death worldwide. Currently, surgery, radiation therapy, and chemotherapy are important primary treatments for cancer. In chemotherapy, many anticancer agents have been approved for cancer treatment. However, during chemotherapy, most of the drugs have side effects. Hence, the development of new highly efficient anticancer agents with low side effects necessary. In this context, Quinolines play a significant role in anticancer drug development because of their specific function through a different mechanisms of action such as enzyme inhibitors, cell cycle arrest, and apoptosis.



I have completed my Ph.D. in the Department of Chemistry, Bharathiar University, India. My professional interests lie in laboratory research related to the synthesis of bioactive molecules and my research advisor Prof. P.S. Mohan has concentrated on the synthesis of multifunctional quinoline-based heterocycles via highly reactive intermediates.



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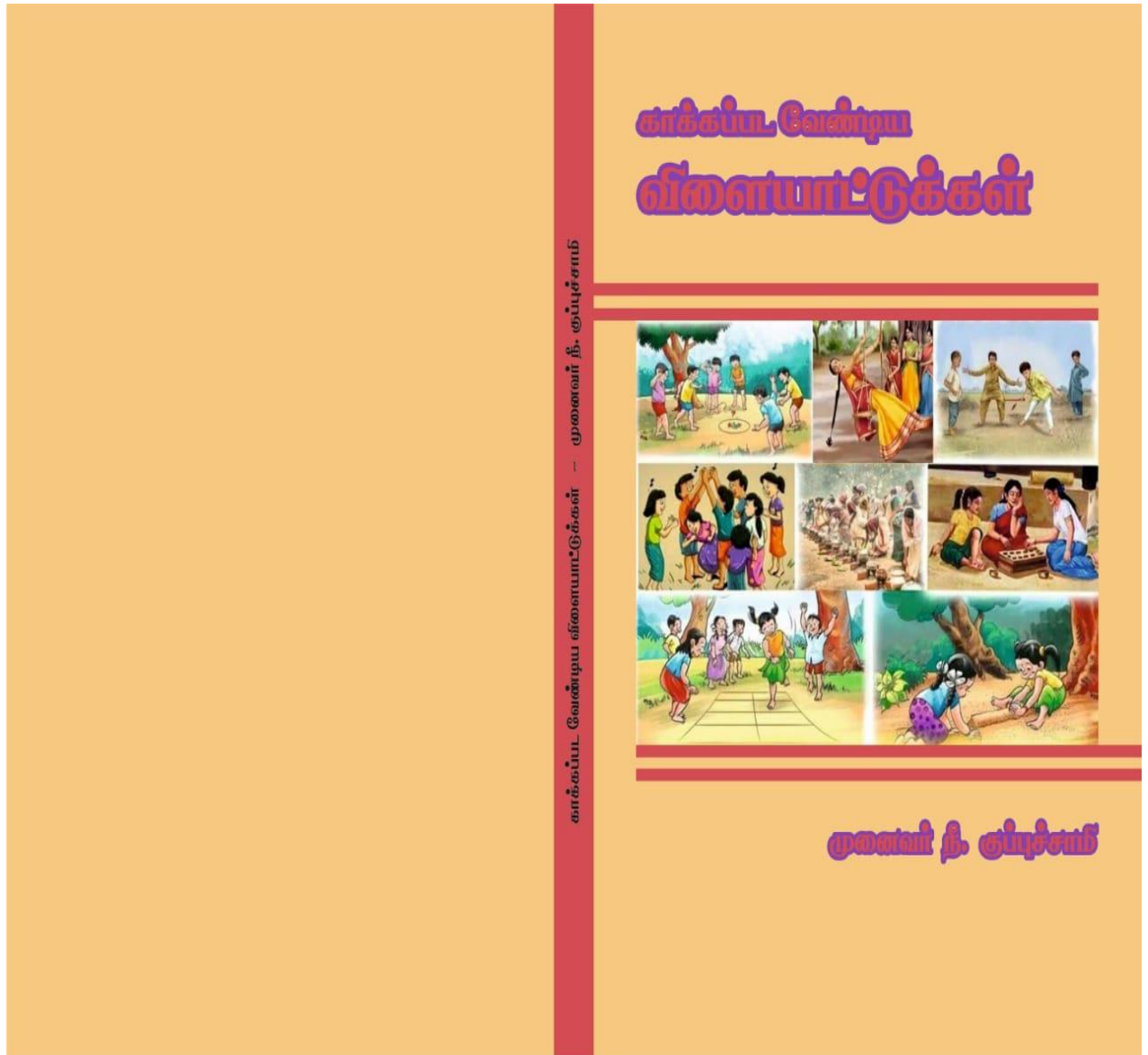
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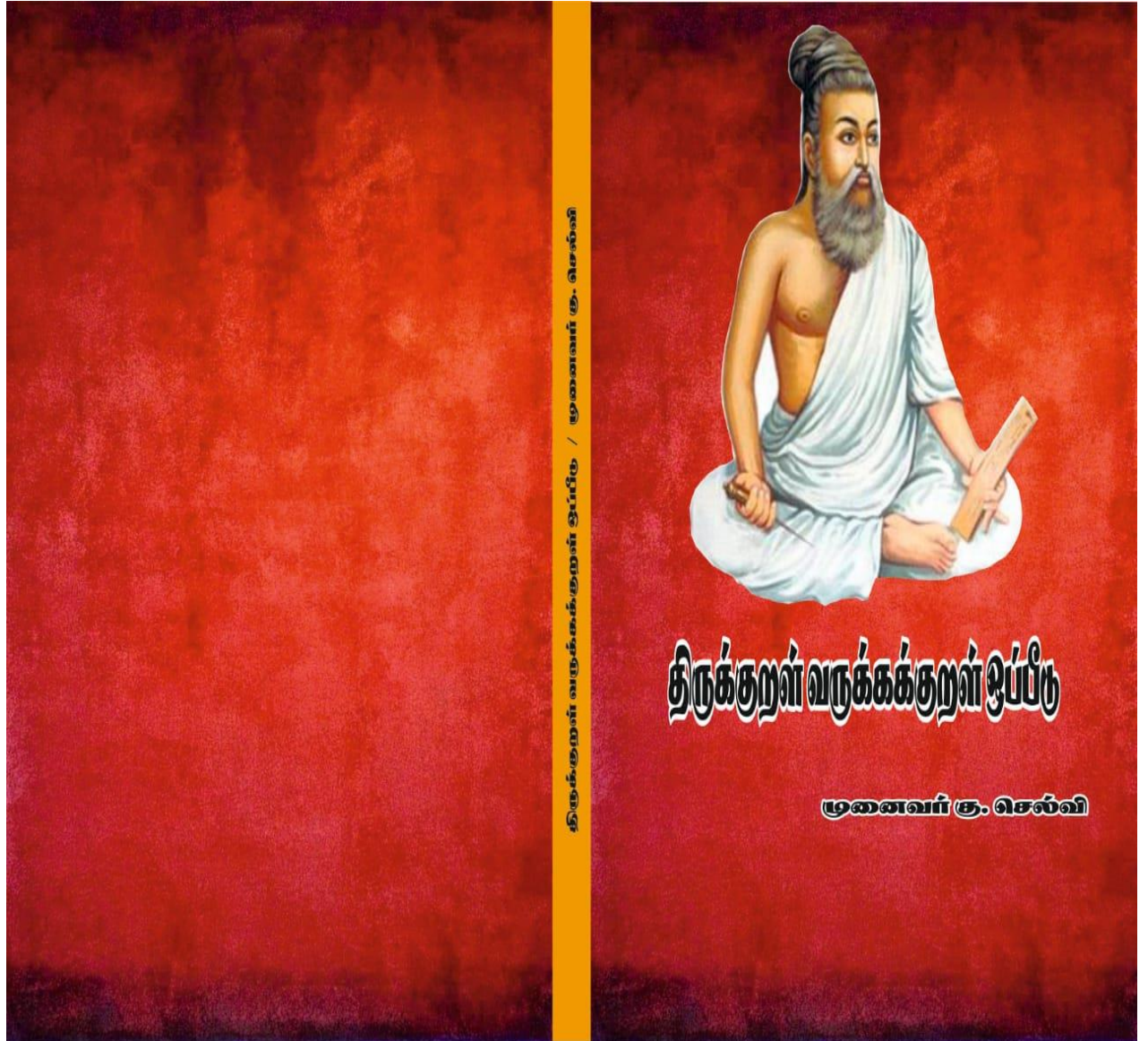
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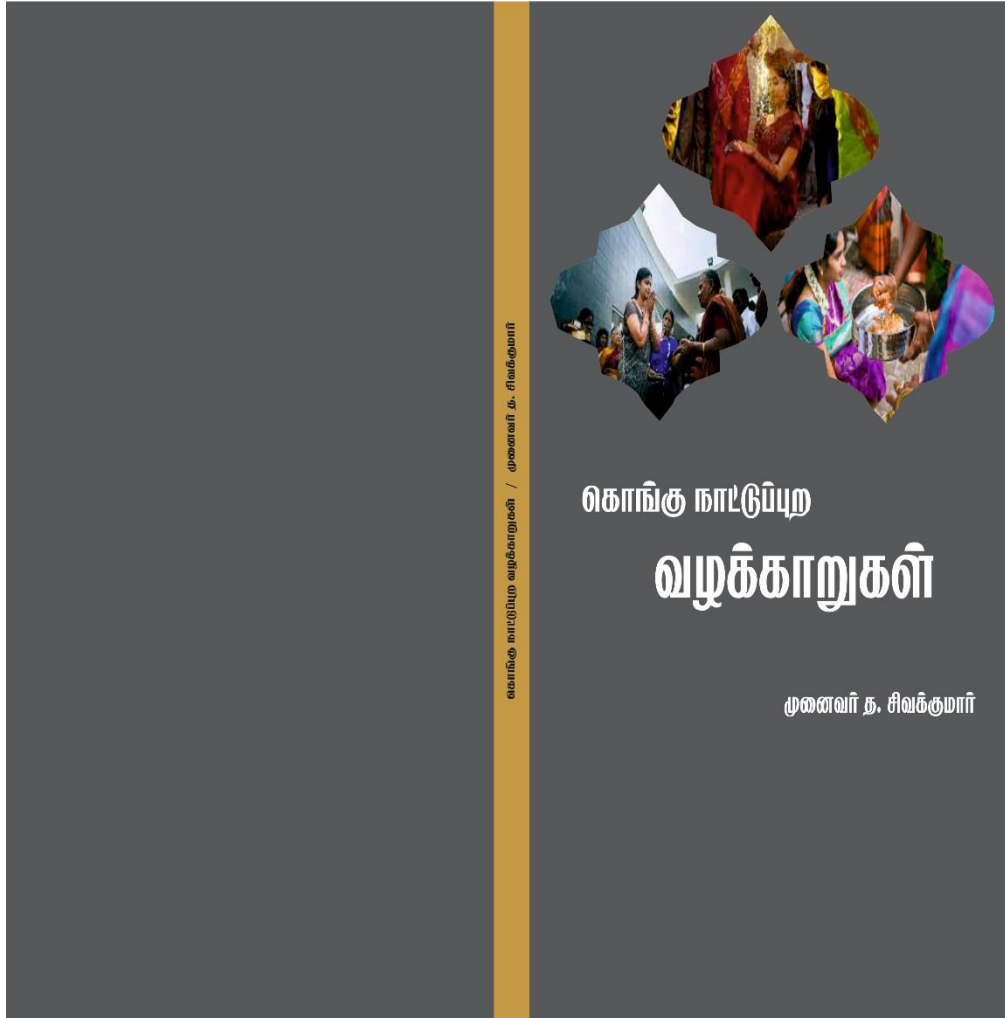
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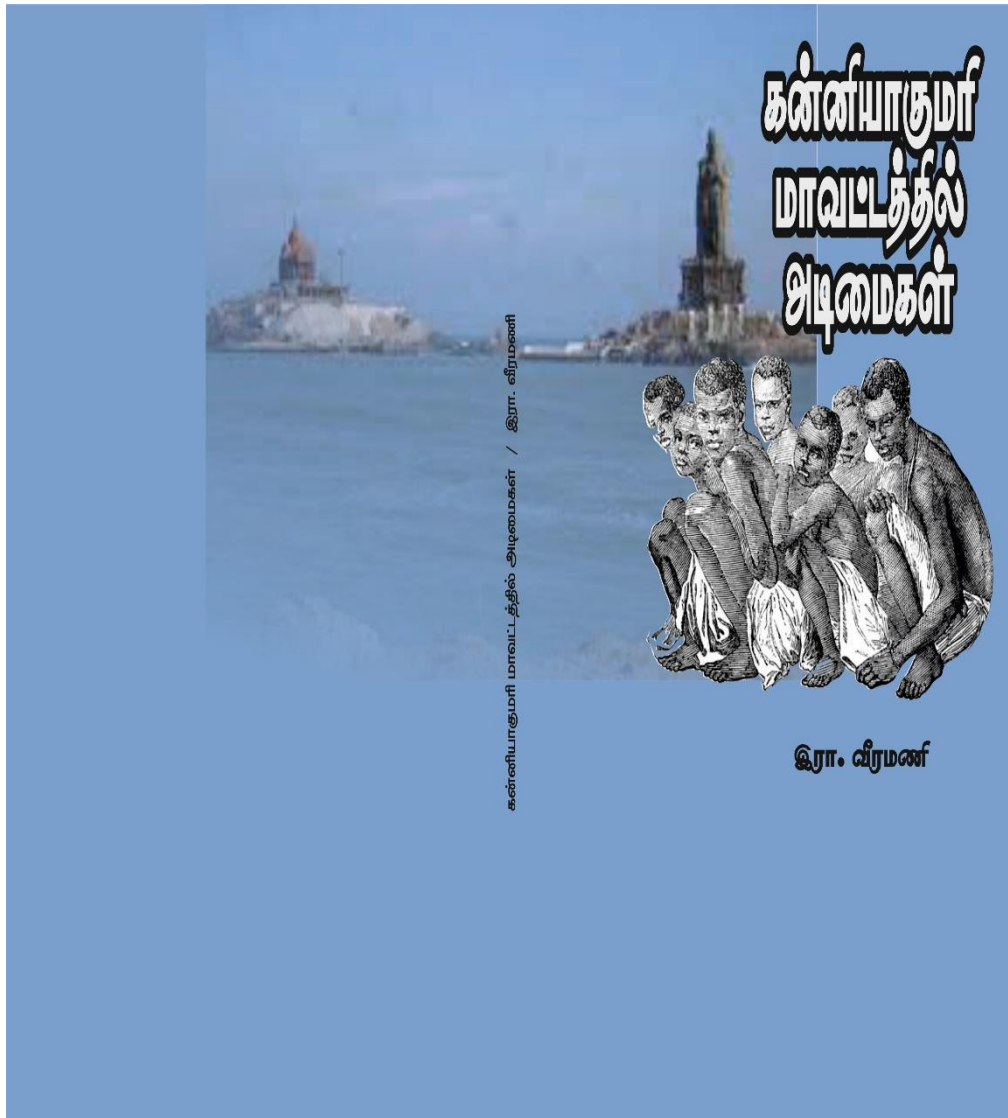
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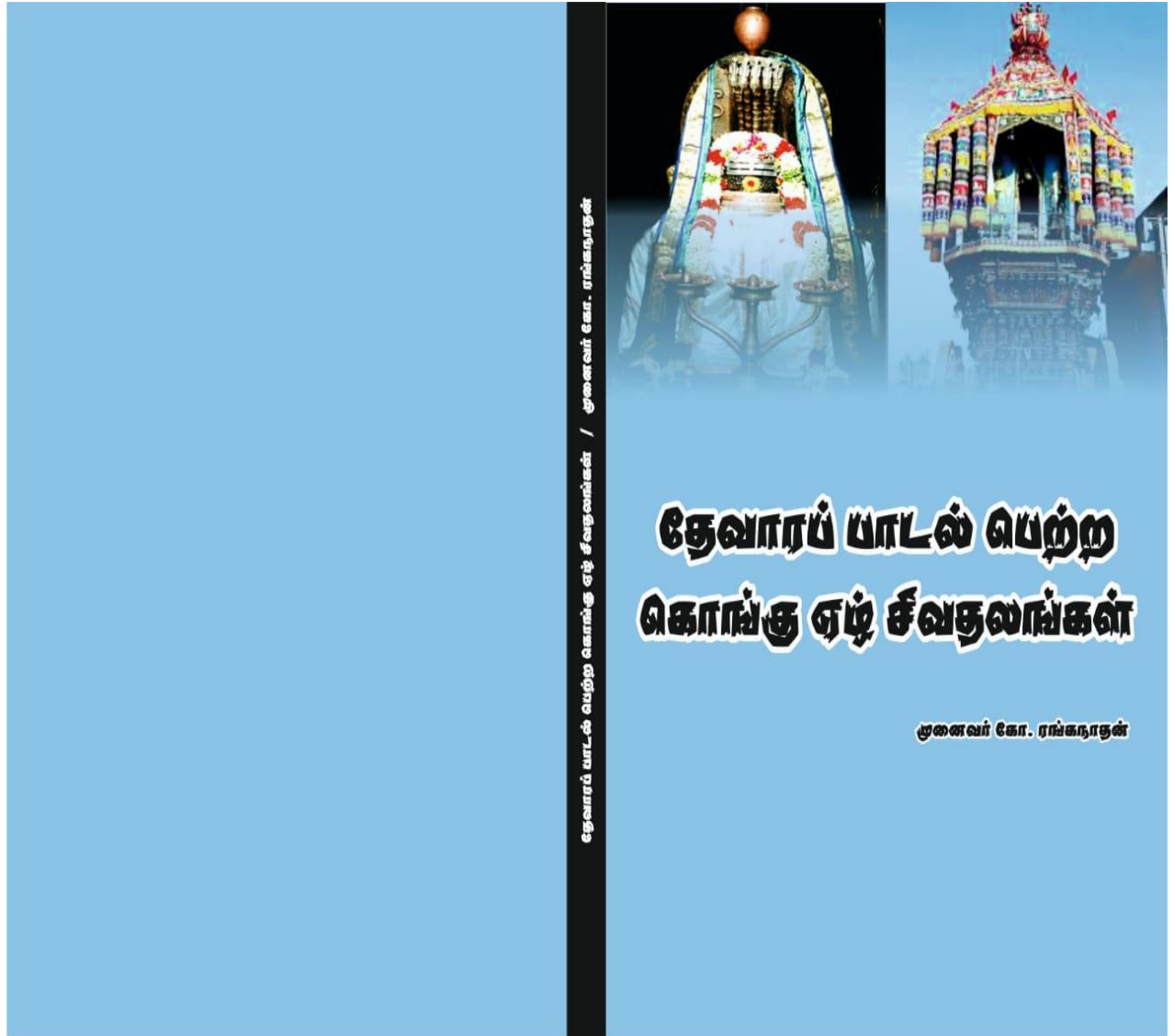
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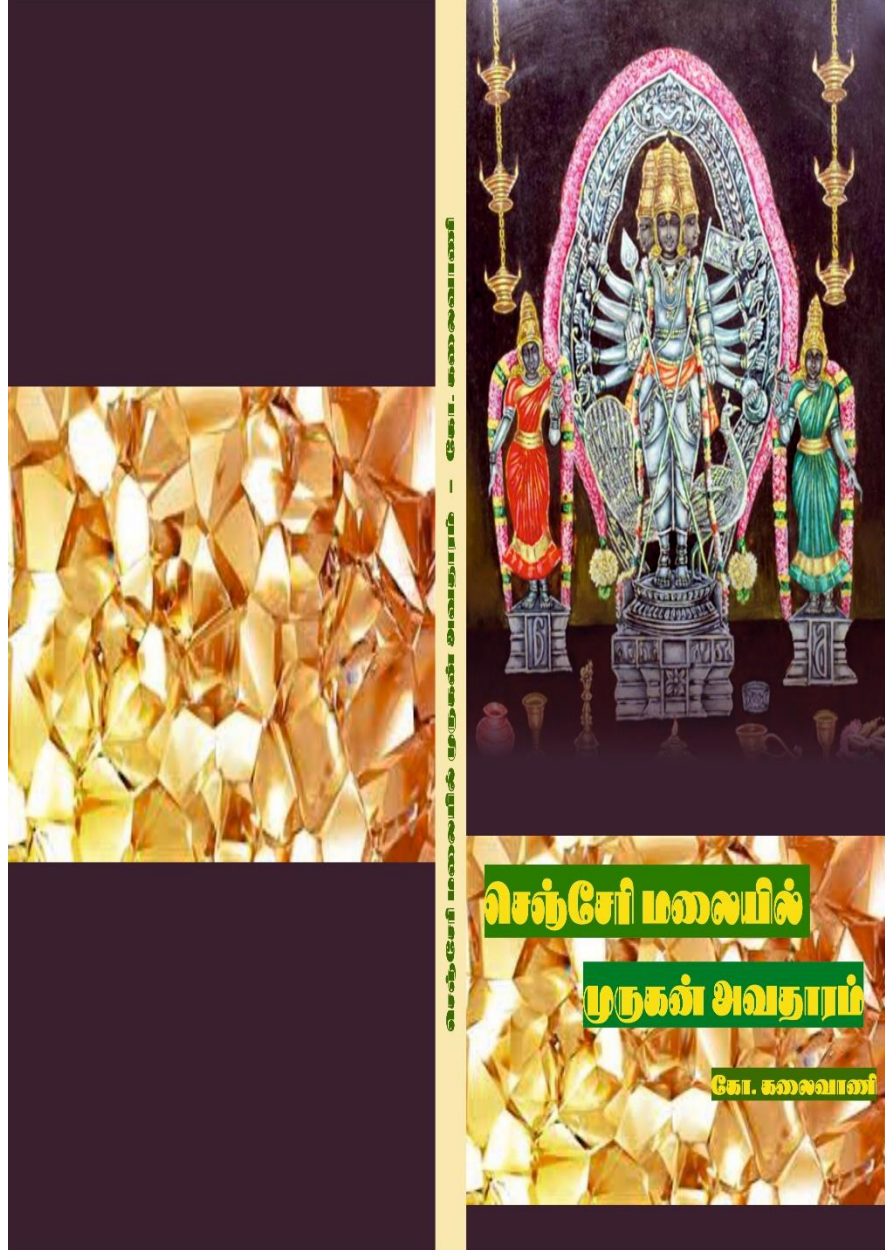
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முனைவர் மா. சம்பத்குமார்



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22. Dr.G.Senthil kumar



இந்தரலாக்ஷியர் முனைவர் க.செந்தில்குமார் திருவாரூர் மாவட்டம் கொட்டைபாளையம் சேந்தவர். இளங்கலைப் பட்டத்தை கும்பகோணம் அரசுக்கலைக் கல்லூரியிலும், முதுகலைப் பட்டத்தை கரந்தை தமிழவேள் உமாமைகவுரணர் கல்லூரியிலும் பயின்றவர். ஆய்வியல் நிறைவுத் தர்ப்பம் முனைவர் பட்டங்களைத் தமிழ்நிலக்கலைக் கழகத்தில் முடித்துள்ளார். இலக்கியம், நாட்டுப்பழுவியல், இனவரைவியல் போன்ற துறைகளில் ஈடுபாடு கொண்ட இவர் இந்திய மொழிகளின் நடுவண் நிறுவனமான தேசிய நன் தேர்வு மையத்தில் (National Testing Service, Mysore) இரண்டாம் தரம் ஆராய்ச்சியாளராகப் பணியாற்றியுள்ளார். திராவிடப் பல்கலைக்கழகம் உருவாக்கிய நாட்டுப்பழுவல் கலைக்களஞ்சியத்தில் தமிழ் பகுதியின் குழு உறுப்பினராகவும் பணியாற்றியுள்ளார். 2012-2014-ஆம் ஆண்டிற்கான இந்திய கலாச்சார அமைச்சகத்தின் கீழ் இயங்கும் மத்திய கலாச்சார வள பயிற்சி மையத்தின் உதவித்தொகையுடன் விவரம் நலை மக்களான புதிருவன் னார்கள் பற்றி ஆய்வு செய்துள்ளார். தற்போது கோயம்புத்தூர் டாக்டர் என்.ஜி.பி. கலை மற்றும் அறிவியல் கல்லூரியில் தமிழ்த்துறை உதவிப் பேராசிரியராகப் பணிபுரிந்து வருகிறார். இது இவரது இரண்டாவது நாலாகும்.

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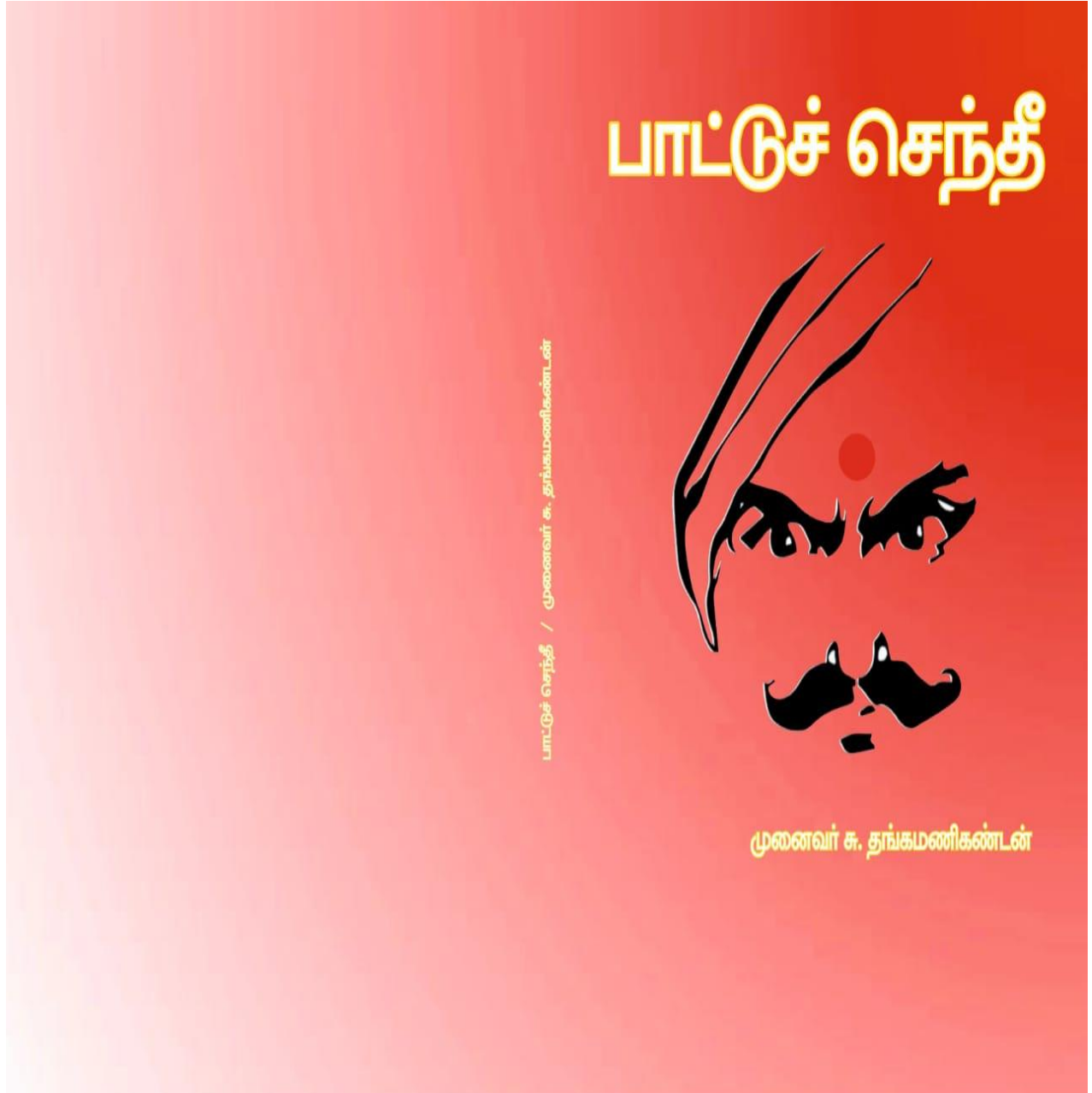
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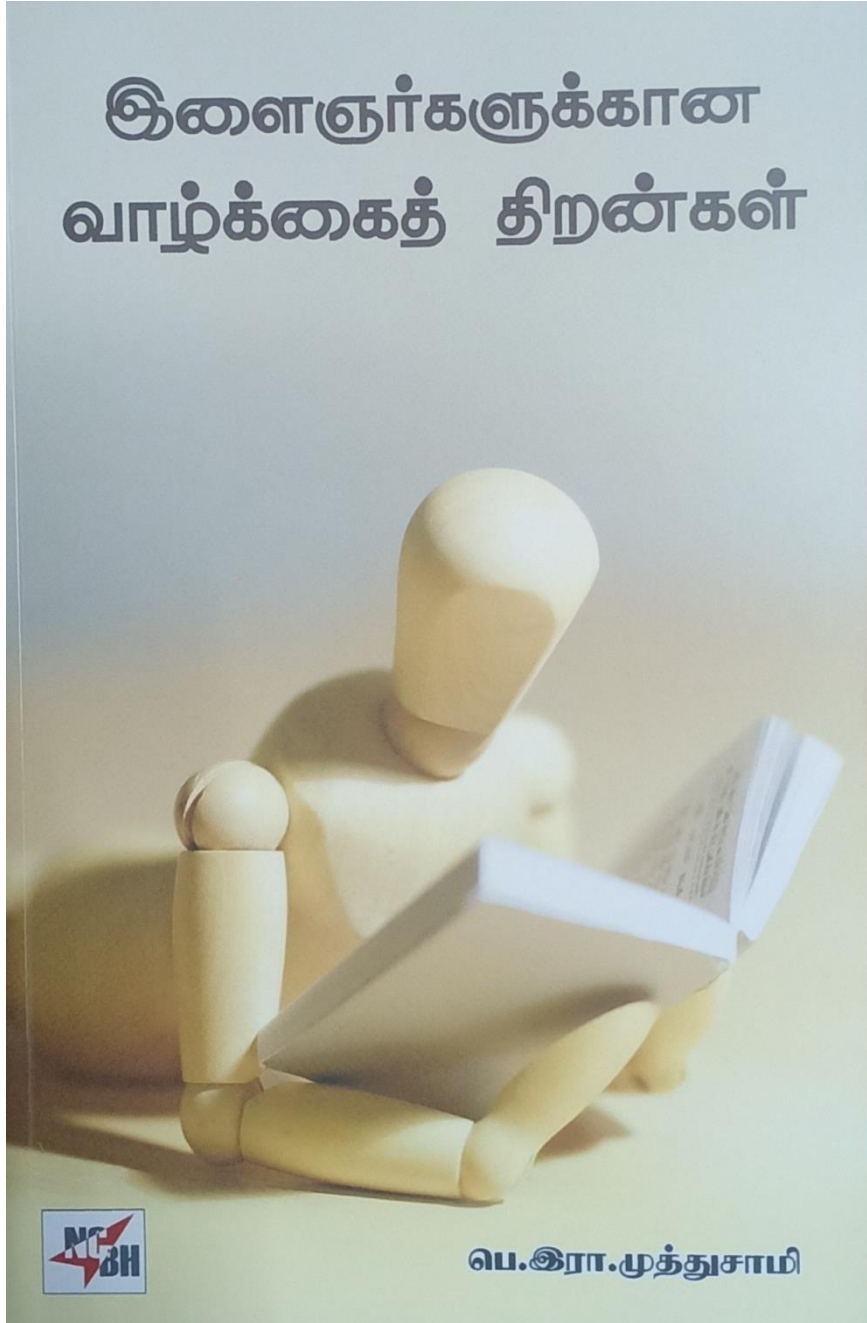
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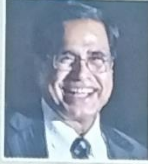


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மனிதனின் மூளை ஒரு பெரிய இனிமேல் தோற்றுவதற்கு முடியாத ஒரு கம்ப்யூட்டர். அதைச் சரியாகப் பயன்படுத்தத் தெரிந்தால் செய்ய முடியாது என்பது எதுவுமில்லை. மூளைதான் மனிதனின் சக்தி. அந்த சக்தியைச் சரியாகப் பயன்படுத்த வேண்டும். இப்போதைய இளைஞர்கள் எப்படி இருக்க வேண்டும். அவர்களுக்கு எவை எவை உபயோகமாக இருக்க வேண்டும் என்பதைப் பல விதத்தில் எடுத்துக் காட்டப்பட்டுள்ளது.

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தலைவர், உலகத் தமிழ்ப் பண்பாட்டு மையம் & கோவை மருத்துவ மைய ஆராய்ச்சி மற்றும் கல்வி அறக்கட்டளை



பக்கத்துக்குப் பக்கம் முத்துக்களை விதைத்தாற் போல் ஆளுமை வளர்க்கும் அறிவுக் களஞ்சியமாக இந்த நூலை வடித்துத் தந்திருக்கிறார் பேராசிரியர் முத்துசாமி.

பேராசிரியர் தம் வாழ்வை இளைய சமுதாயத்துக்காக ஒப்படைத்துக் கொண்டவர். பல தலைமுறை மாணவர்களுக்கு குறியும் நெறியும் காட்டிய அனுபவம் மிக்கவர். எனவே உள்ளங்கை நெல்லிக்கனி போல மாணவர்களின் சிந்தனைப் போக்கை அளந்தறிந்தவர். தம் வாழ்வனுபவத்தின் பிழிவாக 'இளைஞர்களுக்கான வாழ்க்கைத் திறன்கள்' என்ற இந்த நூலைத் தந்திருக்கிறார்.

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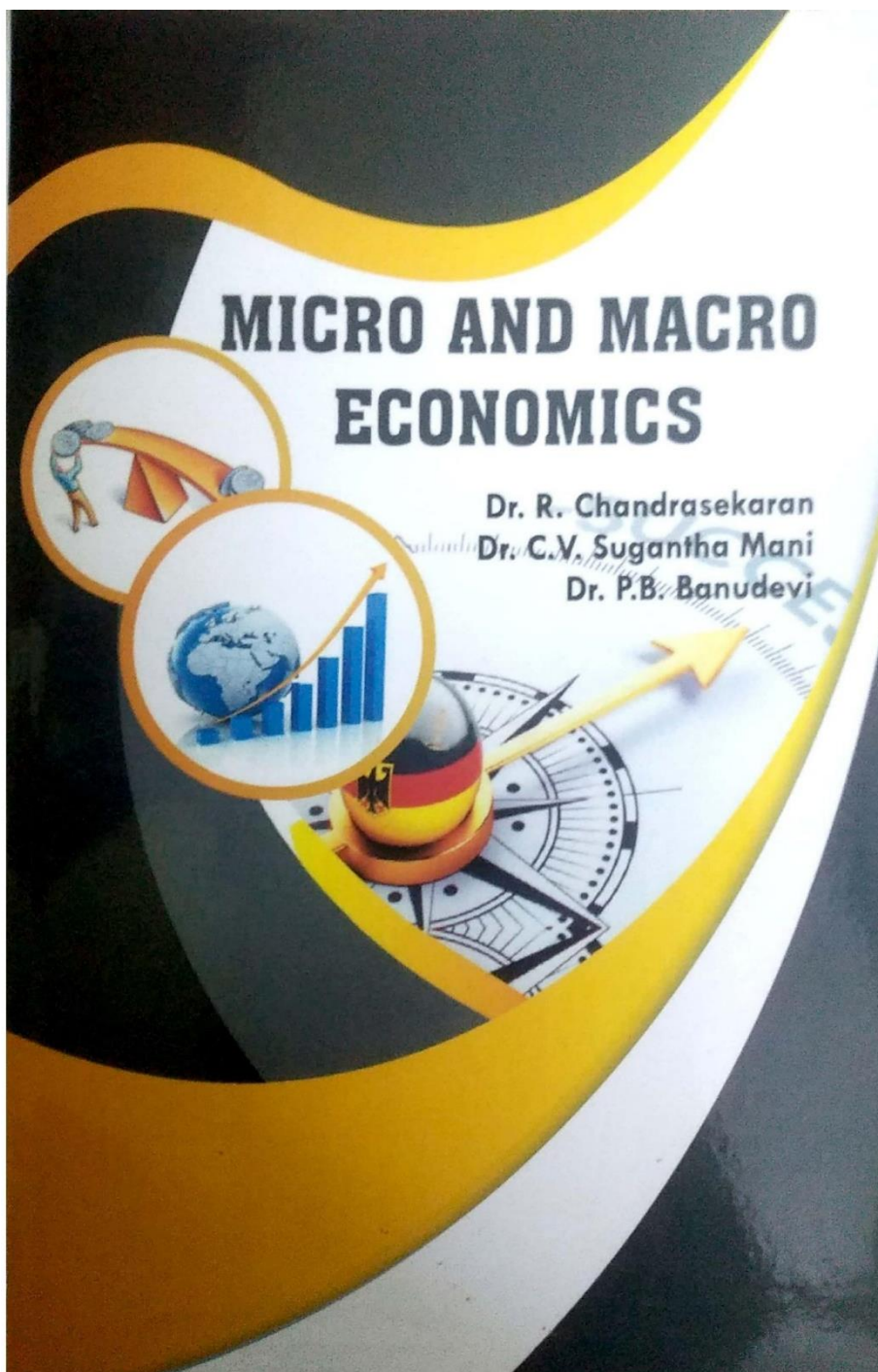
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MICRO AND MACRO ECONOMICS

© Dr. R. Chandrasekaran, Dr. C.V. Sugantha Mani &
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Demand Analysis: Meaning- Definition- Scope of Business Economics- Micro and Macro Economics- Significance of business Economics. Demand determinants – Law of demand and demand curves – Types of demand – Concept of elasticity – Methods of measuring price elasticity of demand.

UNIT II

Supply and Cost Analysis: Supply – Factors affecting supply – Law of supply – Elasticity of supply and types of elasticity of supply – Cost of production – Concepts of Cost and its types. Price and output decisions in various market forms: Determination of Perfect Market and Imperfect Market.

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UNIT IV

Monetary and Fiscal Policy:

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Dr. P.B. BANUDEVI completed her Ph.D Degree in Commerce from Bharathiar University in the year 2011. She has five years of industrial experience and eighteen years in academic teaching and administrative capabilities. Under her guideship three candidates have completed Ph.D and four have completed M.Phil in Commerce. She has published more than 25 papers in journals at National and International level, Conference Proceedings and one book chapter. In the year 2016 she was awarded Best Young Researcher award by VIRA Foundation, Chennai and recipient of Distinguished Professor award from CSI Mumbai Chapter in the year 2018. She recognized as Best research guide and Best HoD of the year 2020 by Dr.N.G.P. Arts and Science College. Presently she is heading Department of Commerce Finance at Dr.N.G.P. Arts and Science College, Coimbatore

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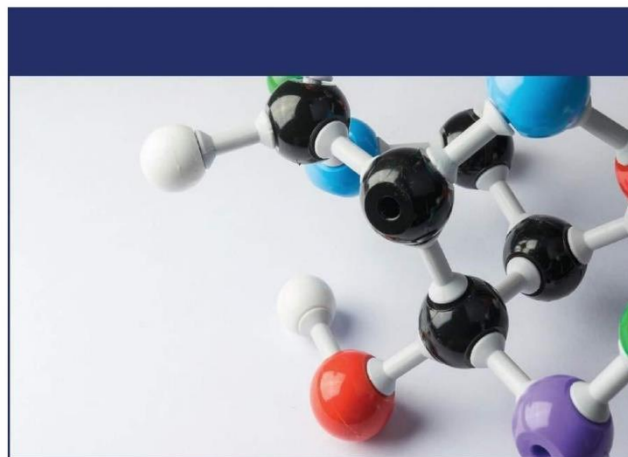
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26. Dr. M.N. Kathiravan

The efficacy of *N. arbortristis* as an anticancer agent for HeLa cell lines and L132 cell lines was studied. In the present study, it was revealed that the minimum effective concentration of ethyl acetate extract of *N. arbortristis* was toxic to 50% HeLa cervical cancer cells was recorded (IC₅₀) at a concentration 4.7 μ g/ml were as 50% human embryonic pulmonary epithelial cells L132 was recorded (IC₅₀) at a concentration 56.35 μ g/ml. The phytoconstituents present in *N. arbortristis* ethyl acetate extract are predicted to be responsible for anticancer activity. The results obtained in the study, it was revealed that the plant extracts possess increased anti-cancer nature against HeLa cell lines compared to L132. In future the *N. arbortristis* can be considered to be an important pharmacophore.



Deepalakshmi J.
Lakshmi R.
Kathiravan M.N.

Mrs. J. Deepalakshmi, working as Assistance Professor in PG & Research Department of Biochemistry, Mohamed Sathak College of Arts and Science, Sholinganallur, Chennai. Mrs. Deepa has more than 15 years of teaching and research experience in life science fields. Her main research area is focused on phytochemical agents for cancer treatment purpose.

In-vitro Cytotoxic Activity of *Nyctanthes arbortristis* Extracts

Cytotoxic Activity of *Nyctanthes arbortristis* Extracts
in HeLa and L132 Cell Line





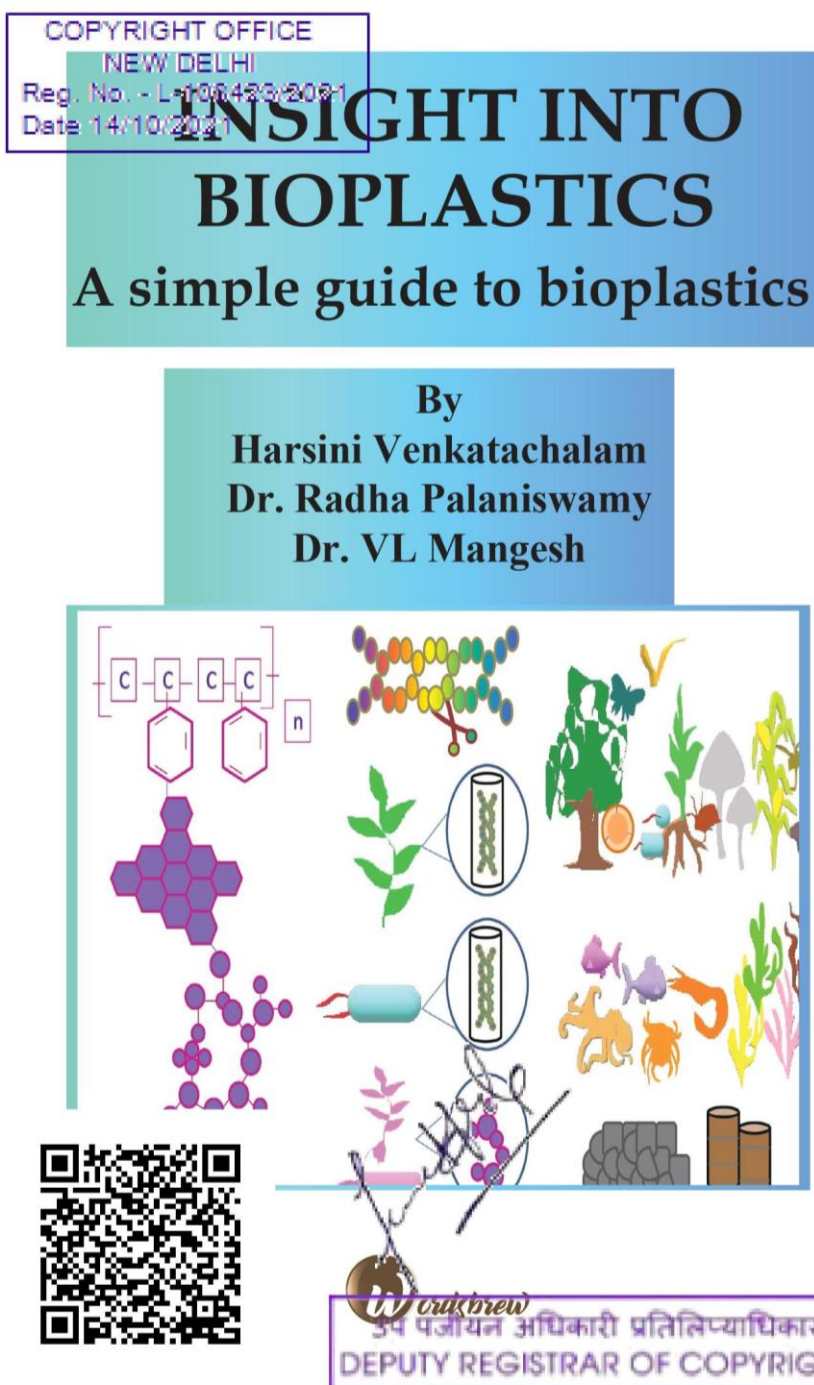
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27. Dr.Radha Palaniswamy



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Dr. Rukha Palaniswamy, Harsini Venkatachalam
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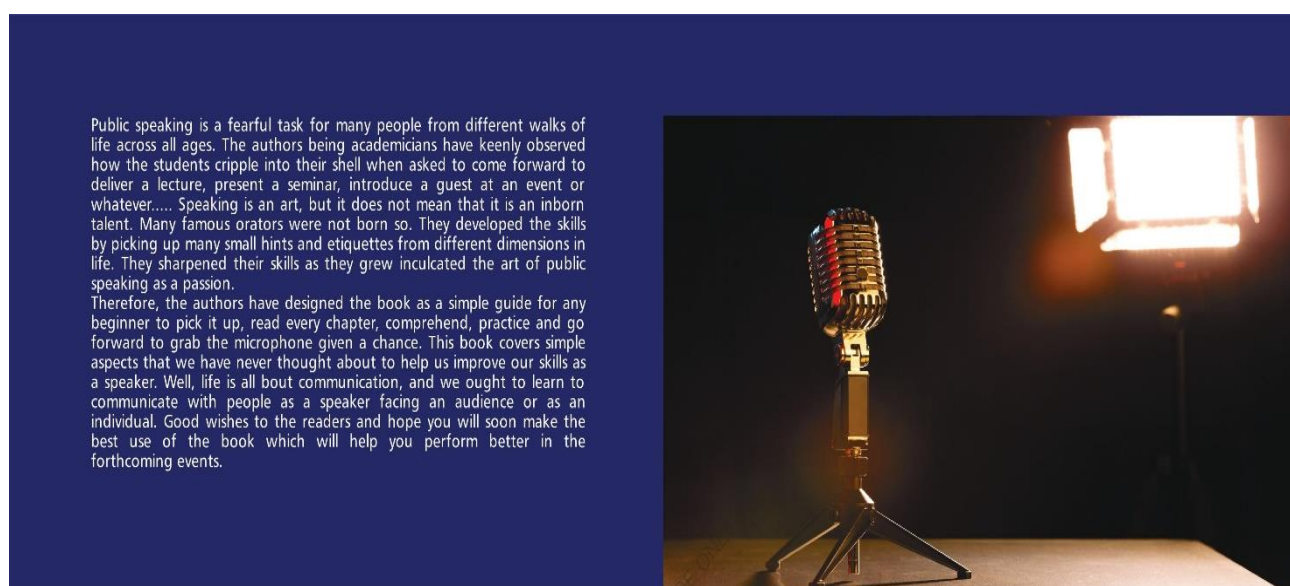
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28. Dr. Radha Palaniswamy & S. Nithya Devi



Public speaking is a fearful task for many people from different walks of life across all ages. The authors being academicians have keenly observed how the students crumble into their shell when asked to come forward to deliver a lecture, present a seminar, introduce a guest at an event or whatever.... Speaking is an art, but it does not mean that it is an inborn talent. Many famous orators were not born so. They developed the skills by picking up many small hints and etiquettes from different dimensions in life. They sharpened their skills as they grew inculcated the art of public speaking as a passion. Therefore, the authors have designed the book as a simple guide for any beginner to pick it up, read every chapter, comprehend, practice and go forward to grab the microphone given a chance. This book covers simple aspects that we have never thought about to help us improve our skills as a speaker. Well, life is all about communication, and we ought to learn to communicate with people as a speaker facing an audience or as an individual. Good wishes to the readers and hope you will soon make the best use of the book which will help you perform better in the forthcoming events.

Radha Palaniswamy
Nithya Devi S.

Dr. Radha Palaniswamy, though a biotechnologist has a passion for language, the art of speaking and has been delivering several public lectures. Co author, Ms. Nithya Devi S. being an English professor is very particular about how students present themselves in the public as a speaker.

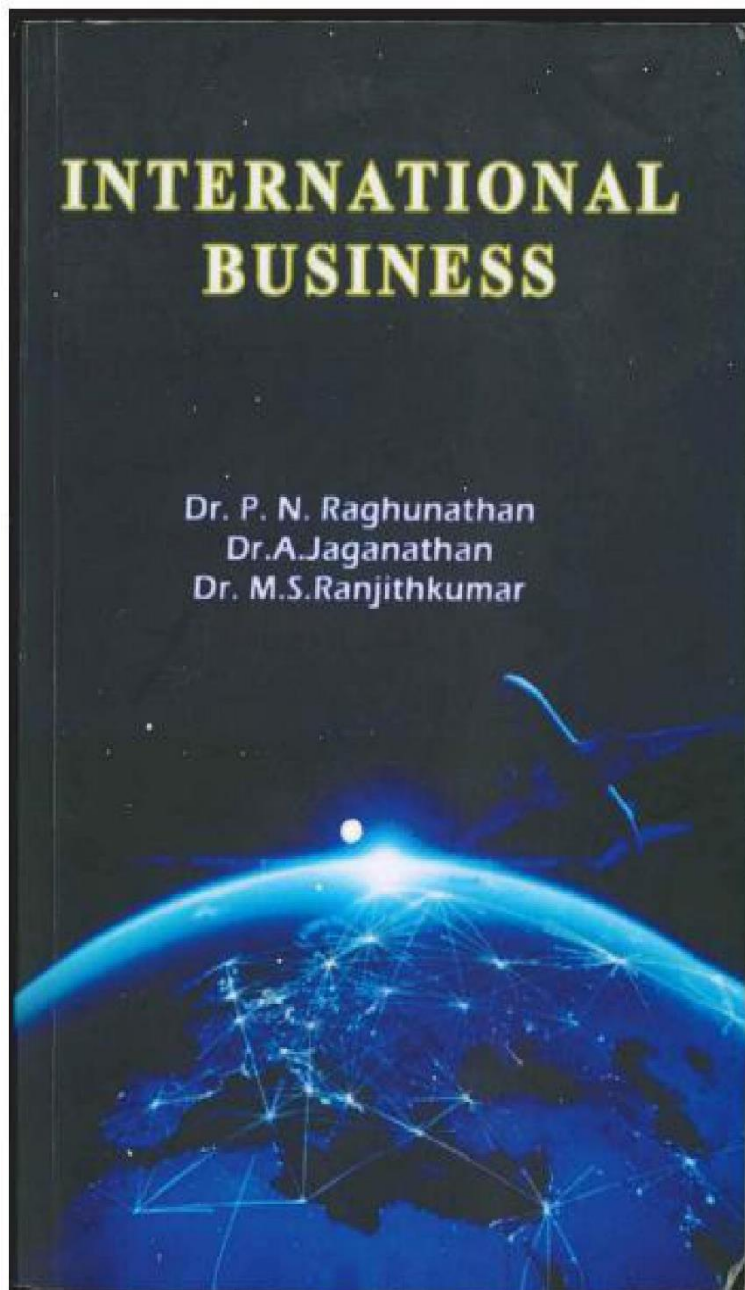
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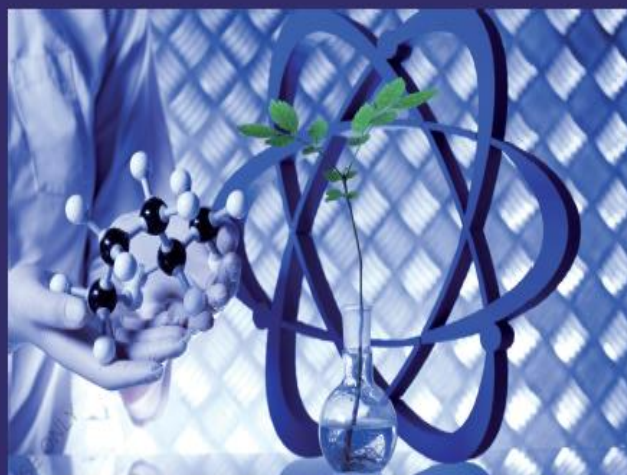
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30.Selvaraj Shyamsivappan

It covers the topics of general introduction on organic synthesis, heterocyclic compounds, quinoline heterocycles, multicomponent reactions, and microwave reactions. It describes a synthetic method for a new class of pyrano quinoline derivatives by green chemistry approach, structure characterization of the synthesized compounds by spectroscopic techniques, and antibacterial study of the synthesized compounds.



Shyamsivappan Selvaraj
Arasakumar Thangaraj
Mohan Palathurai Subramaniam



Currently I am pursuing my Ph.D. in Organic Chemistry at Bharathiar University in India. I am interested in the synthesis of biologically active compounds, and my research with Ph.D. advisor Dr. P.S. Mohan has concentrated on the synthesis of biologically active quinoline fused heterocycles via highly reactive intermediates.

Synthesis of New Pyrano Quinoline Derivatives for Antibacterial Study



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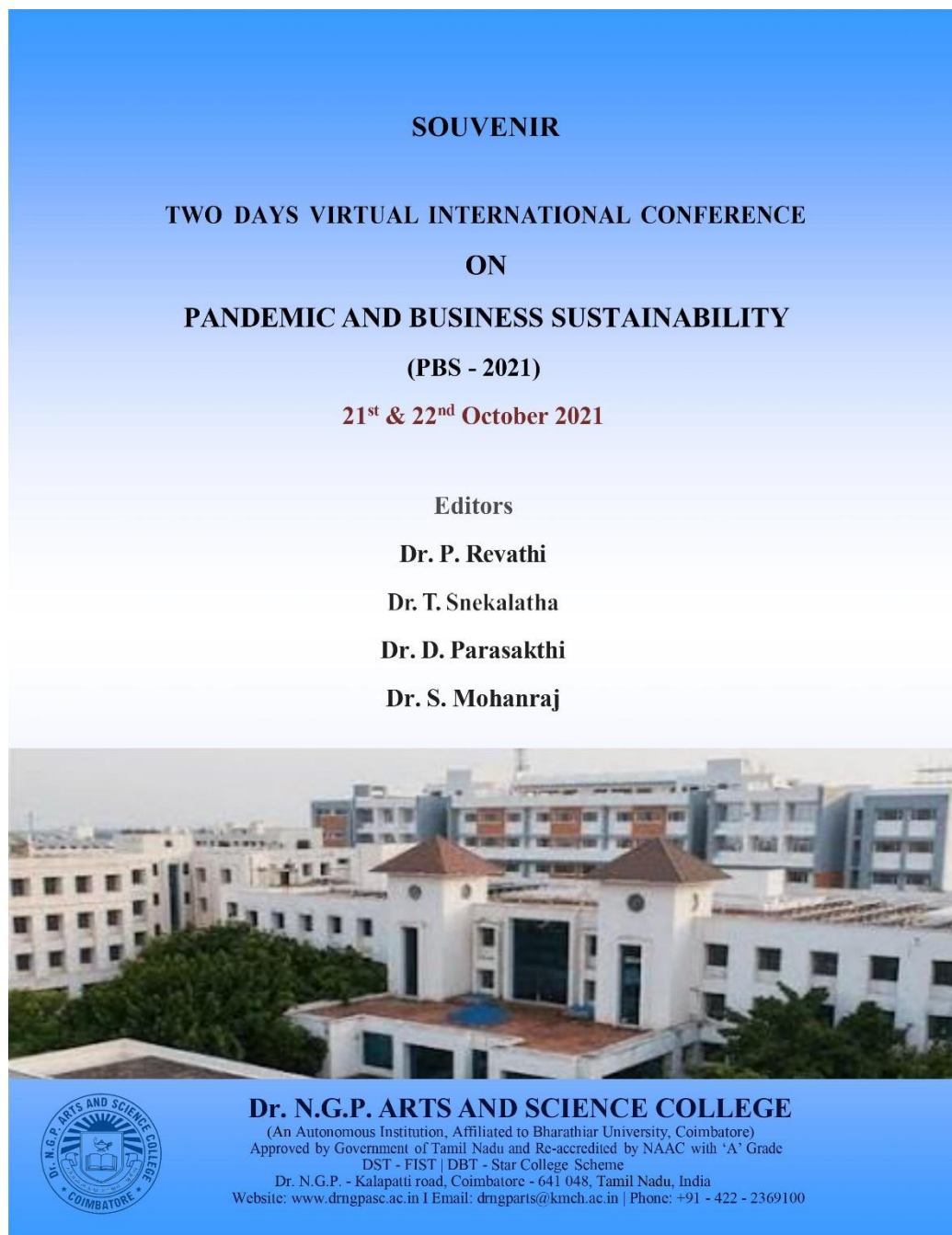
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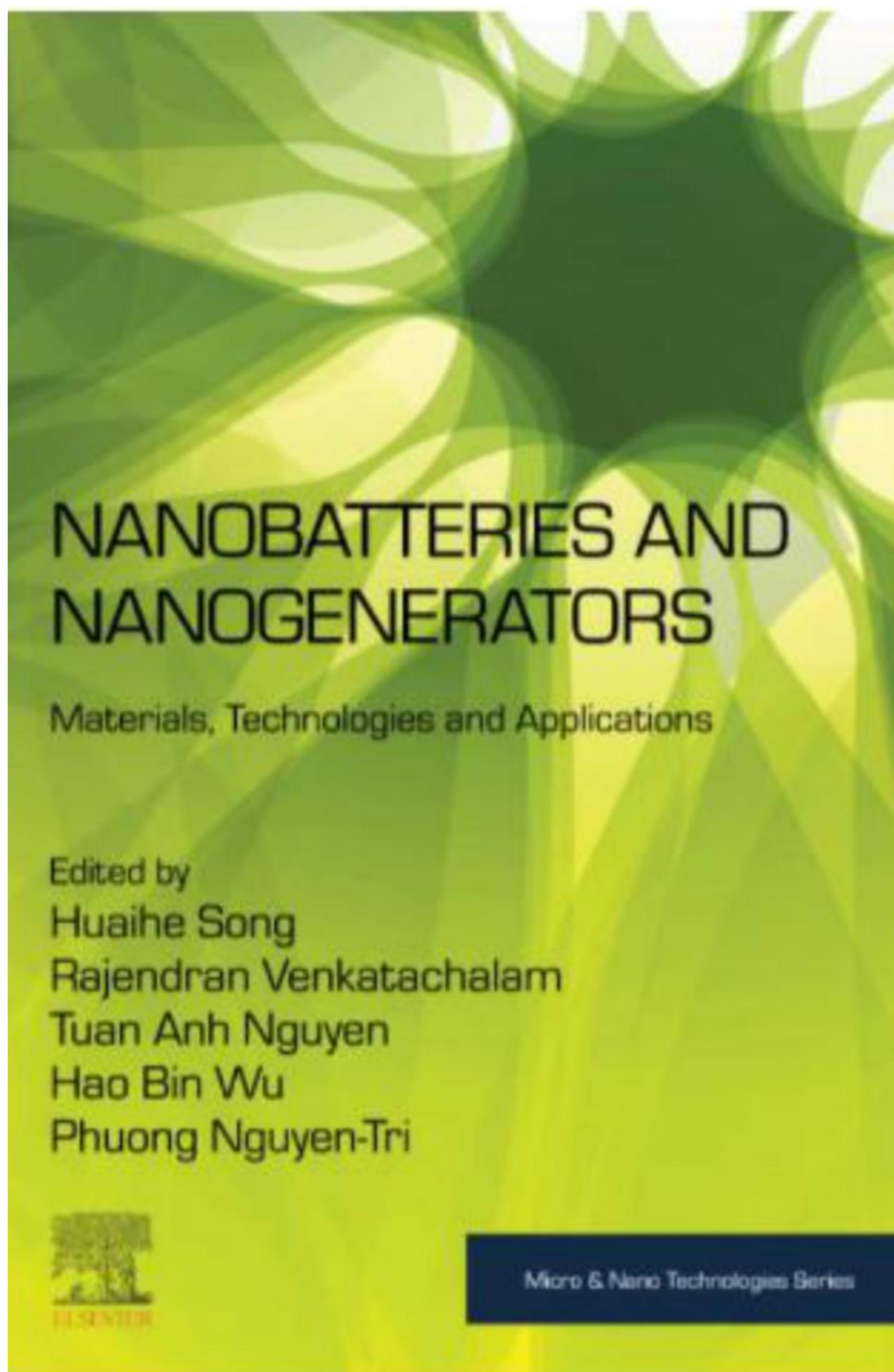
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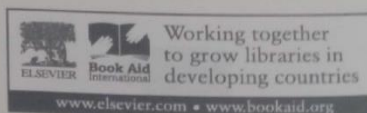
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NANOBATTERIES AND NANOGENERATORS

Materials, Technologies and
Applications

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NANOBATTERIES AND NANOGENERATORS

Materials, Technologies and Applications

Edited by Huihe Song, Rajendran Venkatachalam,

Tuan Anh Nguyen, Hao Bin Wu and Phuong Nguyen-Tri

Nanobatteries and Nanogenerators: Materials, Technologies, and Applications Nanobatteries and Nanogenerators: Materials, Technologies, and Applications addresses the fundamental design concepts and promising applications of nanobatteries and nanogenerators. Particular application areas include healthcare, biomedical, smart nanodevices, and nanosensors, which may require new electric power sources, including battery on a chip, self-powered ability, and nanostructured electric power sources. In this regard, nanobatteries and nanogenerators represent the next generation of electric power.

The term "nanobattery" can refer not only to the nanosized battery but also to the uses of nanotechnology in a macrosized battery for enhancing its performance and lifetime. Nanobatteries can offer many advantages over the traditional battery, including higher power density, shorter charging time, and longer shelf life.

Nanogenerators refer to the use of nanosized devices and materials to convert mechanical, thermal, and light-based energies into electricity. Similar to traditional battery, in nanobatteries, the chemical energy is converted into electricity. Besides, hybridization between battery/nanobattery and nanogenerators can convert directly the natural energy to chemical energy and can also deliver a sustainable power supply for long-lasting operation.

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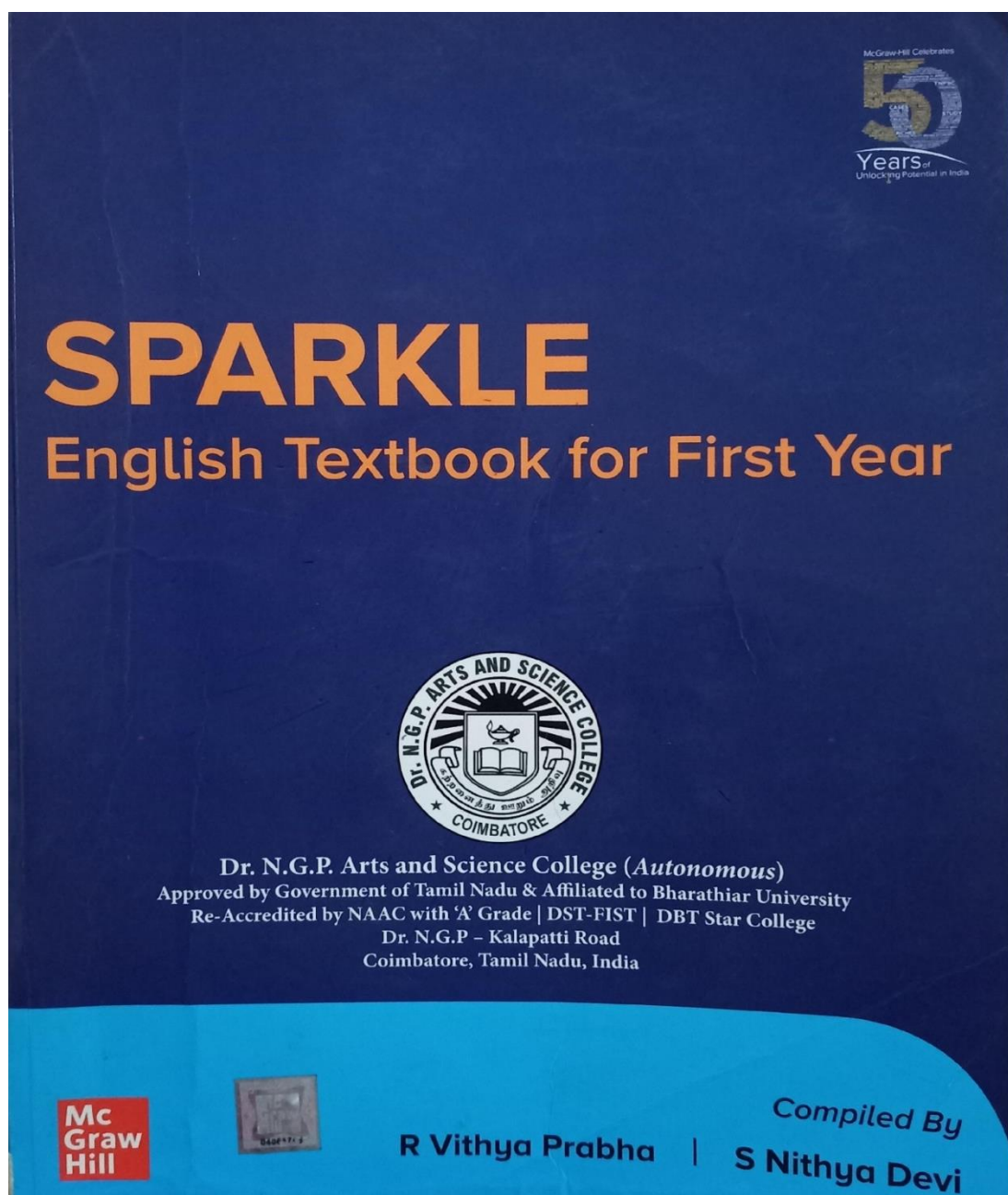


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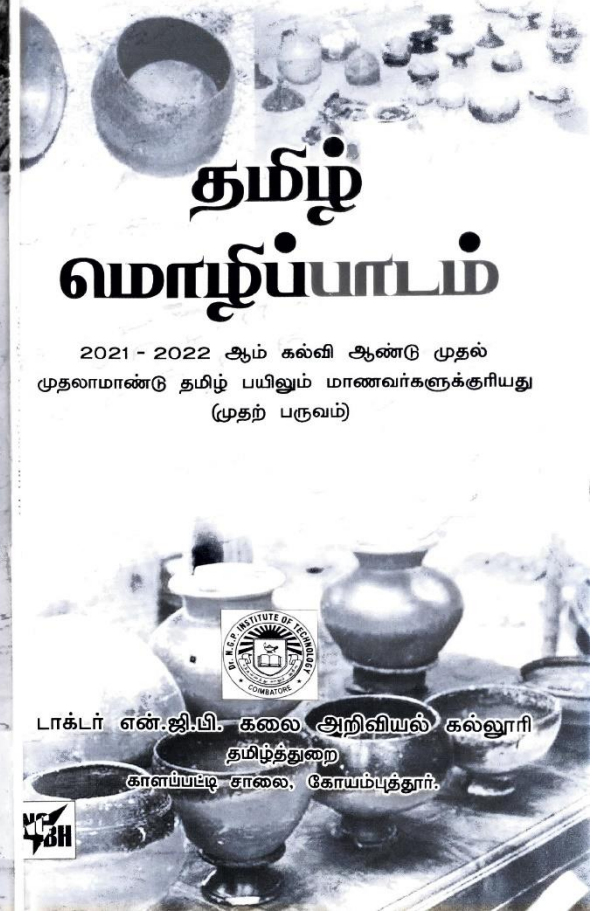
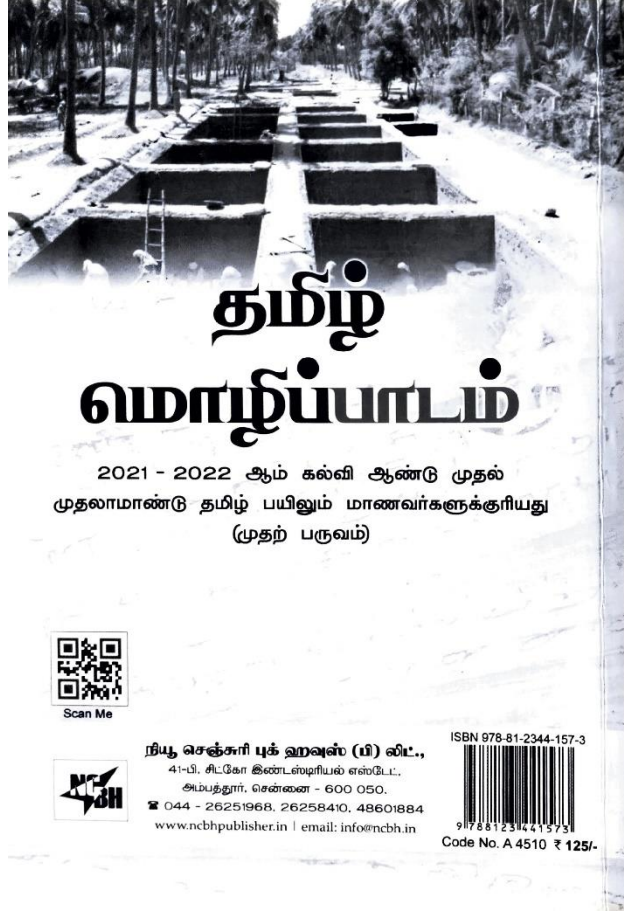
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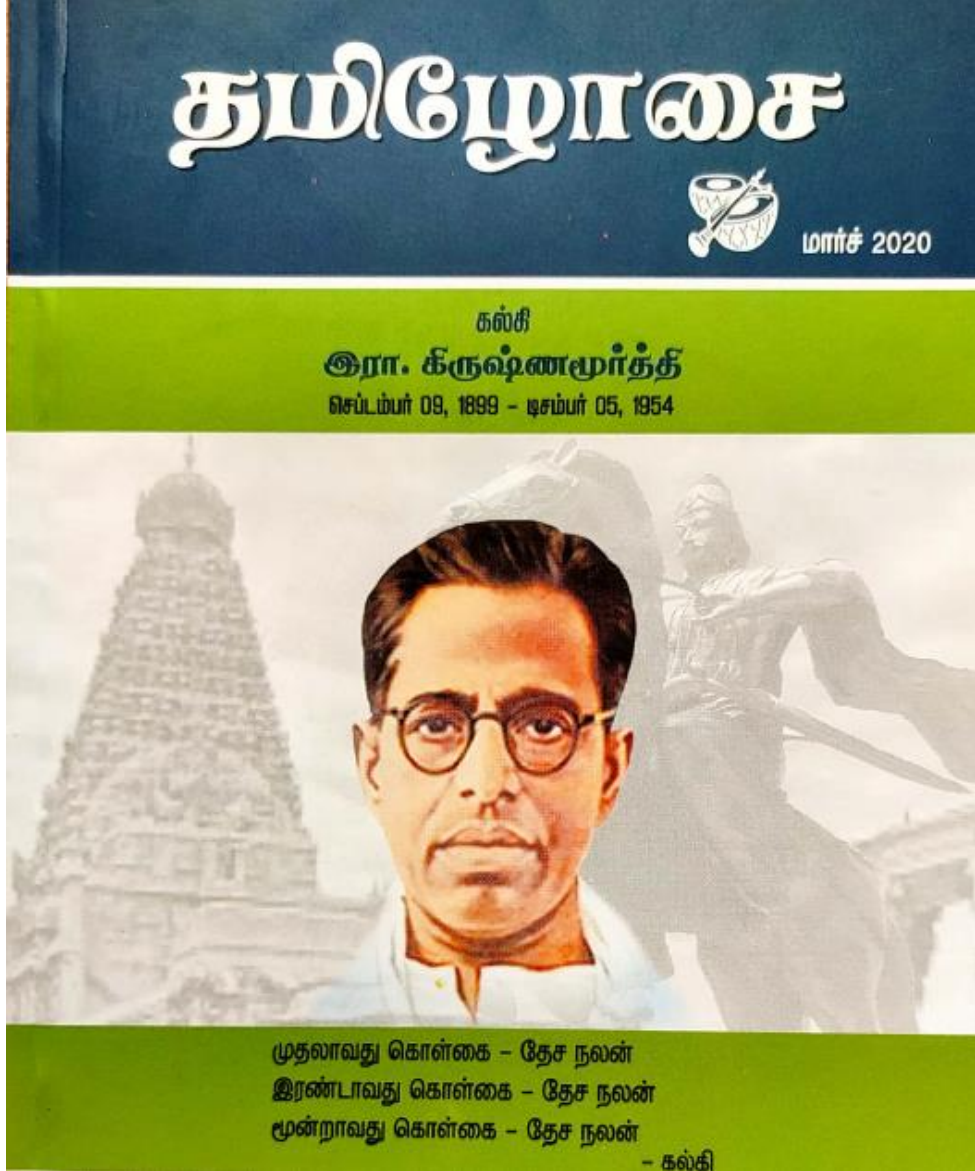
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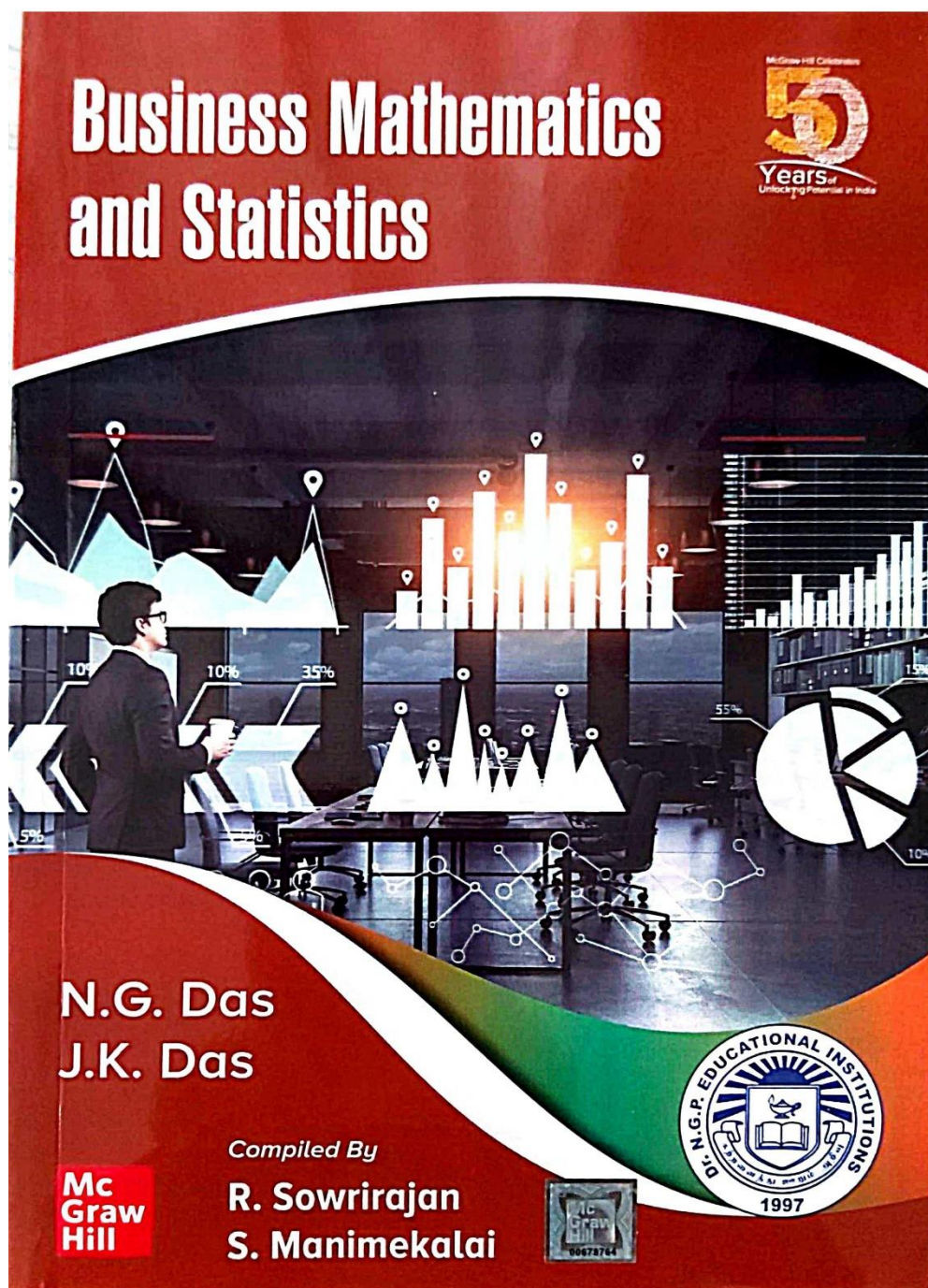
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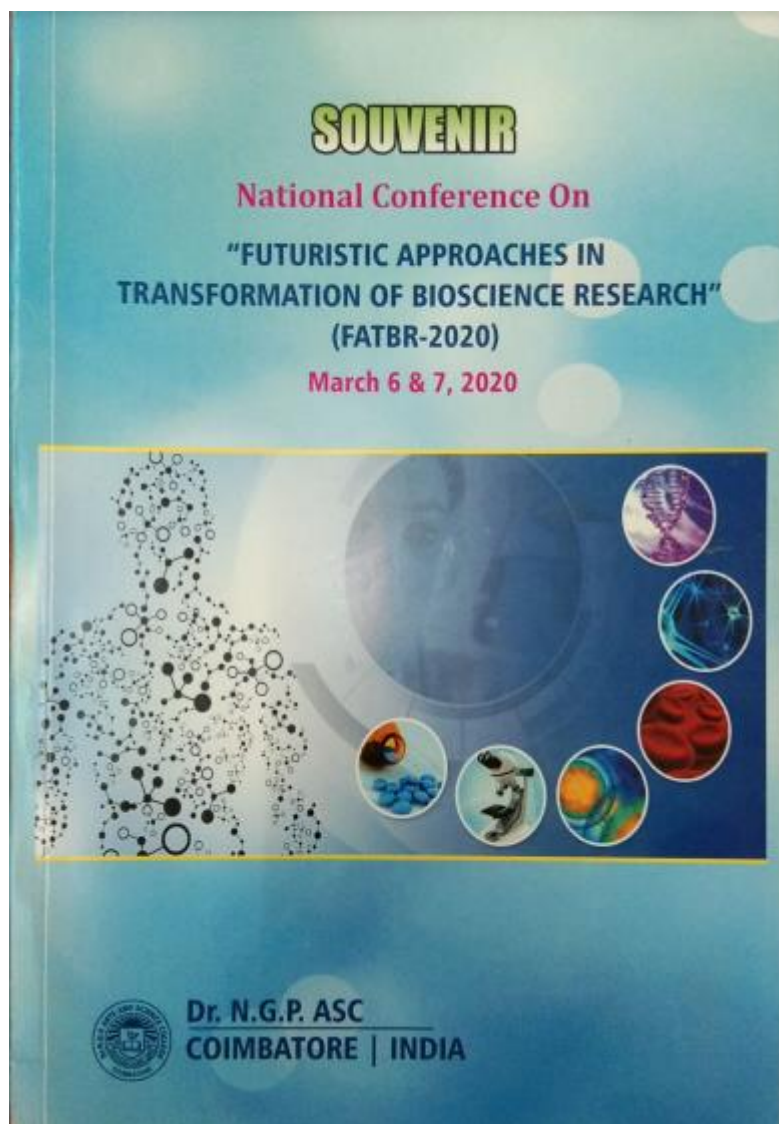


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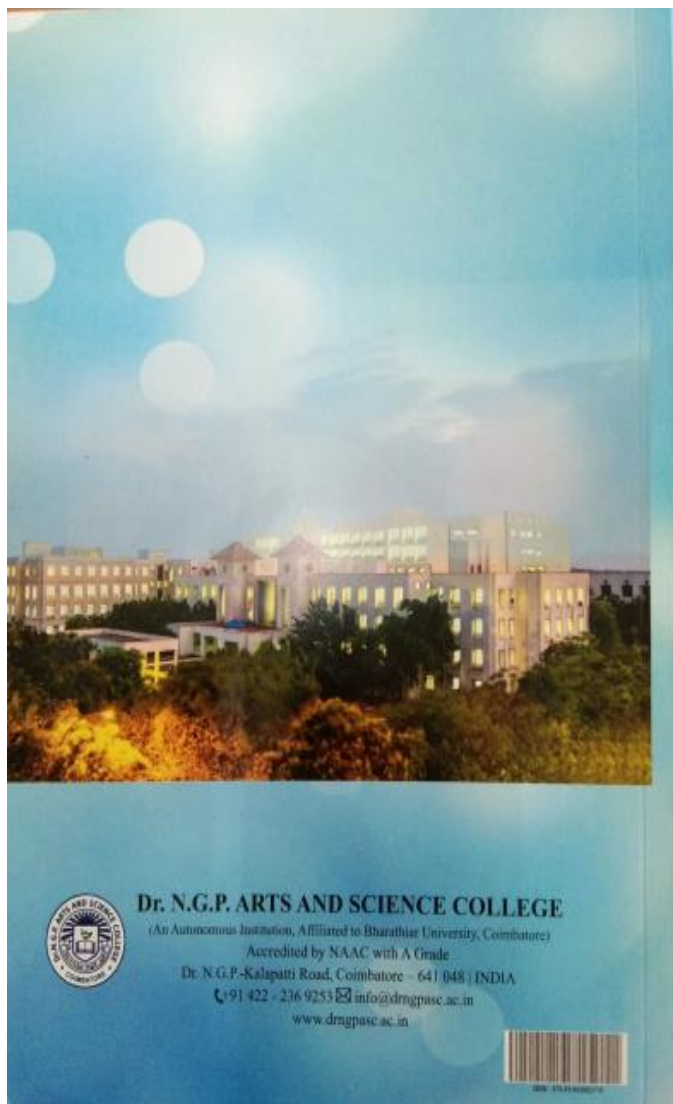


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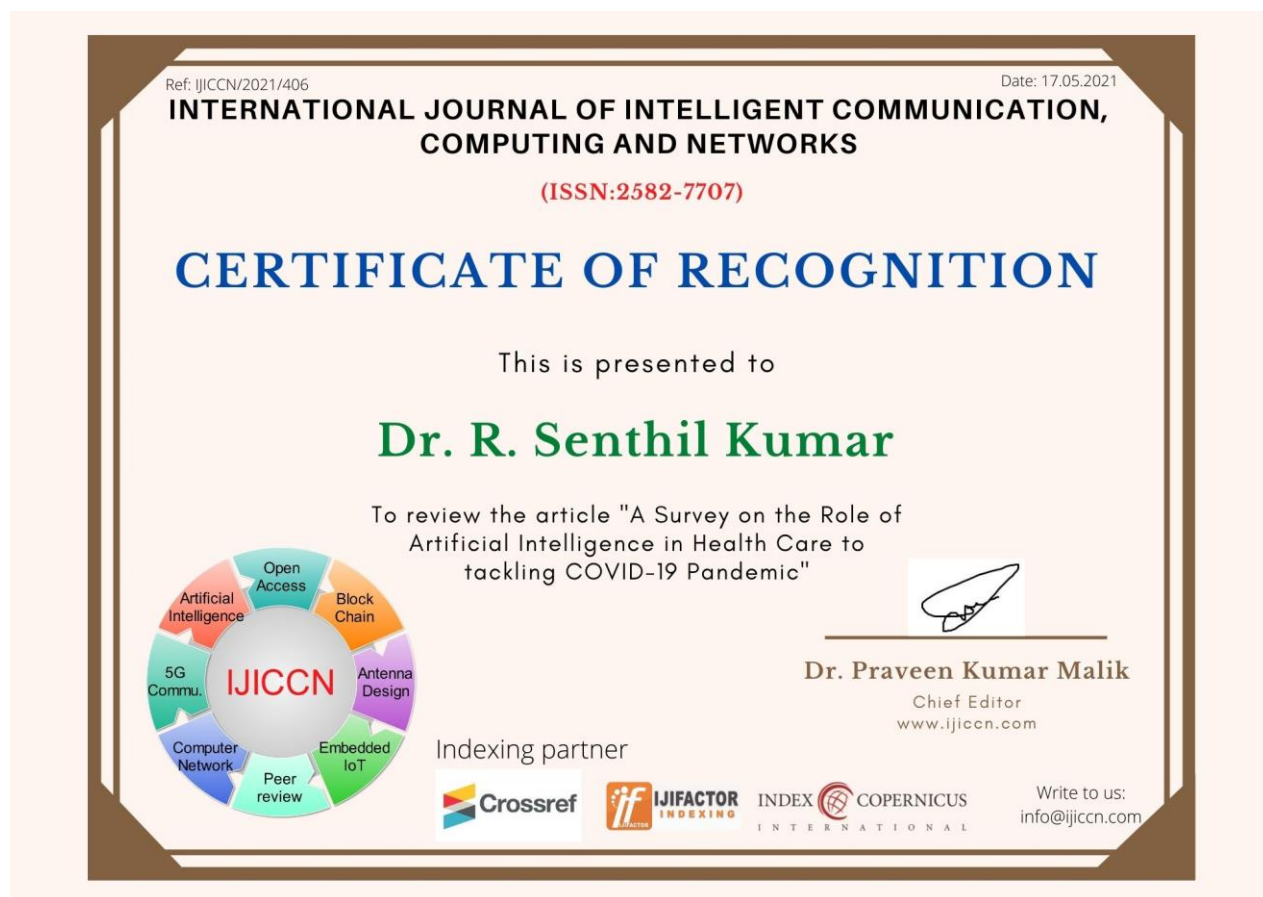
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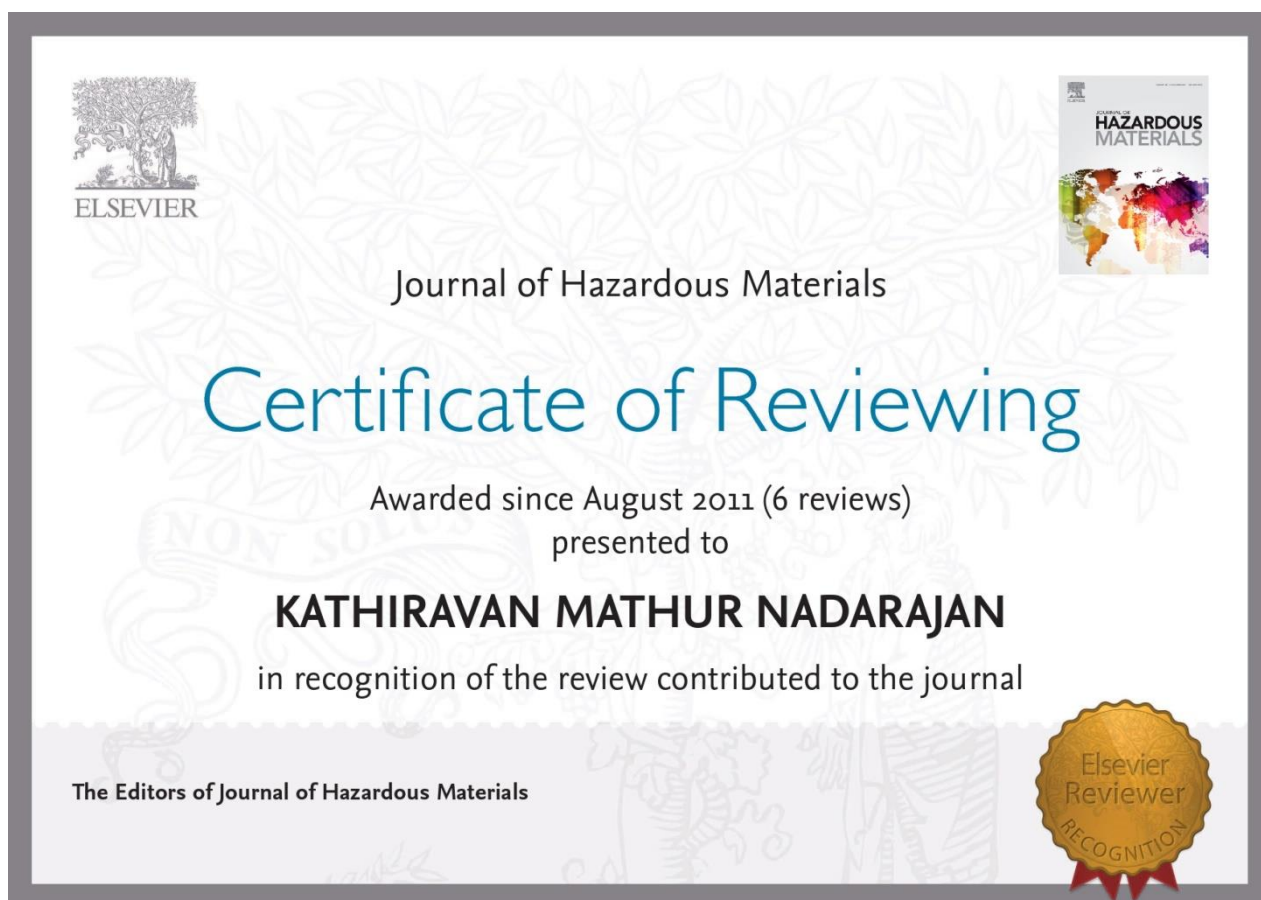
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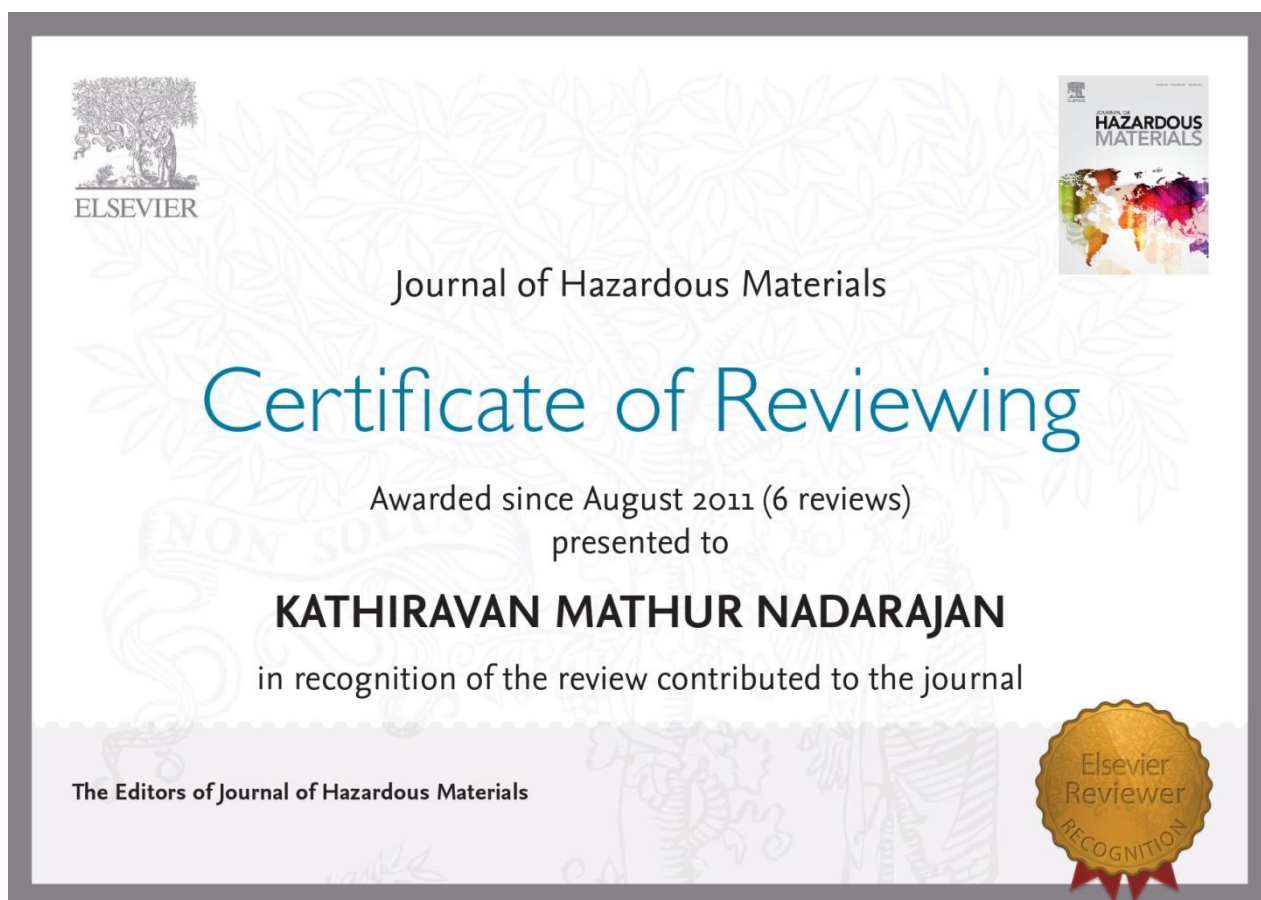
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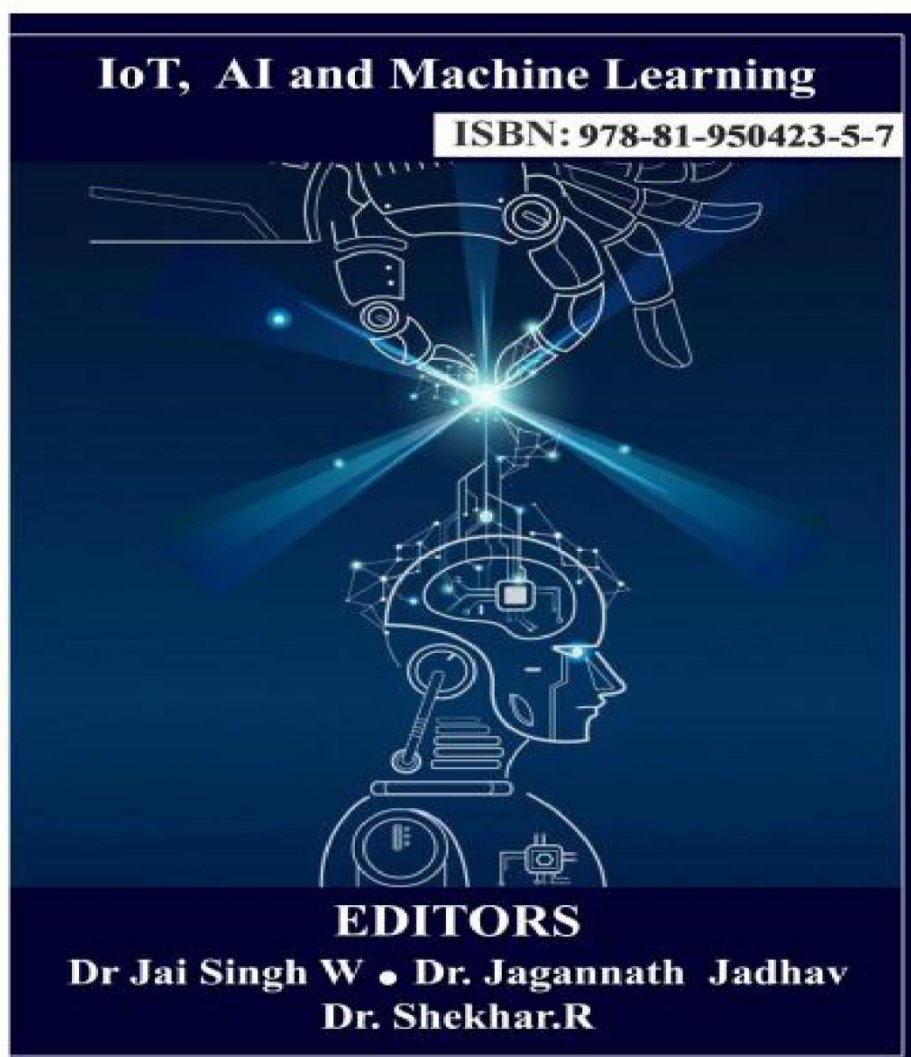
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Book Chapters

1. Dr.A.Nirmala & Dr. M. Savithri



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IOT, AI AND MACHINE LEARNING

SECURITY ISSUES AND CHALLENGES IN INTERNET OF THINGS (IOT)

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Abstract: Internet of Things is revolutionizing the current world of technology. The usage of IoT ranges from household devices, health care industry, transport, entertainment, government sector etc. The enormous growth in the development of IoT has provided a large opportunity along with numerous challenges. The number of devices that are connected to the internet has been increasing enormously which lead to the problems related to security. In this paper the various challenges involved in the IoT and the security issues faced by the IoT devices and the data stored using the IoT etc are discussed along with various measures taken to prevent the security issues.

1 Introduction

Internet of Things (IoT) is becoming more common technology and it is making dramatic changes in the day-to-day life of the people. It helps to improve the efficiency of work in various forms in all kind of activities. IoT is also used to optimize the process using the data analytics technique. IoT is used to gather the information from various interconnected objects, devices, etc which will interact and share the information such that aim of the application created in various domains are attained. Application of IoT has been extended to various domains like healthcare, transport, production of energy, health care, and control of house hold appliance, security of house and office, manufacturing department and various other things that interact through the internet and execute with the interaction or involvement of humans. Identity Management approach is used in joining the various IoT devices and identify the group of devices. IP address is used to define a region in IoT the entities inside the region can be identified using a specific ID. The invent of IoT has

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2. Dr.A.Nirmala & Dr. R.Senthilkumar



IOT, AI AND MACHINE LEARNING

LoRaWAN for SMART AGRICULTURING

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Abstract: Among the various technological developments of this century, the term IoT (Internet of Things) is one stating to the rapid growth of digital devices that can ably communicate and interact with others over the network/internet worldwide and is used in monitoring and controlling the field works from remote areas, i.e., it is even made things possible to control and monitor the processes from distant places as information is continuously fed into applications and data storage of IoT devices. IoT enabled applications with these incorporated technologies have spread world-wide in different areas like smart cities, smart homes, smart agriculture and farming, smart marketing, security and emergencies, automotive, eHealth system, construction, space, etc., and they were identified to be intelligent applications.

From a very long history of this world, it is acknowledged to be agriculture as the mainstay of the living human beings for their survival. Agriculture is believed to be the foremost of all the existing occupations in this universe, since producing food to feed the people for their living is essentially important than any other. It is also playing the most significant part of economy, providing major employment in the country and supports in the development of the national growth and promoting the life of people. Agriculture provides various essential needs like food, fuel, furniture, raw materials, a fresh environment, and abundant sustenance for driving through the starvation of the people. But nowadays farming is getting more difficult in both production and marketing areas of agricultural products considering so many parameters in to account like weather, soil conditions, adequacy of water, fulfilment of the labour need, machineries, and so on.

Agricultural activities can be classified into different segments starting from soil preparing, seeding, watering, fertilizing,



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IoT, AI and Machine Learning

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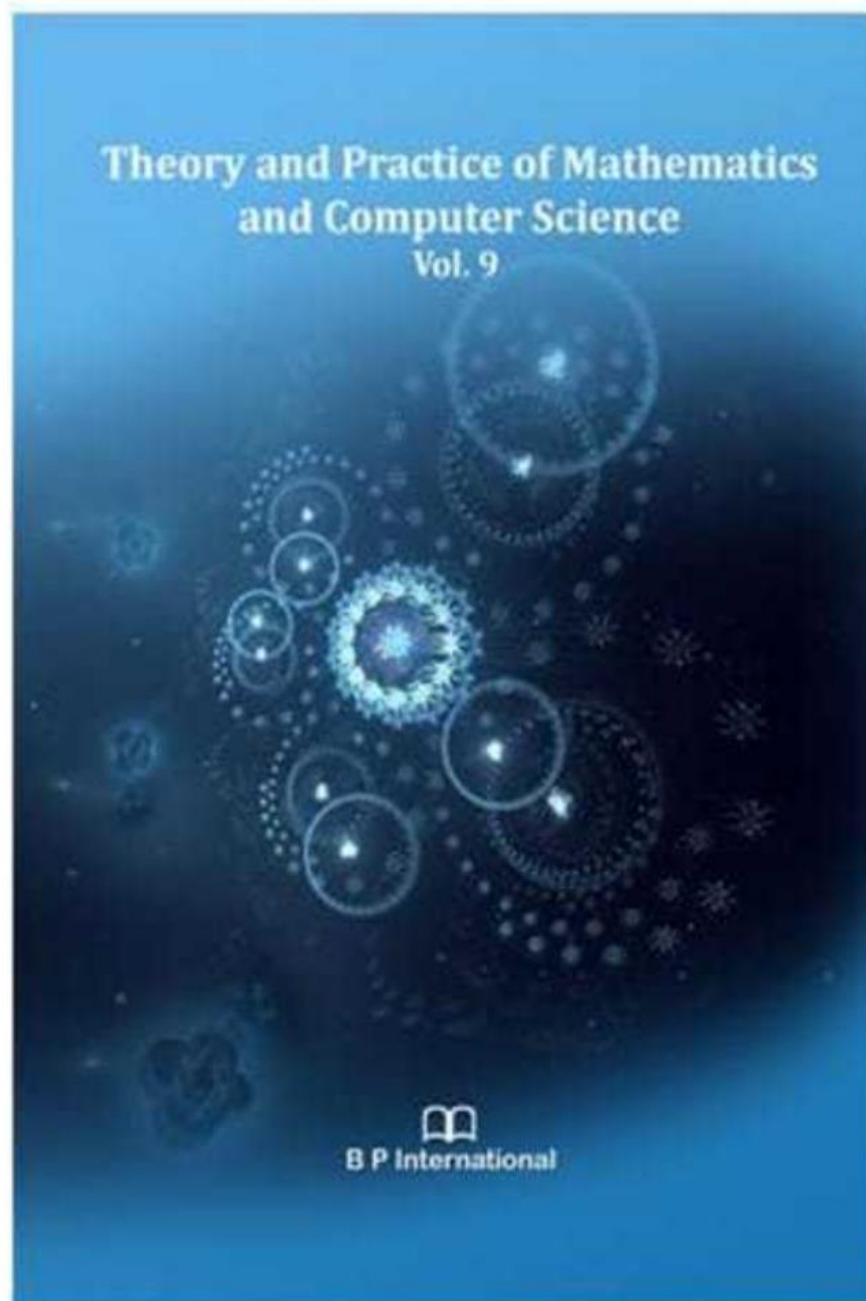


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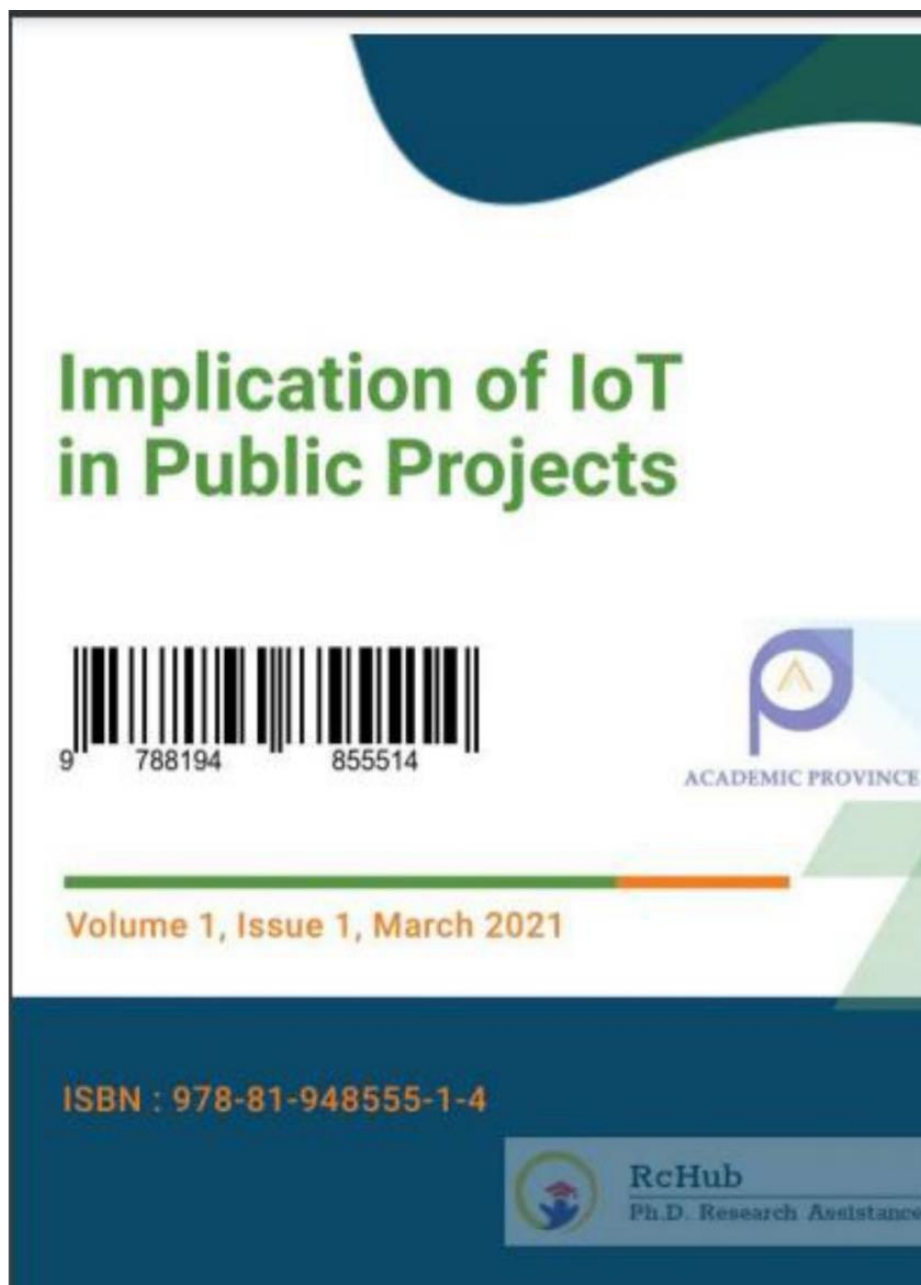
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A Study on the applications of Drones in Smart Farming

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Abstract-Nowadays, the drones or an Unmanned Aerial Vehicles (UAV's) became the part and parcel of our lives. The People of the Internet of things (IoT) era, will make use of smart things to do a smart application. This paper deals with the application of Drones or UAV's in a smart farming. The Drones (UAV's) assists the farmers for doing their agriculture in a smart way. The drones can be used in a lot applications like military, civilian, search and rescue, monitoring etc. The UAV's are unmanned aerial vehicles; humans can control or activate it by using the remotes from the ground. It may be a small land or the large acres of land these drones will help the farmers to monitor their crops, land, cattle fields and all the thing in their farmhouse. This paper gives the brief study of the applications of the agricultural drones and different types of the drones used for doing the agriculture in a smart way. Some of the major applications of the drones in farming are monitoring the crop field, identifying the plant damage after the plantation, soil analysis and cattle field monitoring.

Keywords-Unmanned Aerial Vehicles (UAV's), agriculture, smart farming

1. Introduction

Internet of Things (IoT) becomes a part and parcel of the human lives. IoT has been applied in various applications including military, Civilian, agriculture, industries, foundries etc., The use of drones in almost every sector of the economy is growing fast, but drone usage in the agricultural industry is booming. a drone is a flying robot that can be remotely controlled or fly autonomously through software-controlled flight plans in their fixed systems, working in conjunction with onboard sensors and GPS. While drones serve a spread of purposes, admire recreational, photography, industrial associated military, their 2 basic functions are flight and navigation. Drones need a controller, that employed remotely by an operator to launch, navigate and land it. Controllers communicate with the drone victimization radio waves, together with wi-fi. Smart Farming is focussed on the utilization of knowledge nonheritable through varied sources (historical, geographical and instrumental) within the management of farm activities. Technologically advanced doesn't primarily mean that it's a sensible system. Smart systems differentiate themselves through their ability to record the info and add up out of it.[1][2]



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5. Dr.V.P. Amuthanayaki

COVID - 19 PANDEMIC: ISSUES ON SUSTAINABLE DEVELOPMENT GOALS

Editors

Dr. R. Radhika Devi

Dr. C. Subbulakshmi

In Collaboration with



Women's Studies Centre

Madurai Kamaraj University, Madurai



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COVID - 19 Pandemic: Issues on Sustainable Development Goals

COVID-19 PANDEMIC: ISSUES ON SUSTAINABLE DEVELOPMENT GOALS

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Abstract

As a main virus outbreak within the twenty first century, the Coronavirus sickness 2019 (COVID-19) pandemic has led to unheard of hazards to mental health globally. While psychological support is being provided to patients and healthcare people, most of the people's intellectual fitness requires significant attention as nicely. The plague of coronavirus has had a devastating effect on the economy, the livelihoods, and the physical and mental well-being of people all over the world. Worldwide, the public is informed of the effects of Covid-19 infection and the steps you must take to prevent coronavirus exposure and to control the symptoms of COVID-19 if they occur. However, the effects of this epidemic on mental health have focused on understanding the pathology, clinical features, transmission patterns, and outbreak management of COVID - 19, with very few concerns expressed about the effects on human mental health and strategies to prevent stigma. Human behavior can significantly affect the epidemic by changing the severity, transmission, flow of disease, and outcomes. The current situation requires public awareness, which can help to address this crisis. This visual document provides a comprehensive overview of the effects of the COVID-19 outbreak on human mental health. This systematic overview targets to synthesize extant literature that reviews at the effects of COVID-19 on psychological results of the general population and its associated change factors.

Keywords: COVID-19, mental health, pandemic, Sustainable development goals, Strategies.

Introduction

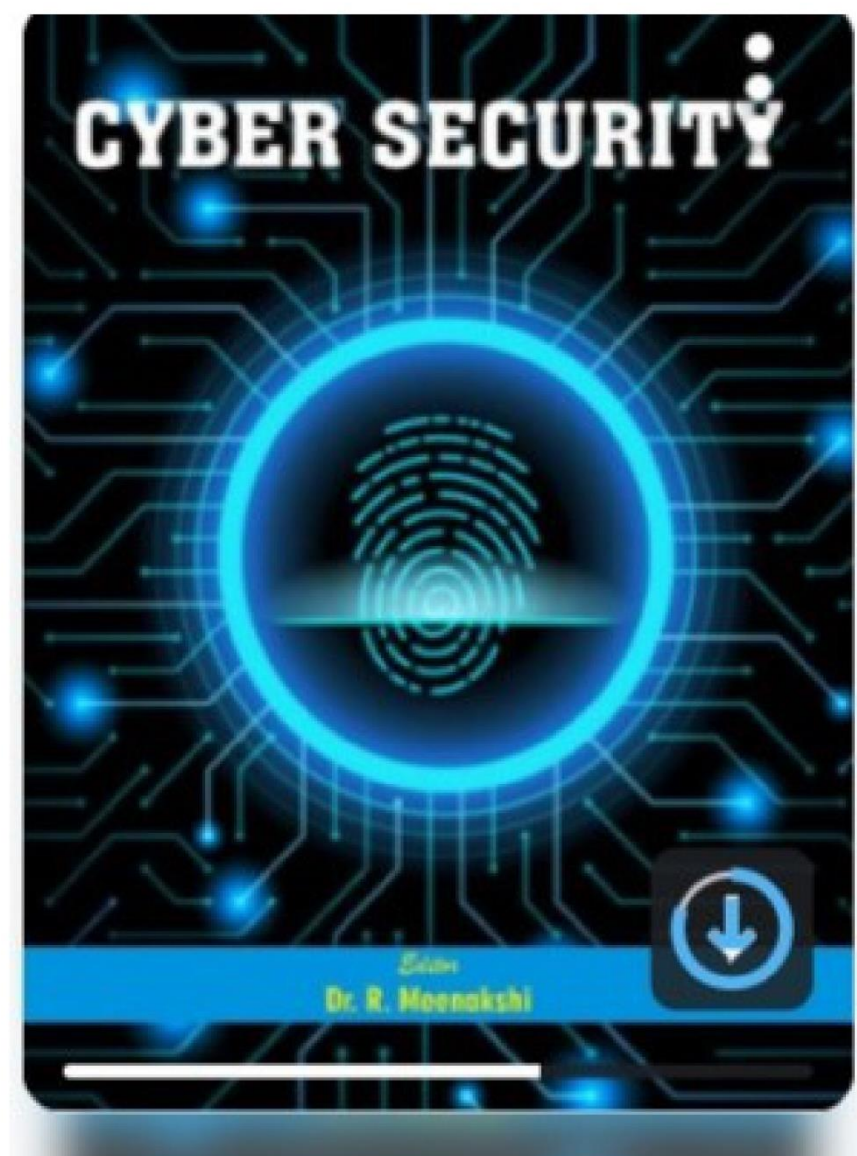
The goals of Sustainable Development are inspiring and seek outstanding prominence. Among other things, they collectively urge the world to achieve rapid development, sustainable growth, fair distribution, climate action, gender equality and powerful institutions. If we can achieve the sustainable development goals, we can truly live in a better world. Covid-19 has clearly made it more difficult to achieve the sustainable development goals. With economic recessions, unemployment, deaths and increasing poverty many of the improvements we saw before the pandemic have been reversed. Its miles now clear that financial, social and environmental implementation efforts want to be reintegrated and destiny sustainable development dreams want to be through of as dimensions of the sustainable improvement paradigm.

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EMERGING TRENDS IN CYBER CRIME AND SAFETY

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Abstract

Computers and internet plays an important role in ourday-to-day life. They may be being utilized by people and societies to make smart living. They use them for storing records, processing data, sending and receiving messages, communications, controlling machines, typing, modifying, designing, drawing, and nearly all aspects of lifestyles. Cybercrime also called laptop crime, the use of a laptop as an instrument to similarly unlawful ends, along with committing fraud, trafficking in baby pornography and highbrow property, stealing identities, or violating privacy. This paper focuses primarily on cyber safety worries related to the brand new era. It additionally concentrates on the new technologies for cyber protection, ethics and developments that effect cyber protection.

Keywords: Cyber security, cybercrime, android apps Social networks.

Introduction

Today due to the modern lifestyles style people have joined technology existence and using extra technology for buying as well as monetary transactions in their cyber area. In addition, the heavy use and growth of social media, online crime or cybercrime has increased. The data security has become one of today's main challenges. The technique of digitization in all factors of human lifestyles, like healthcare, training, commercial enterprise, and many others, has regularly brought about the garage of all sorts of data, consisting of sensitive facts. Protection is the system of protecting the digitized information from robbery or from physical damage whilst maintaining the confidentiality and availability of information however as generation is growing swiftly, the cybercrime rate also will increase both in variety and complexity.

Cyber-crime refers to all the activities achieved with criminal purpose in cyberspace'. Such crime involves an facts technology infrastructure, along with unauthorized access, unlawful interception by way of technical means of transmissions of computer information to, from or inside a personal computer machine, facts interference with the aid of unauthorized destructive, deletion, deterioration, alteration or suppression of data, systems interference via interfering with the functioning of a device with inputting, transmitting, unfavourable, deleting, deteriorating, changing or suppressing computer records, misuse of gadgets, forgery (identification robbery), and electronic fraud. In the e-Age, 'Crime' has prolonged itself beyond bodily assault or intellectual torture; now it also affects our e-life. Method of our lifestyles and dwelling inside the cyber world. Each one the people is part of this cyber global, at once or in a roundabout way when you consider

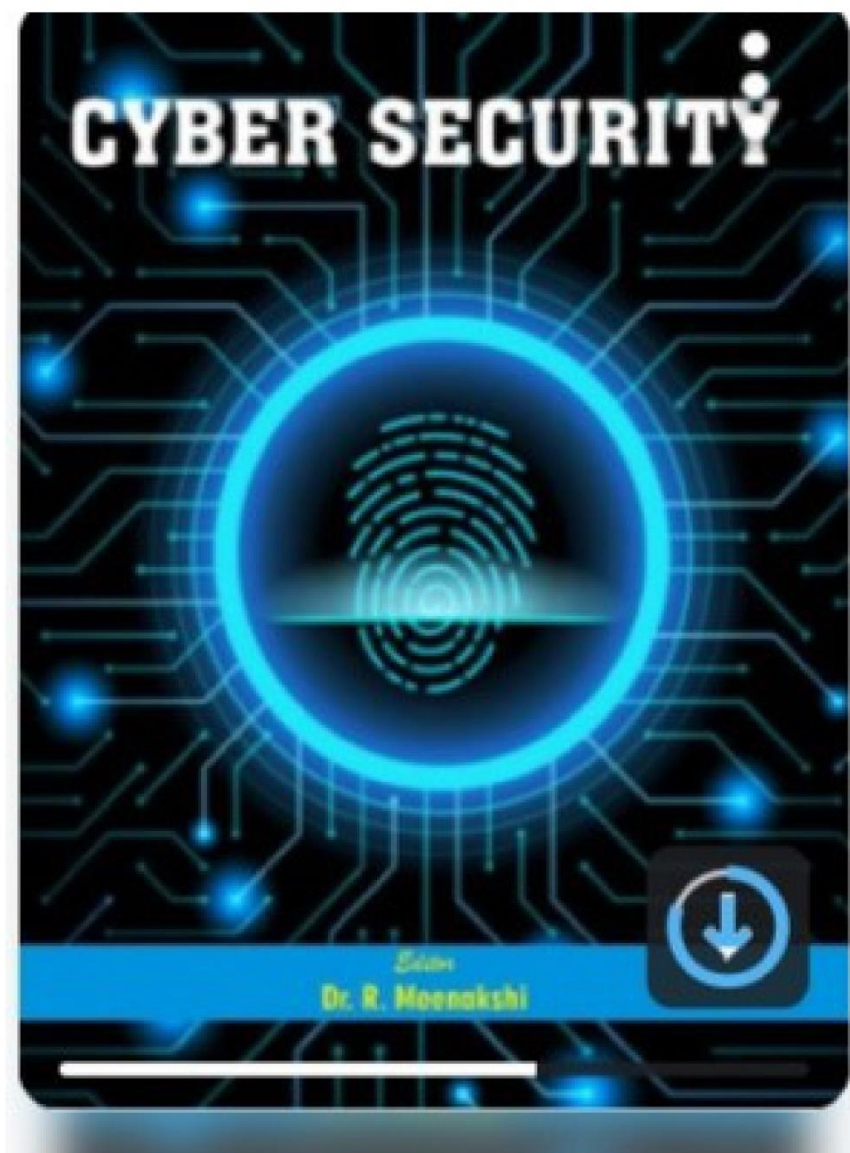
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7. Dr.S. Dharchana





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CYBER SECURITY

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Cyber Security

MOBILE ADDICTION

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Abstract

The advancement of technology has led to many conveniences in our day to life. One of such technology is Mobile phones which has drastically become a part of our everyday lifestyle. The study carried out by PEW Research Center stated that as high as 67% of smart phone users said that they check their mobile phones for calls, messages, notifications or updates when even their phones did not ring and it is a clear warning that something is not right with our behavioral connection to mobile phones. It has also brought other serious and alarming issues to us which has to be considered by all of us. Mobile phone addiction is one of the effects on how technology has affected people's lives without their knowledge.

Key words: Mobile Phone, Addiction, Technology, Media, Disorder, Symptoms

Meaning of Mobile Addiction

Mobile addiction is defined as constant or cyclic obsessions caused by frequent use of mobile phones, which may direct to extreme demand and dependence. It is a typical example of inappropriate use of mobile phones.

Since the introduction of cell phones to the world, the abnormal use of mobile phones has been called into question whether its usage could go ahead to addiction. This problem is often identified as a behavioral addiction just like addictions to gambling, food, shopping, video games, work, and the internet.

Behavioral Addiction Versus Substance Addiction

It is worth to note that behavioral addiction is different from substance addiction like alcohol, tobacco, caffeine, sedatives, inhalants etc. For substance addiction issue, there are clear changes in the addicts' daily lifestyle but behavioral addiction for instance addiction to mobile phone shows no direct signs of any interference to the addicts' lifestyle.

Mobile phone addiction can be referred to as a dependence syndrome. And mobile phone addiction falls into this group.

Not only the teenagers but children and adults are also getting exposed and developed addiction to the mobile phones. Apart from that, the problem can also come from non-stop checking updates from social media, intense gaming and other extensions of mobile phones.

Symptoms of Mobile Addiction

It is alarming that the people never knew that they are addicted to mobile phone. James Robert, the professor from Baylor University's Hankamer School of Business has identified that almost every phone addict shows these six symptoms: salience, euphoria, withdrawal, conflict, tolerance and relapse.

In simple words the following are the six symptoms of mobile phone addiction.

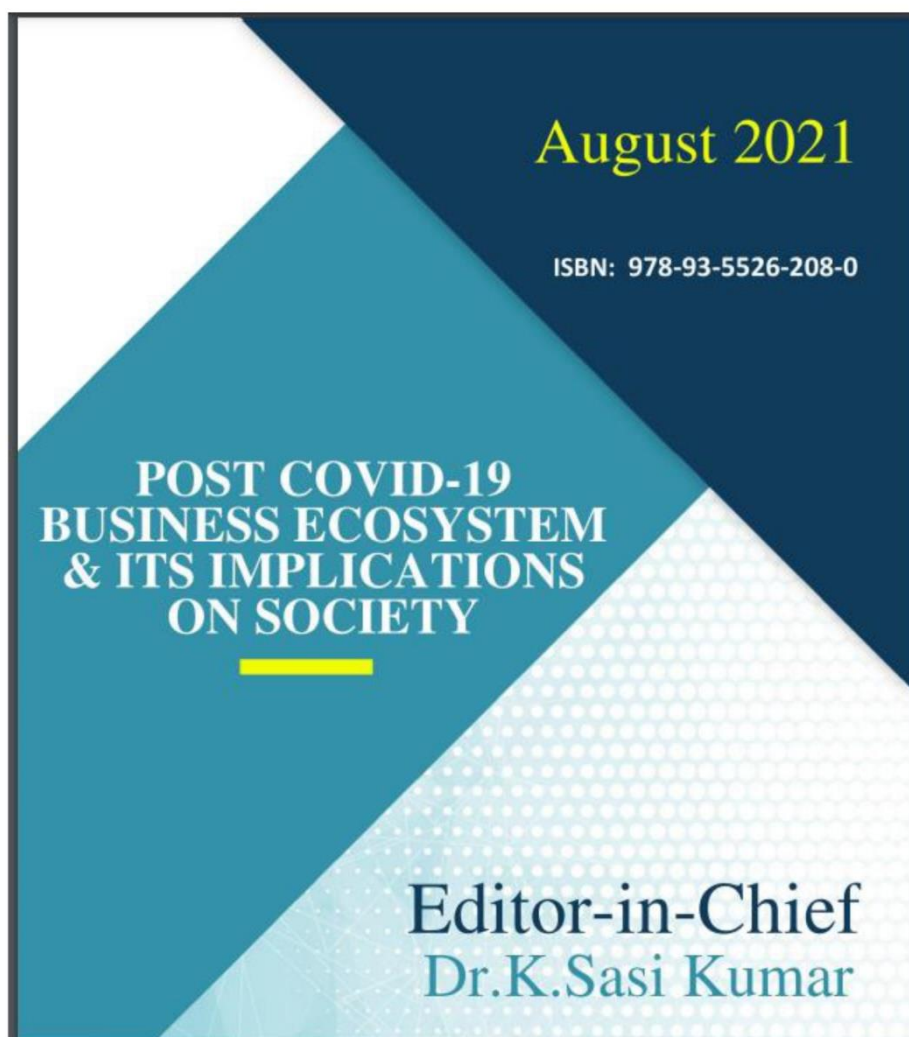
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POST COVID-19 BUSINESS ECOSYSTEM & ITS IMPLICATIONS ON SOCIETY

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POST COVID-19 BUSINESS ECOSYSTEM & ITS IMPLICATIONS ON SOCIETY - August 2021

A STUDY ON EXPLORING THE IMPACT OF COVID-19 ON TRAVEL BEHAVIOUR WITH SPECIAL REFERENCE TO COIMBATORE CITY

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ABSTRACT

Coronavirus Disease (COVID-19) outbreak poses serious concerns to the travel industries. Efforts to contain COVID-19 prompted unscheduled closure of Travel industries worldwide. COVID-19 travel closures left over travellers. The study investigates the impact of COVID-19 on travel industries. The collected data were analysed using Percentage analysis. The results show that COVID-19 has adverse effects on travel industries. The study underscores the damaging effects of COVID-19 on travel sector and the need for all educational institutions, educators, teachers and learners. Hence, the researcher has taken the step to explore the impacts of covid-19 on travel behaviour and mode preference during covid-19 pandemic. It is found that customers are used to travel only for family functions and commitments. They are very much concerned about wearing masks and other safety measures to be taken during covid 19 pandemic.

INTRODUCTION:

Pandemics are not exactly a novel phenomenon strictly related to the current modern societies as they were recorded since ancient times. Travel is the movement of people between distant geographical locations. Travel can be done by foot, bicycle, automobile, train, boat, bus, airplane, ship or other means, with or without luggage, and can be one way or round trip. Leisure travel is when a person spends money on lodging, food, and recreation while taking a vacation trip, and business travel is when a person travels for work and spends money on lodging and food.

The purpose of travel is connected with building social relationships, opportunities to learn and grow, and commitment. It gives us the chance to be truly engaged in an activity, to develop new skills and to discover new cultures. It brings us closer to ourselves and others. There are different types of travel like the weekend break, the package holiday, the group

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His areas of expertise include Retail & Supply Chain Management, Human Resource Management. To his credit, he published more than 20 articles in reputed National and International journals including UGC indexed and conference volume proceedings. Participated and presented several papers in many National and International conferences. In addition acting as President - Indian Association of Social Sciences Research (IASSR), Editor-In-Chief at International Journal of Innovation in Social Sciences, Editor of Thaavan International Journal of Research in Marketing Mangement, Active member of many professional bodies. He delivered invited talks and lectures as a Chief Guest in various Universities & colleges. Organizing Secretary of International conferences, Faculty Development Programs, Workshops and serving as a convener and member in several committees and event organizer of various Academic Programmes.

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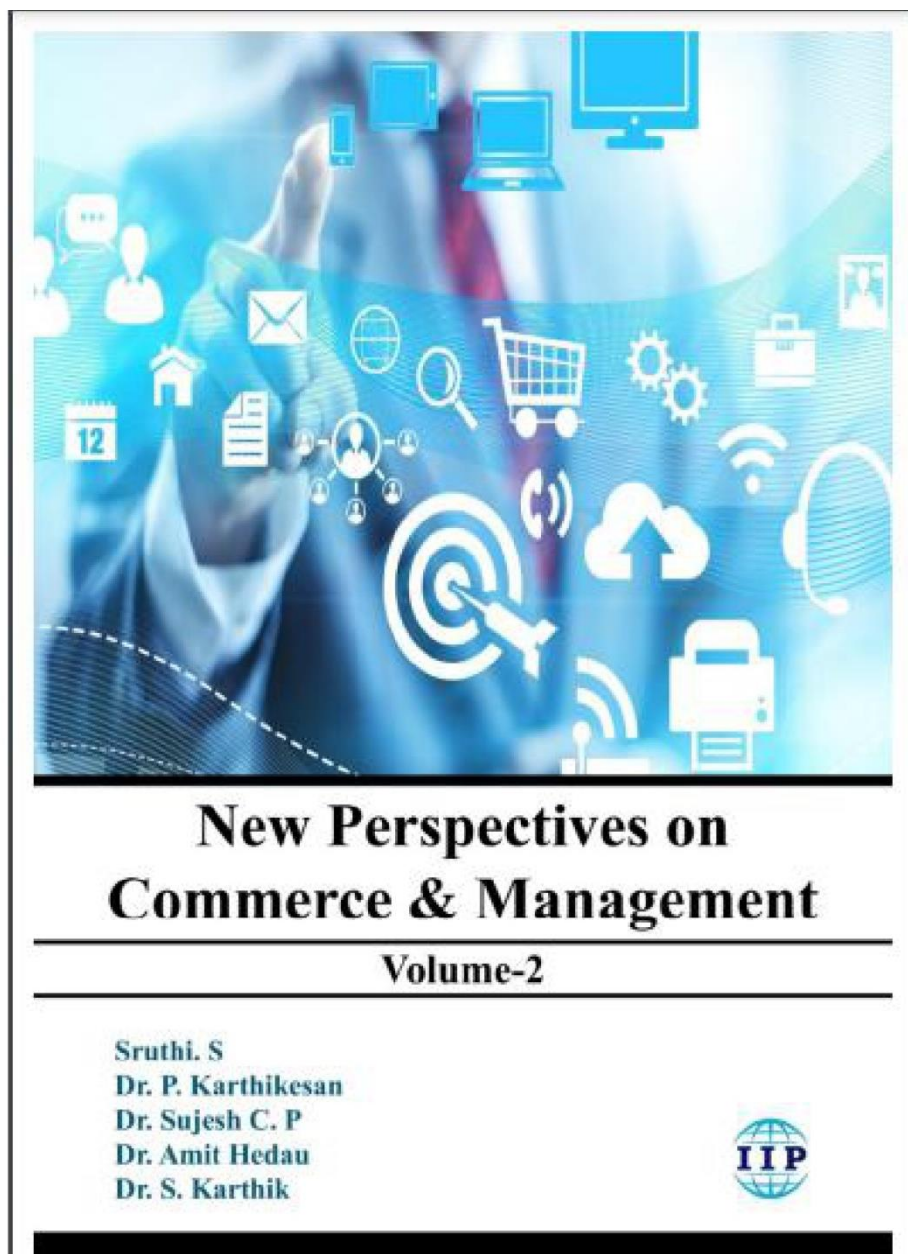
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New Perspective on Commerce & Management Volume-2

A Study on Service Quality of the Hotels with Special Reference to East Zone of Coimbatore City

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Abstract

Service quality leads to higher profitability and customer satisfaction. Nowadays one of the biggest challenges for managers in the hotel industry is to provide and sustain customer satisfaction. Customer requirements for quality products and service in the hotel industry have become increasingly evident to professionals. Hence, this study focused on the service quality of Hotels with special reference to waiting time for service in East Zone of Coimbatore City. It is found that there is no much difference between customer's expectation and quality of service delivery.

Key words: Service Quality, Expectation, Satisfaction, Hotels

I. Introduction to Service Quality

Quality improvement and adherence to accepted norms of quality are central to the modern concept of marketing of services. The quality of service delivery results in customer satisfaction and their retention as it reinforces the perception that the value of the service received is greater than the price paid for it. Some important concepts are: Modern quality concepts result in better profitability, which is the main goal of all the business. Quality control has much to do with changing the frame of mind and psychology of the service provider and particularly the front-end and back-end employees actually providing the services. We need to know how this fundamental change in attitude can be brought about.

Traditionally, most service providers have felt that they know all there is to know about the customers and their requirements. This smug or self-satisfied approach needs to be changed. Development of feedback systems is very essential part of the quality improvement. How this can be used to develop better quality standards is an issue of immense importance. Goal setting and adherence to the goals are both essential to ensure continuous improvement in the quality standards.

II. Objectives of the Study

- To determine the level of service quality in hotel in east zone of Coimbatore City.



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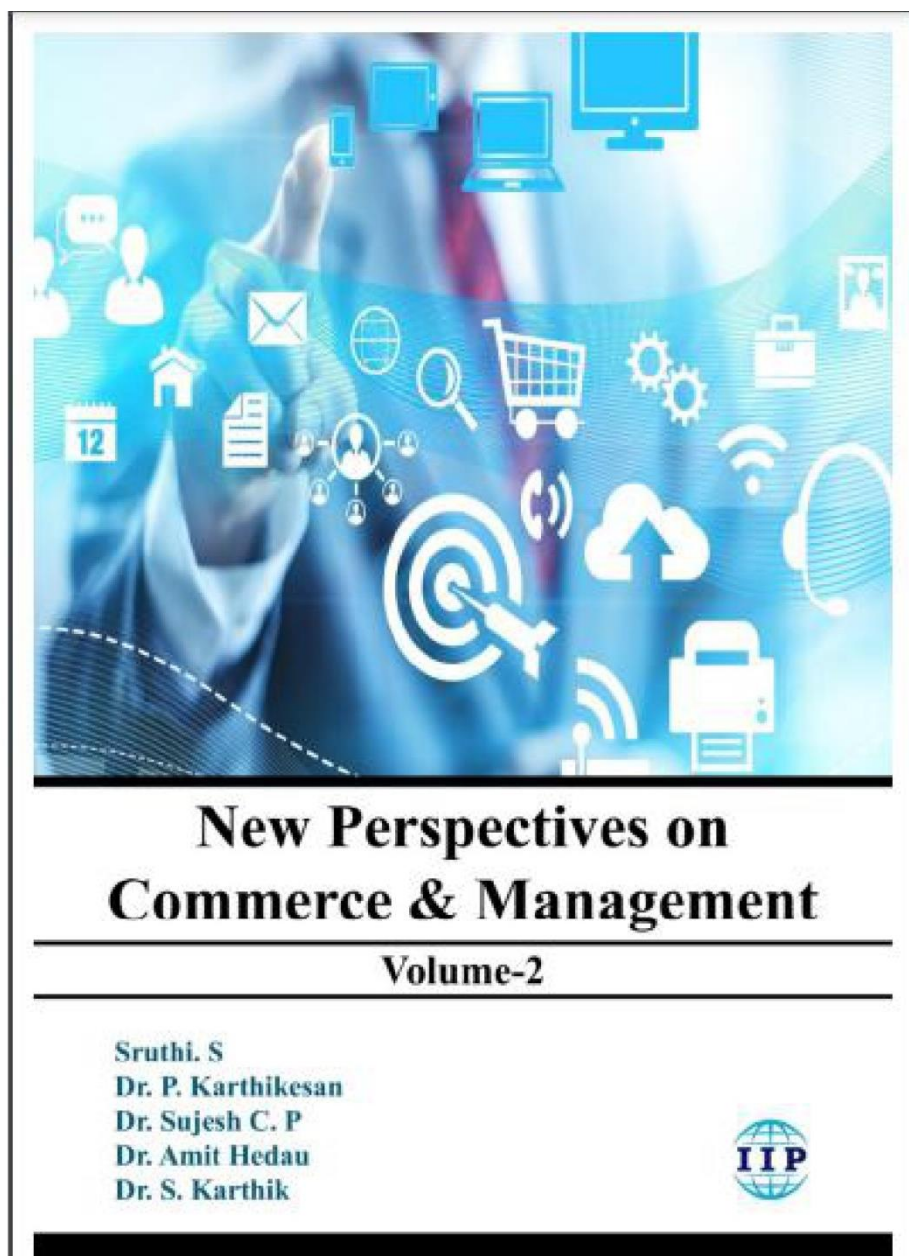

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New Perspective on Commerce & Management Volume-2

A Study on Customer Preference and Service Quality towards the Hotels with Special Reference to East Zone of Coimbatore City

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Abstract

Customer requirements for quality products and service in the hotel industry have become increasingly evident to professionals. Consumer preferences are defined as the subjective (individual) tastes, as measured by utility, of various bundles of goods. They permit the consumer to rank these bundles of goods according to the levels of utility they give the consumer. Note that preferences are independent of income and prices. Ability to purchase goods does not determine a consumer's likes or dislikes. Hence, this study focused on the customer preference and service quality towards Hotels in East Zone of Coimbatore City. It is found that there is no significance variance between preference of hotel by the respondent and their level of service quality offered by hotel on the tangibles of food is served hot and fresh, reliability of food is tasty and rich in flavor, responsiveness of employee are never too busy to respond to your requests, assurance of employees have the knowledge to answer your questions and Empathy of hotel employees understand Customer specific needs.

Keywords: Consumer, Preference, Service Quality, Requirement

I. Introduction

The precursor to the modern hotel was the inn of medieval Europe, possibly dating back to the rule of Ancient Rome. These would provide for the needs of travelers, including food and lodging, stabling and fodder for the traveler's horse(s) and fresh horses for the mail coach. Famous London examples of inns include the George and the Tabard. A typical layout of an inn had an inner court with bedrooms on the two sides, with the kitchen and parlour at the front and the stables at the back.

For a period of about 200 years from the mid-17th century, coaching inns served as a place for lodging for coach travelers (in other words, a roadhouse). Coaching inns stabled teams of horses for stagecoaches and mail coaches and replaced tired teams with fresh teams. Traditionally they were seven miles apart, but this depended very much on the terrain.

Some English towns had as many as ten such inns and rivalry between them was intense, not only for the income from the stagecoach operators but for the





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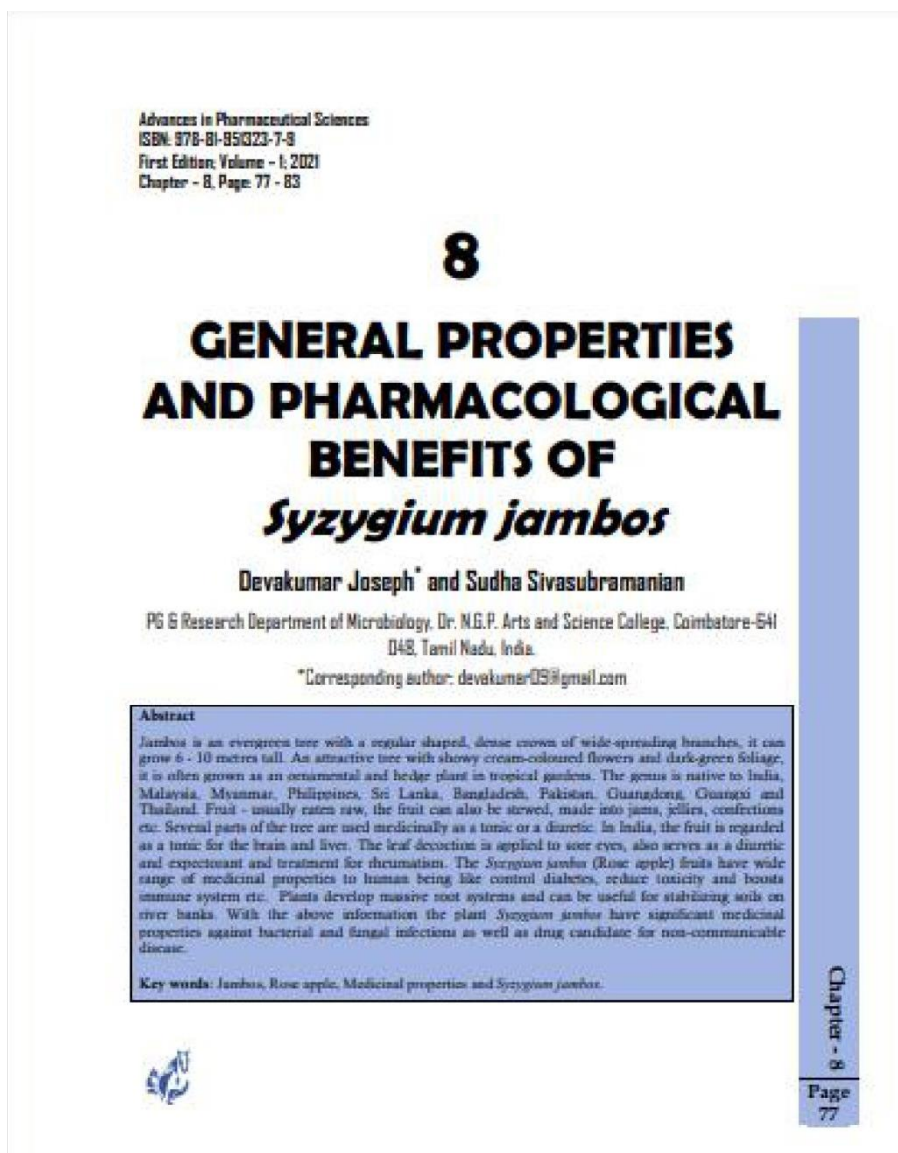


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12. J. Rengaramanujam & J. Devakumar

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Chapter - 6, Page: 58 - 66

6

PHARMACOLOGICAL BENEFITS OF *Eleutherococcus* *senticosus*

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Coimbatore - 641 048, Tamil Nadu, India.

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Abstract

Eleutherococcus senticosus Harms, called Siberian ginseng is a medicinal plant with a long history of use (by the Chinese for over 2000 years). Eleuthero can reach a height of six feet, although it grows slowly. It usually flowers in July, depending on the climate. The flowers are self-fertile and may also be pollinated by insects. Root extracts of *Eleutherococcus senticosus* are sold as a dietary supplement or cosmetic, usually under the name *Siberian ginseng*. Eleuthero contains eleutherosides-eleutherosides B (syringic) and E (syringaresinol) that are used to identify *Siberian ginseng*. It is also used to boost immunity, and as an antimicrobial and chemoprotectant. The correct dose for you may depend on factors including your age, gender, and medical history. In order to achieve this status a plant must be harmless to the body. It must also have a broad-spectrum, normalizing action that brings an organism back to homeostasis. Through Russian Research, Eleuthero became the model for all other adaptogens. In the late '60's and '70's, studies were conducted in over 2,100 healthy people. Another study found that healthy people who took *Siberian ginseng* for 4 weeks had more T-cells, which may indicate their immune systems were stronger. One double-blind study of 93 people with Herpes Simplex Virus (HSV) Type 2, which can cause genital herpes, found that taking *Siberian ginseng* reduced the number of outbreaks. These studies showed that Eleuthero increased the ability of subjects to withstand stress such as heat, noise, motion, exercise, and increase in workload. Subjects also experienced a normalization in mental alertness and work output.

Key words: *Eleutherococcus senticosus*, *Siberian ginseng*, Root, Immunity and Mental alertness.



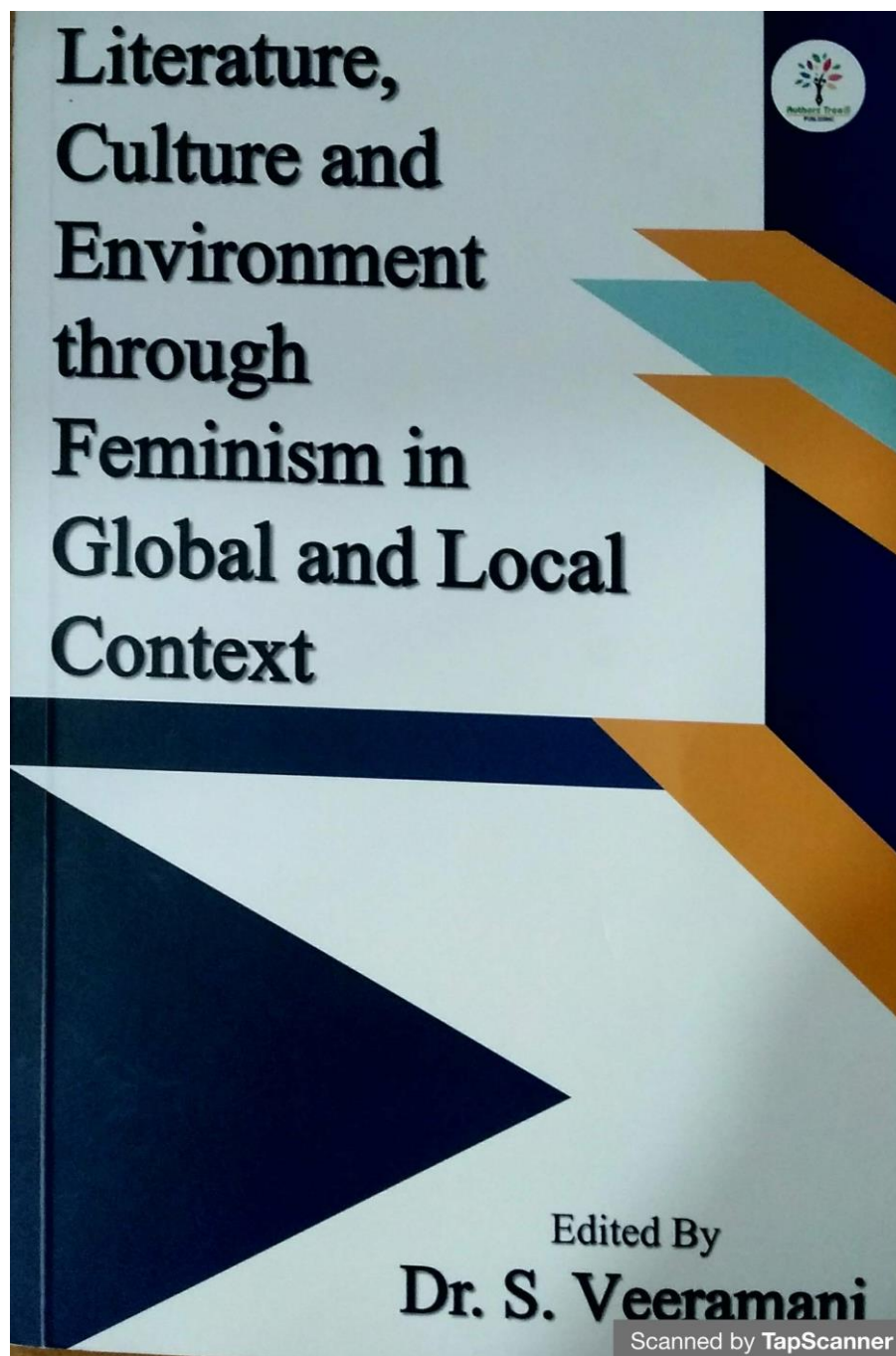
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Literature, Culture and Environment through Feminism in Global and Local Context

5.

Advance AI Gender Equity for Better Societal Implications

Ms.K.Mohanapriya

Assistant Professor of English

Dr.N.G.P Arts and Science College, Coimbatore.

Introduction

Existence of gender inequality can be dated from few hundred years back. What does this gender inequality provide women kind with? Women kind is bared from formal work, less stipulated salary and much other kind of abuses of rights, freedom of speech and sexual violence. To transform their lives and drive a change partially on gender inequality which is socially and culturally shaped took time and efforts of lot of men and women who staunchly advocated for economic justice and gender equality. This gender inequality has not faded away entirely but exists even now because there are only certain roles to be played by female which are assigned by society. Present-day technological advancement let to human to interact socially with computers. Artificial Intelligence Technology is used in all streams of life such as education, economy, Health care, and politics almost in all commercial entities. It has become part of us, we seek and use AI in smart phones, autonomous cars etc., In such case, we could evidently find feminine personas like name, voice and personality in Digital Voice Assistants- an extender of Artificial Intelligence. The computers as Social Actors (CASA) paradigm suggests that human ascribe human qualities to computers and interact socially with them, even when they are consciously aware the computer is just a machine (Nass, et al., 1994; Edwards, Edwards, Stoll, Lin, & Massey, 2018).

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About the Book


This book is exclusively designed to focus and disseminate the knowledge of environmentalism, culturalism and literature through feminism both in global and local context. A ten critical – analytical articles are compiled in the book from assistant professors, research advisors, research scholars and students of English language and literature. Their critical analysis in the articles is the most relevant in the present cultural scenario.

About the Editor

Dr S. Veeramani is an illustrious alumnus of St. Joseph's College, Tiruchirappalli, Tamilnadu. He received a Ph.D. in English from St. Joseph's College, Tiruchirappalli (Bharathidasan University). He has acquired 13 years of teaching experience. He has published research articles in various international and national journals. He has completed 20 online courses from MOOCs. And, to his credit, he has published books titled: 1. *The Rudiments of English Communication*, 2. *Ilakiya Kotpadukal* (Literary Theories in Tamil) and 3. *An Objective Hand Book of Literary Theory* (2021). He has been a zestful resource person for almost 60 academic events organized by various institutions across the state, inclusive of 35 webinars and four FDP during the Covid Lockdown. He has conducted three online quizzes during the covid lockdown on: 1. Annihilation of Covid 19, 2. Literary Theory -I, and 3. Literary Theory- II. He acts as Reviewer, Editor, and Member in professional bodies. He is a proud recipient of: 1. *Kanavu Nayagan Abdul Kalam Award*, 2. *Sanga Thamizhar Award*, 3. *The Best Faculty Award*, and 4. *The Best Research Paper Publisher Award*. He is a Member, Board of Studies in English Language Teaching (ODL) in the University of Mumbai. He is an expert in Outcomes-Based Education.



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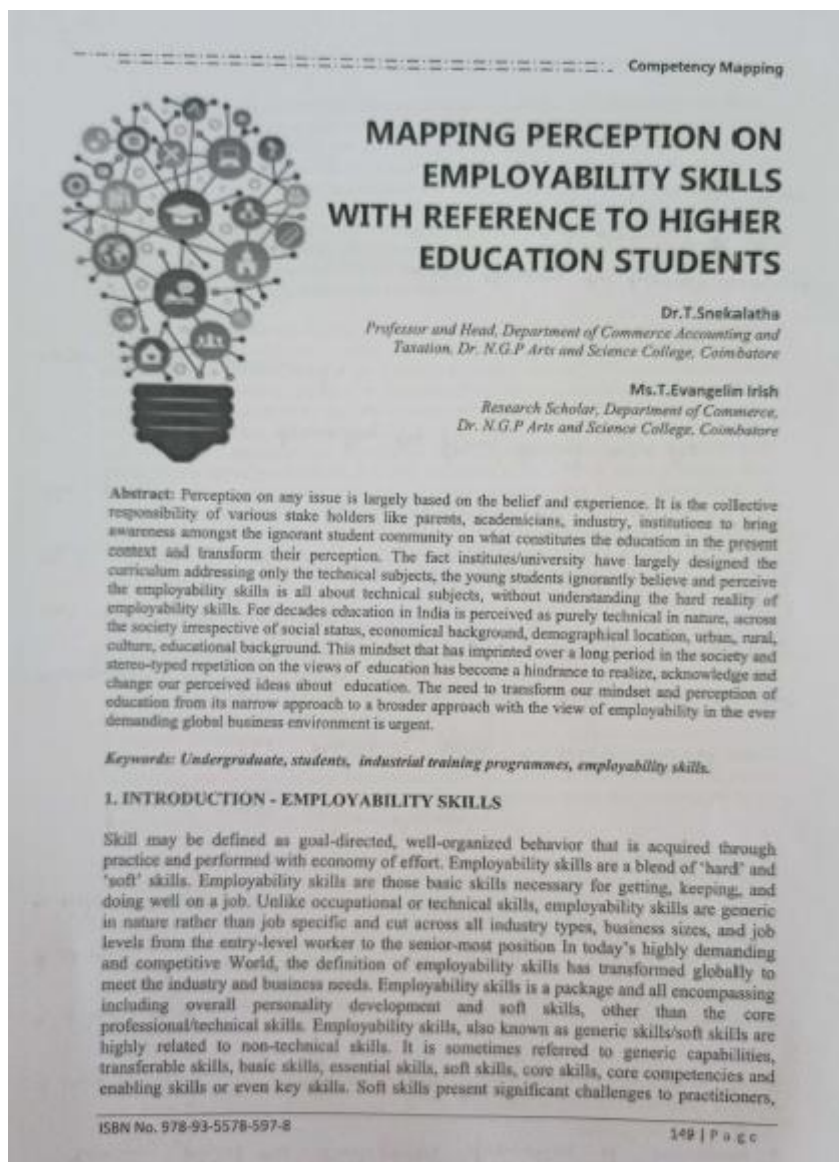


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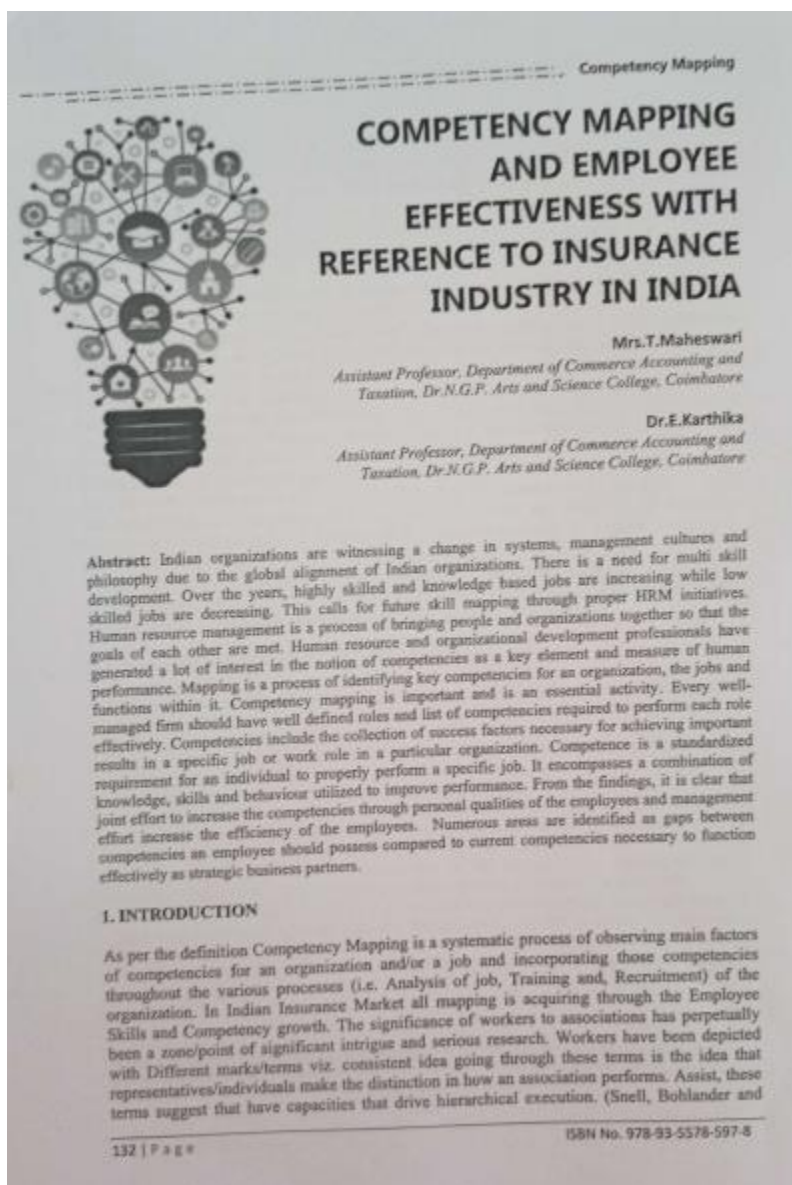
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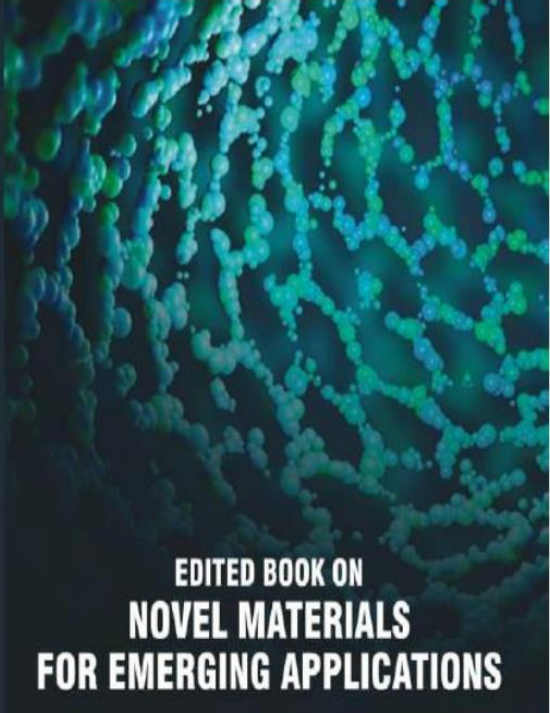


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STUDIES ON Ag-Cu BIMETAL NANOPARTICLES USING TULASI LEAF EXTRACT

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Abstract

Nanotechnology is part of science which is utilized to study and utilization of minuscule size molecule which is utilized in many fields. The Ag-Cu bimetallic nanoparticle synthesized using green method from *Ocimum tenuiflorum* which is used in antimicrobial activity. Green amalgamation is chosen since it is ecological wellbeing and cost proficiency. The synthesized Ag-Cu bimetallic nanoparticle is characterized using XRD, FTIR, FE-SEM, which is then used to determine the particle size, composition, etc. the main application of this Ag-Cu bimetallic nanoparticle is its antimicrobial activity which is tested on both gram-positive bacteria and gram-negative bacteria and its result is obtained. From this we presume that Ag-Cu nanoparticle we can see undeniable degree of antimicrobial movement.

Keywords: Green amalgamation, *Ocimum tenuiflorum*, Bimetal, Antimicrobial activity.

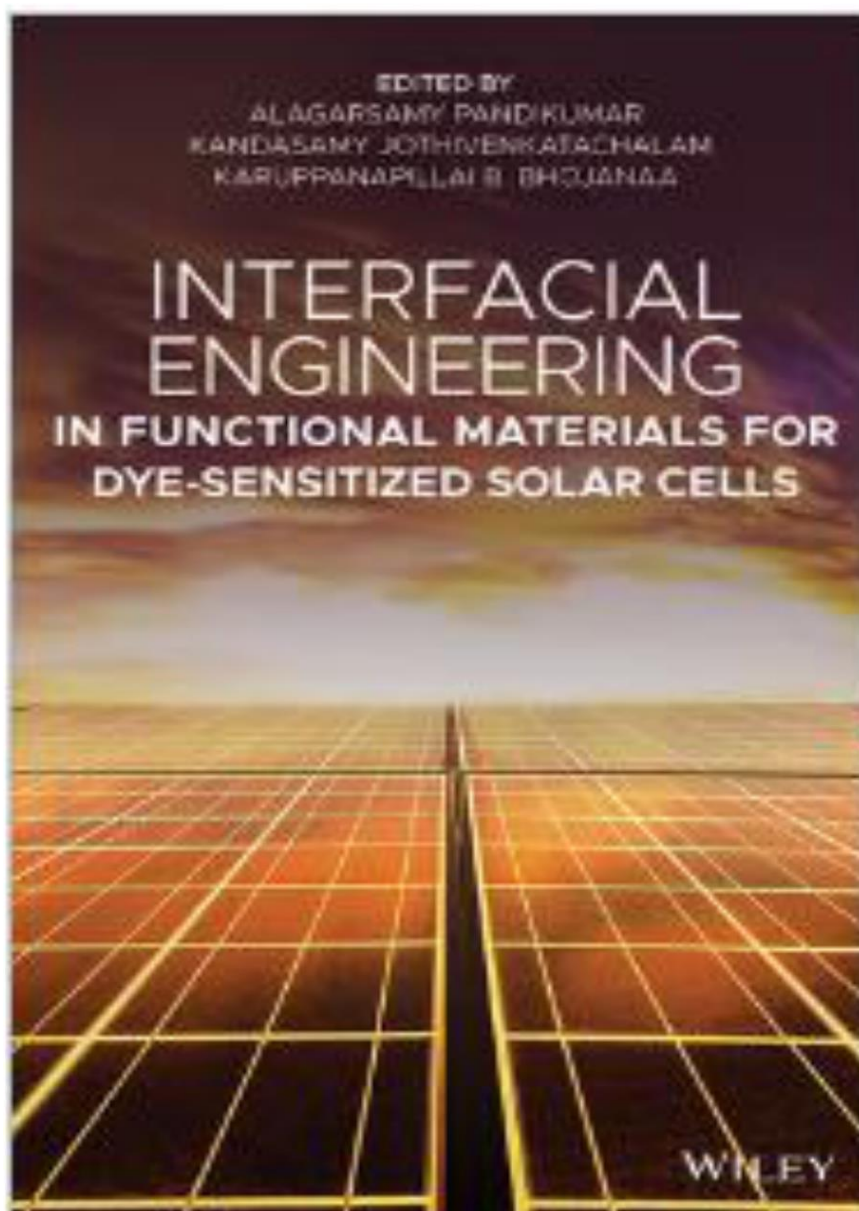
INTRODUCTION

Synthesis of nanoparticles is an important area of research in nanotechnology. Synthesis of nanoparticles is classified into two types top down (mechanical, chemical etching, thermal sputtering) and bottom up. Bottom up is classified into chemical method (chemical,



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Binary Semiconductor Metal Oxide as Photoanodes

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²Nanostructure Lab, Department of Physics, The Gandhigram Rural Institute-Deemed to be University, Gandhigram, Tamilnadu, India

8.1 Why Metal Oxide Semiconductors?

As both natural and synthetic metal oxide semiconductors (MOSs) have diverse applications and the properties of MOS can be tailored in many ways, viz., varied choice of morphologies, introducing oxygen vacancies, doping. In photovoltaics, MOSs serve as a scaffold layer for loading dyes in dye-sensitized solar cells (DSSCs) and organic-inorganic hybrid perovskites in perovskite solar cells (PSCs), as well as electron and hole transport layers in DSSCs and organic solar cells (OSCs). The function of scaffold in DSSCs is to facilitate charge separation and charge transport, whereas that of the transport layers is to conduct one type of charge carrier block to the other type. Therefore, tailoring their properties is inevitable to develop high-performing photovoltaic devices using them. On the other hand, the electrochemical properties of the MOS such as band edge energies determine their success as photocatalysts [1].

The wide-band-gap MOSs (e.g. >3 eV) having suitable band position relative to dye (or photosensitizer) have been used for the fabrication of DSSCs. Owing to the wide band gap, the MOSs employed for the fabrication of DSSCs have absorption at the ultraviolet region. Therefore, photosensitizer/dye is responsible for the absorption of light at the visible and near-infrared region. Furthermore, the high surface area of nanoporous MOS increases dye loading; thereby enhancing light absorption leading to improved performance of DSSCs. In addition to the above-mentioned physical characteristics, low cost, natural abundance, and facile synthesis methods of MOS combined with facile solution processability is another key advantage for the application in DSSCs. Binary MOSs such as TiO₂, ZnO, Fe₂O₃, SnO₂, ZrO₂, Nb₂O₅, Al₂O₃, and CeO₂ are the typical materials that have been well tested now for their use as photoelectrodes in DSSCs [2–8]. Among them TiO₂, ZnO, and Fe₂O₃ are 3d transition metal oxides, ZrO₂ and Nb₂O₅ are 4d transition metal oxides, SnO₂ and Al₂O₃ are p-block metal oxides, and CeO₂ is a f-block metal oxide. In TiO₂, the Ti ions are in a distorted octahedral environment and formally have a Ti⁴⁺(3d⁰) electronic configuration.

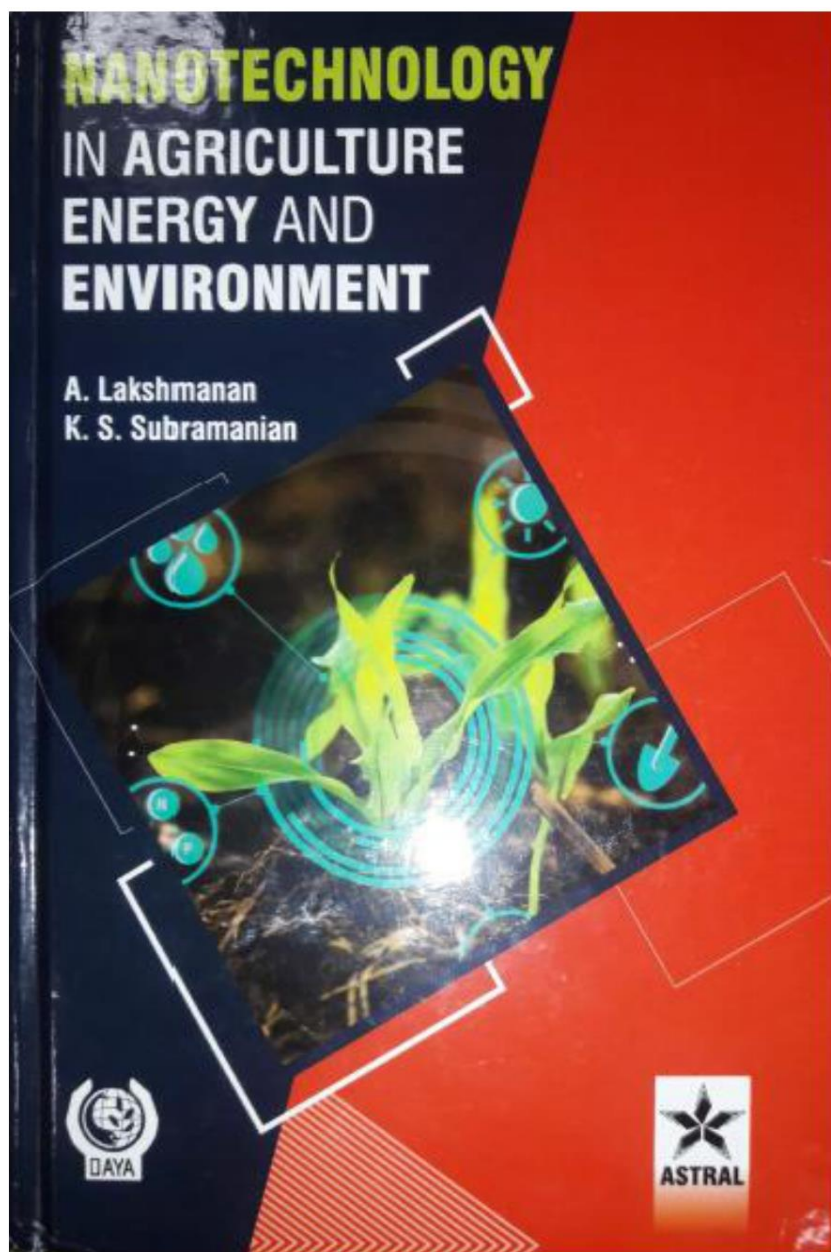
Ternary oxides and inorganic perovskites such as BaTiO₃, SrTiO₃, SrSnO₃ and organic-inorganic hybrid halide lead perovskites such as CH₃NH₃PbI₃ (toxicity of lead is being seriously viewed these days) also are contributing to the development of efficient solar cells [9–13]. As the lifetime of free charges and open-circuit voltages in DSSC are determined by the flatband potential and trap states in the semiconductor oxide, core-shell nanostructured photoanodes were developed. Here comes the above binary metal oxides for such designs of core-shell structures.

Interfacial Engineering in Functional Materials for Dye-Sensitized Solar Cells, First Edition.
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Chapter 2

Magnetic, Electrical and Optical Properties of Nanostructured Materials

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Magnetic Properties

Introduction

Earlier the researcher believed that the material properties can be altered only by varying the chemical composition. But later it was found that the material properties can be tuned by different shape and controlled size of the material at nanoscale without changing the chemical composition. The transition from bulk materials to nanoscale lead to a number of changes in their physical properties especially magnetic, electrical and optical properties. Magnetic materials play an important role in the advancement of research in the field of nanoscience and technology. From the scientific point of view, when a material is placed within a magnetic field, the magnetic forces of the electrons will be affected. This effect is known as Faraday's Law of Magnetic Induction. From technological point of view, the magnetic based nanostructures instruct considerable larger storage density due to a phenomenal increase in the number of bits stored in a unit area. The magnetic properties in nanostructures are governed by a number of factors such as shape, composition, size, topology, surface morphology, anisotropy, etc., They are invariably used in potential appliances such as, power generation, digital and analogue data storage, medical applications like magnetic therapy, magnetic





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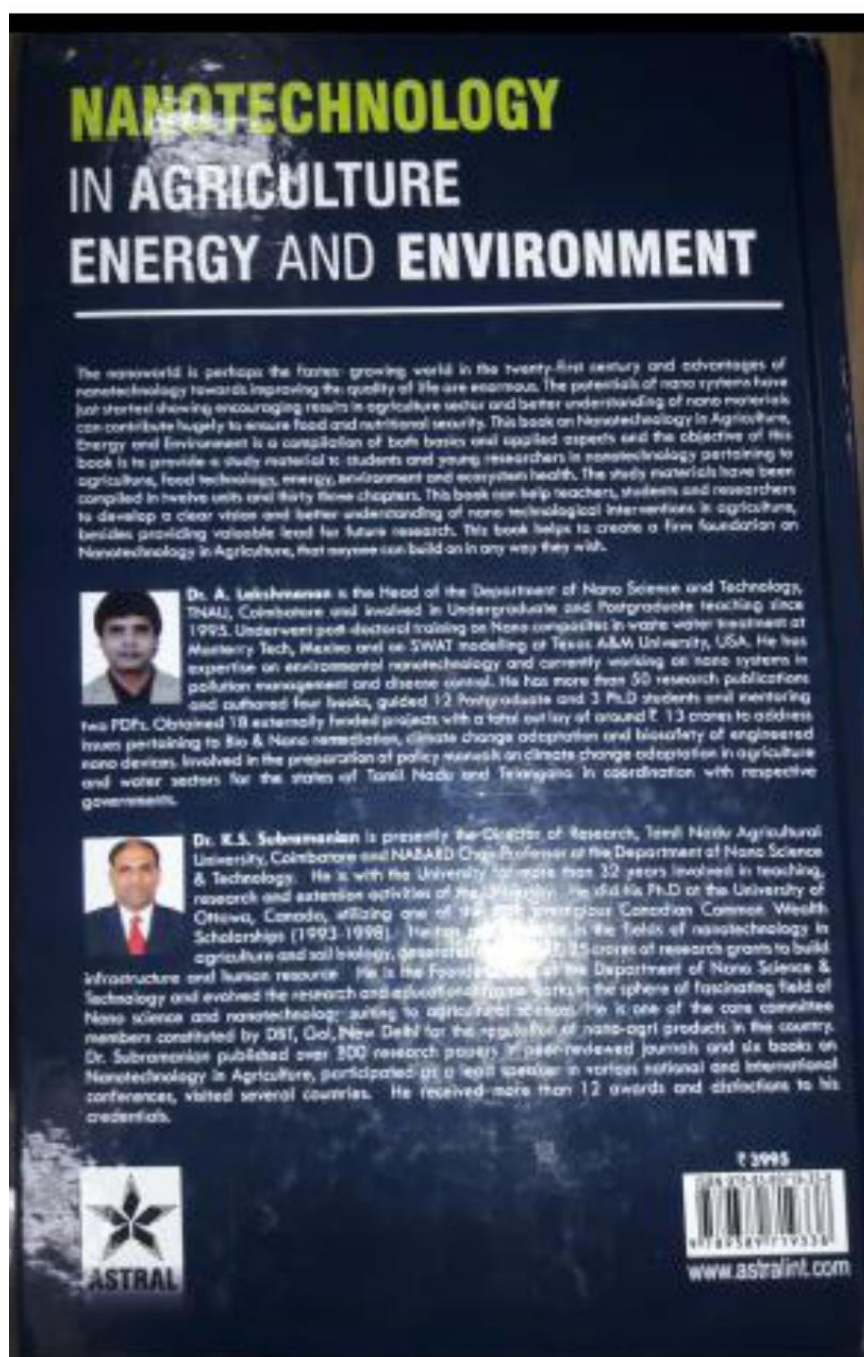
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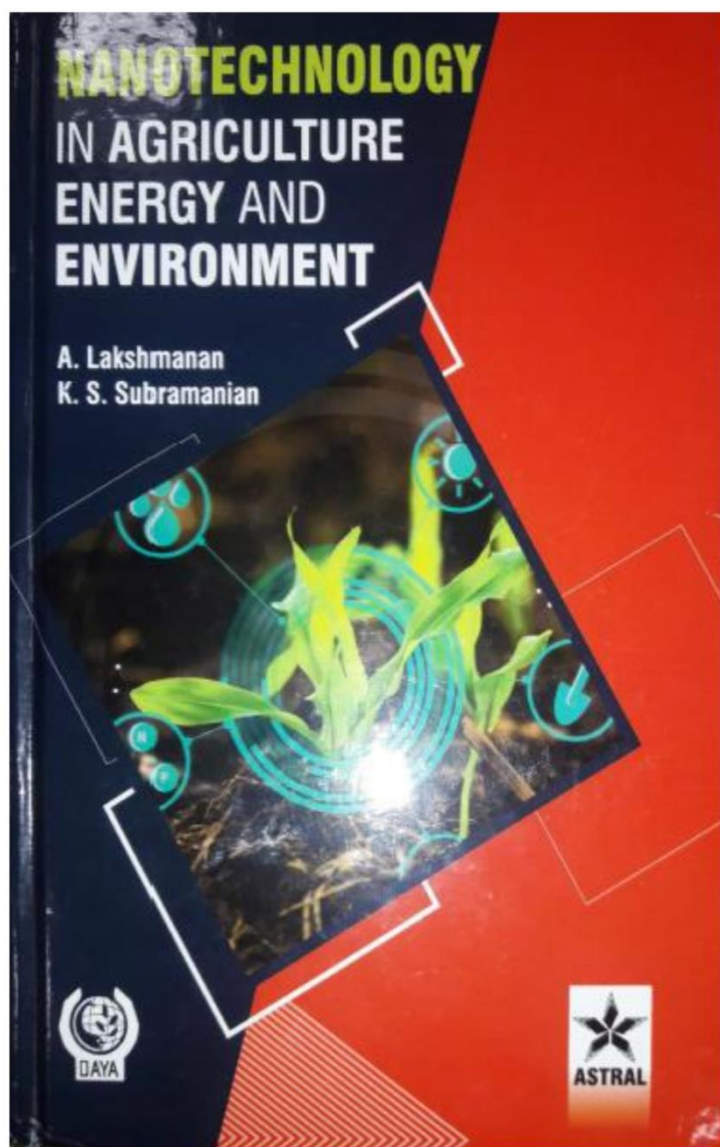
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19. Dr. k. Girija





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— Editors —

A. Lakshmanan

K.S. Subramanian

*Tamil Nadu Agricultural University
Coimbatore - 641 003, Tamil Nadu*

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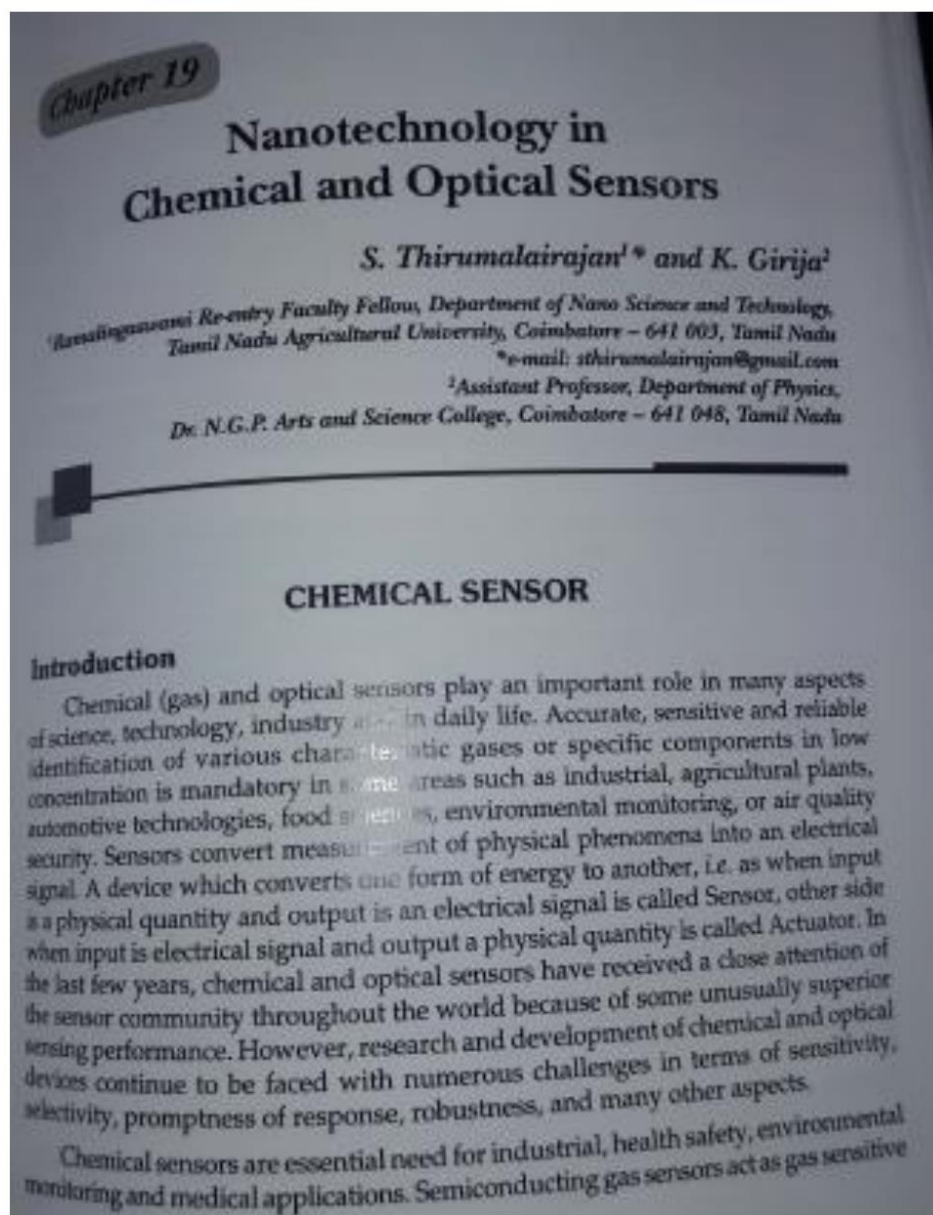


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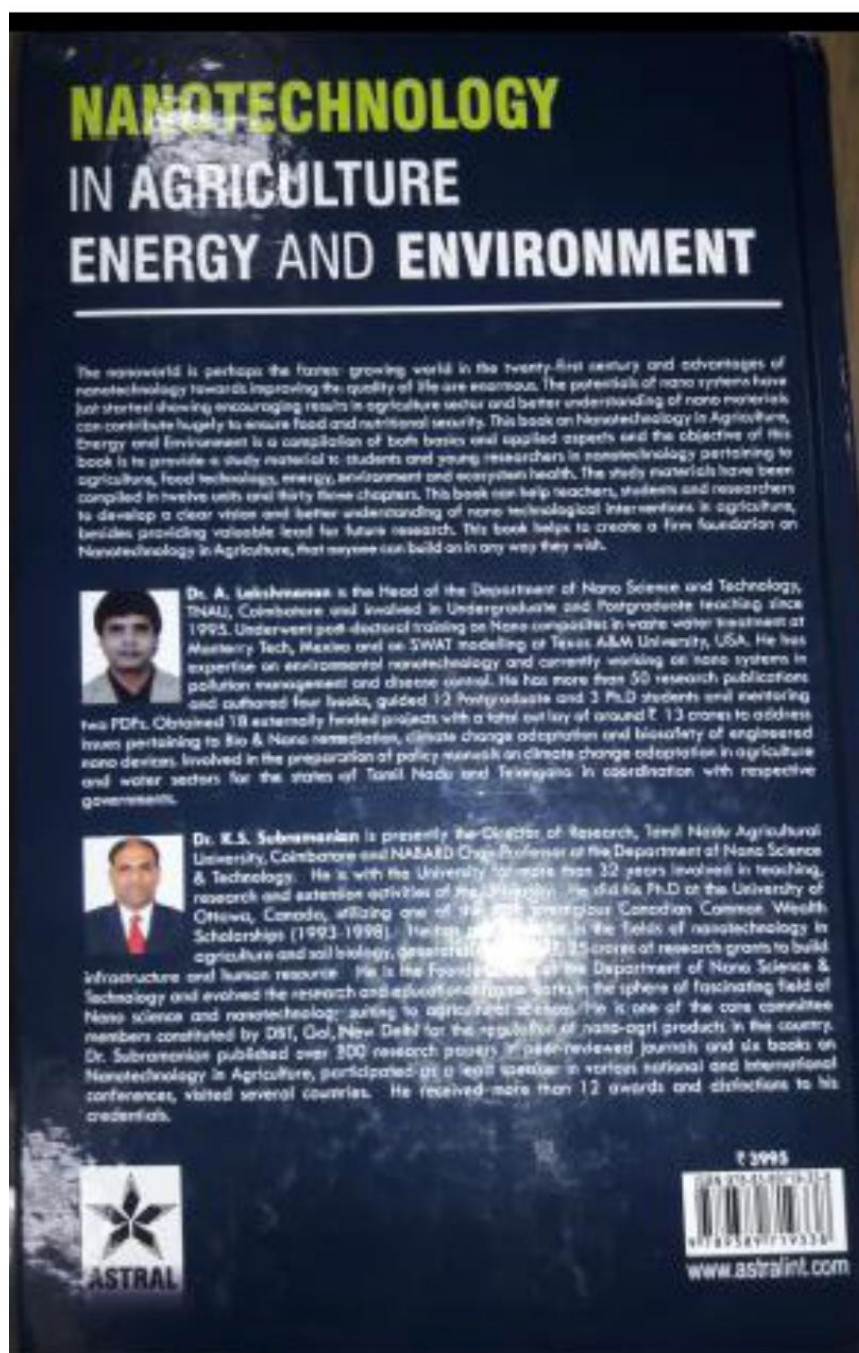
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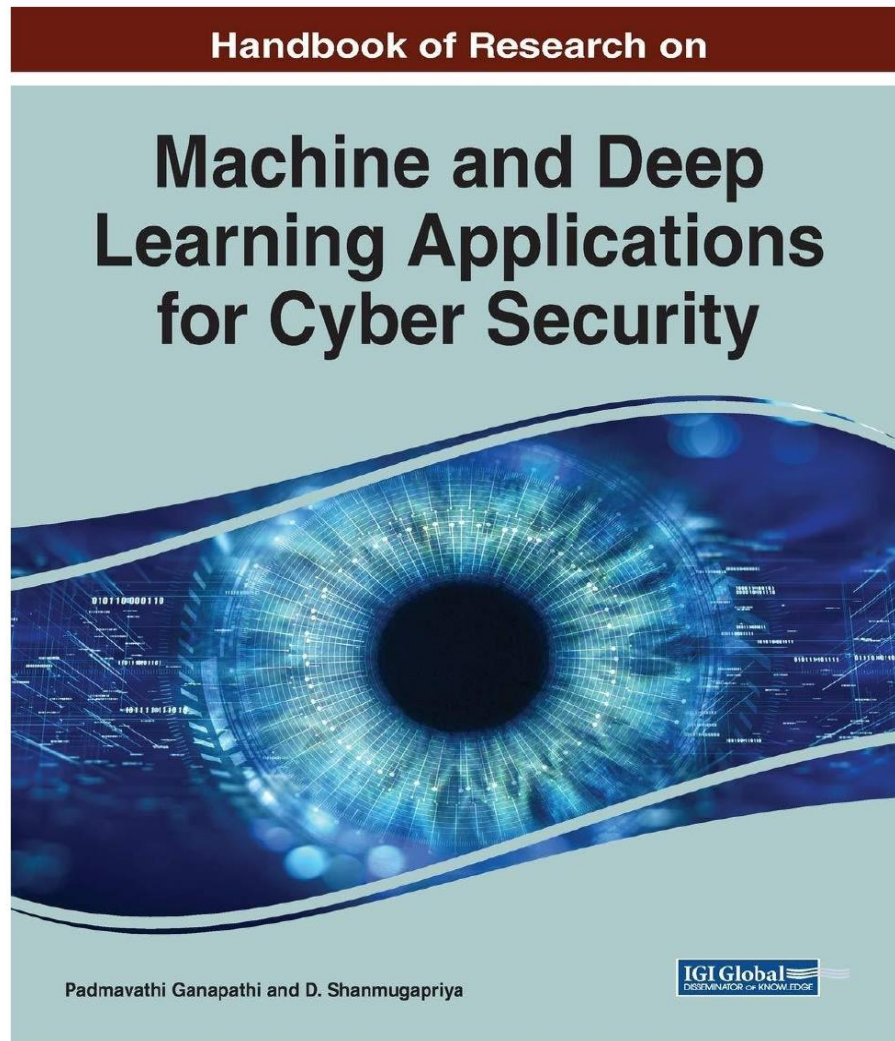
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20. Vanitha N





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Chapter 11 Traffic Analysis of UAV Networks Using Enhanced Deep Feed Forward Neural Networks (EDFFNN)

Vanitha N.

Avinashilingam Institute for Home Science and Higher Education for Women, India & Dr. N. G. P.
Arts and Science College, India

Padmavathi Ganapathi

Avinashilingam Institute for Home Science and Higher Education for Women, India

ABSTRACT

The world is moving to an autonomous era. Autonomous vehicles take a major role in day-to-day activity, helping human personnel do work quickly and independently. Unmanned aerial vehicles (UAVs) are autonomous vehicles controlled using remotes in ground station by human personnel. These UAVs act as a network that plays a vital role in the digital era. There are different architectures of UAV networks available. This chapter concentrates on centralized UAV network. Because of wireless and autonomy characteristics, these networks are prone to various security issues, so it's very important to monitor and analyze the traffic of the UAV network in order to identify the intrusions. This chapter proposes enhanced deep feed forward neural network (EDFFNN) in order to monitor and analyze the traffic of the UAV network to detect the intrusions with maximum detection rate of 94.4%. The results have been compared with the previous method of intrusion detection.

INTRODUCTION

Unmanned Aerial Vehicles (UAV) systems or drones plays a vital role in recent days, which can fly autonomously or it can be functioned remotely. Due to the high mobility of drones they have been widely used for a lot of applications like military, search and rescue operations, health care, delivery, monitoring etc. Ad-hoc networking between UAVs or drones (FANET- Flying Ad-hoc Networks) can solve the

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Handbook of Research on Machine and Deep Learning Applications for Cyber Security

As the advancement of technology continues, cyber security continues to play a significant role in today's world. With society becoming more dependent on the internet, new opportunities for virtual attacks can lead to the exposure of critical information. Machine and deep learning techniques to prevent this exposure of information are being applied to address mounting concerns in computer security.

The **Handbook of Research on Machine and Deep Learning Applications for Cyber Security** is a pivotal reference source that provides vital research on the application of machine learning techniques for network security research. While highlighting topics such as web security, malware detection, and secure information sharing, this publication explores recent research findings in the area of electronic security as well as challenges and countermeasures in cyber security research. It is ideally designed for software engineers, IT specialists, cybersecurity analysts, industrial experts, academicians, researchers, and post-graduate students.

Topics Covered

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- Electronic Commerce
- Information Sharing
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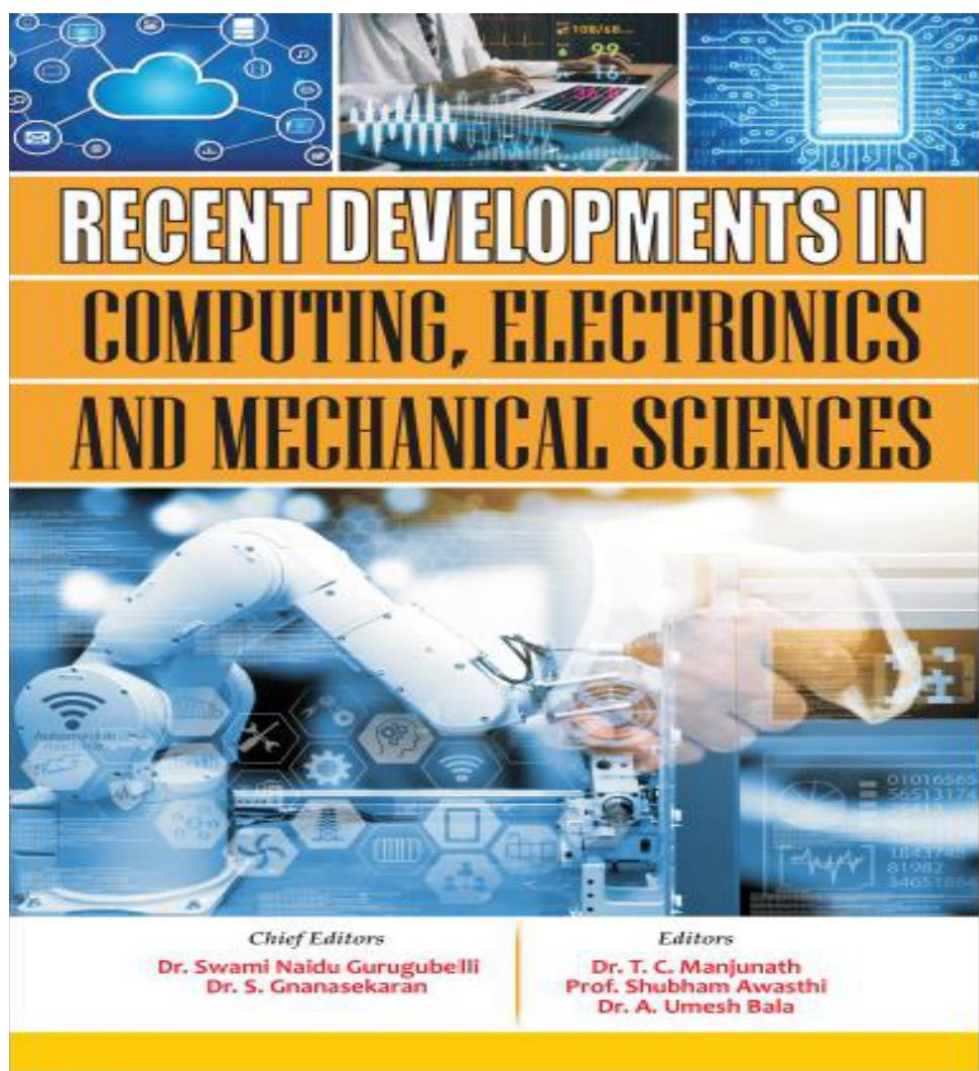


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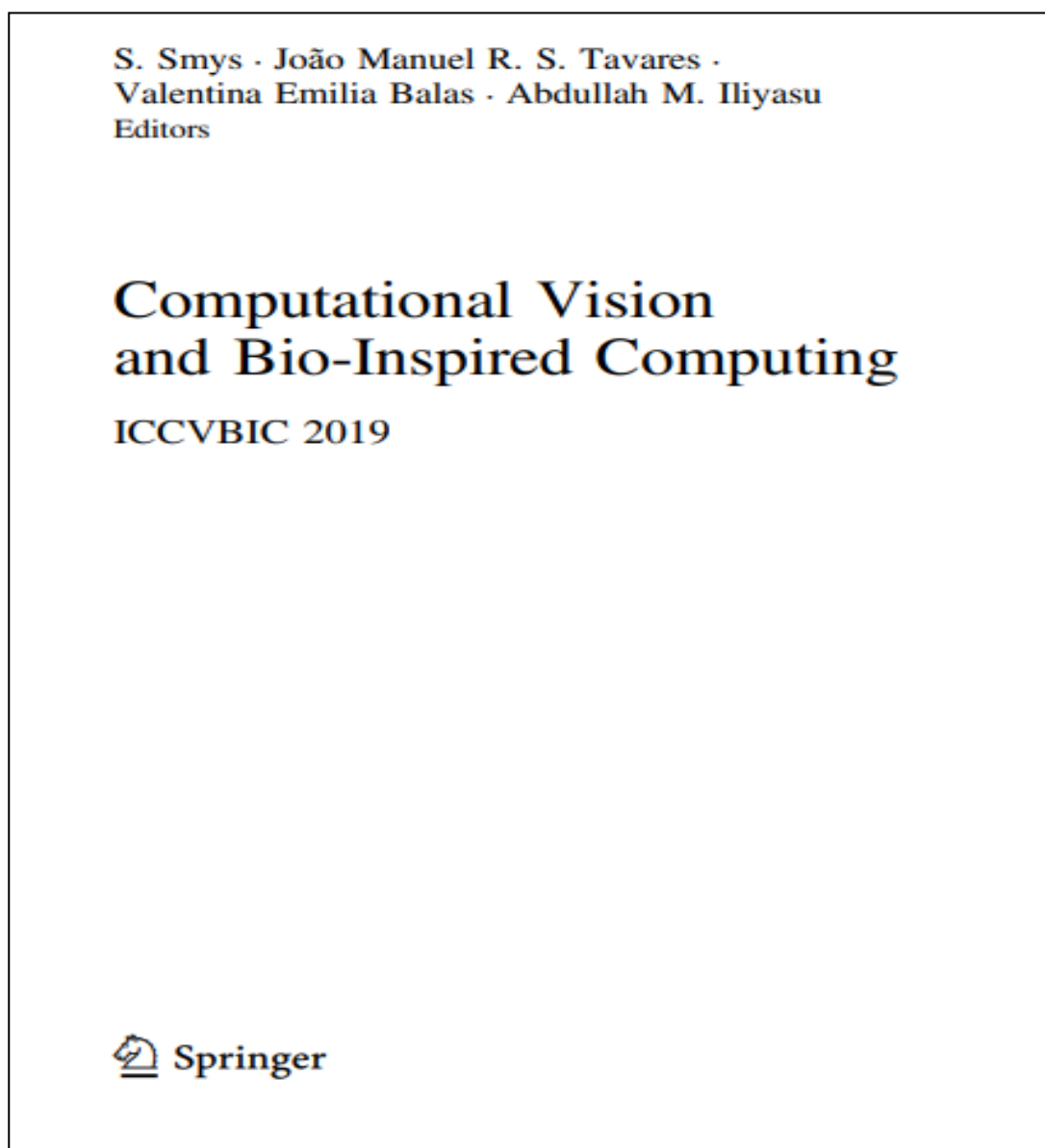
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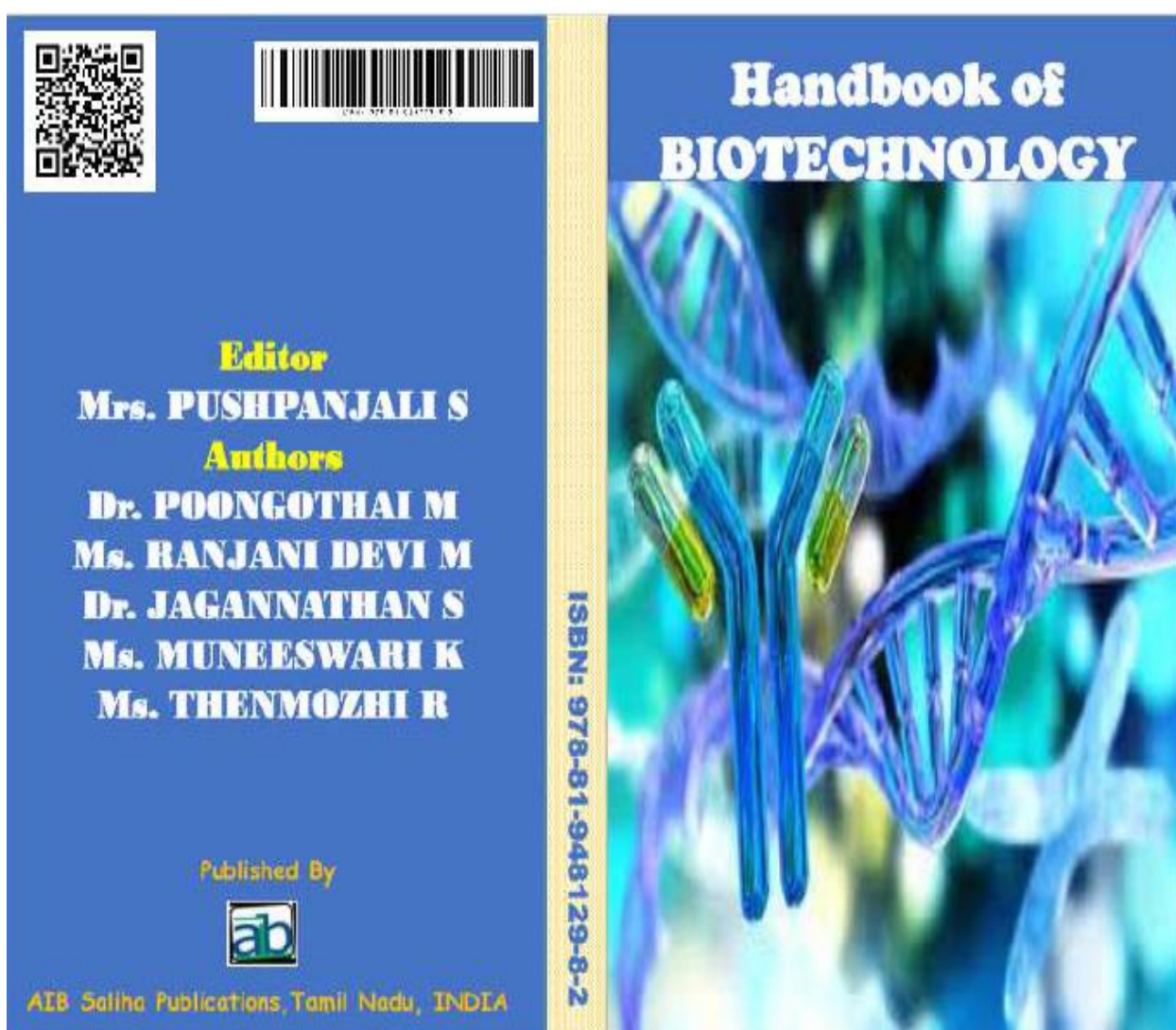
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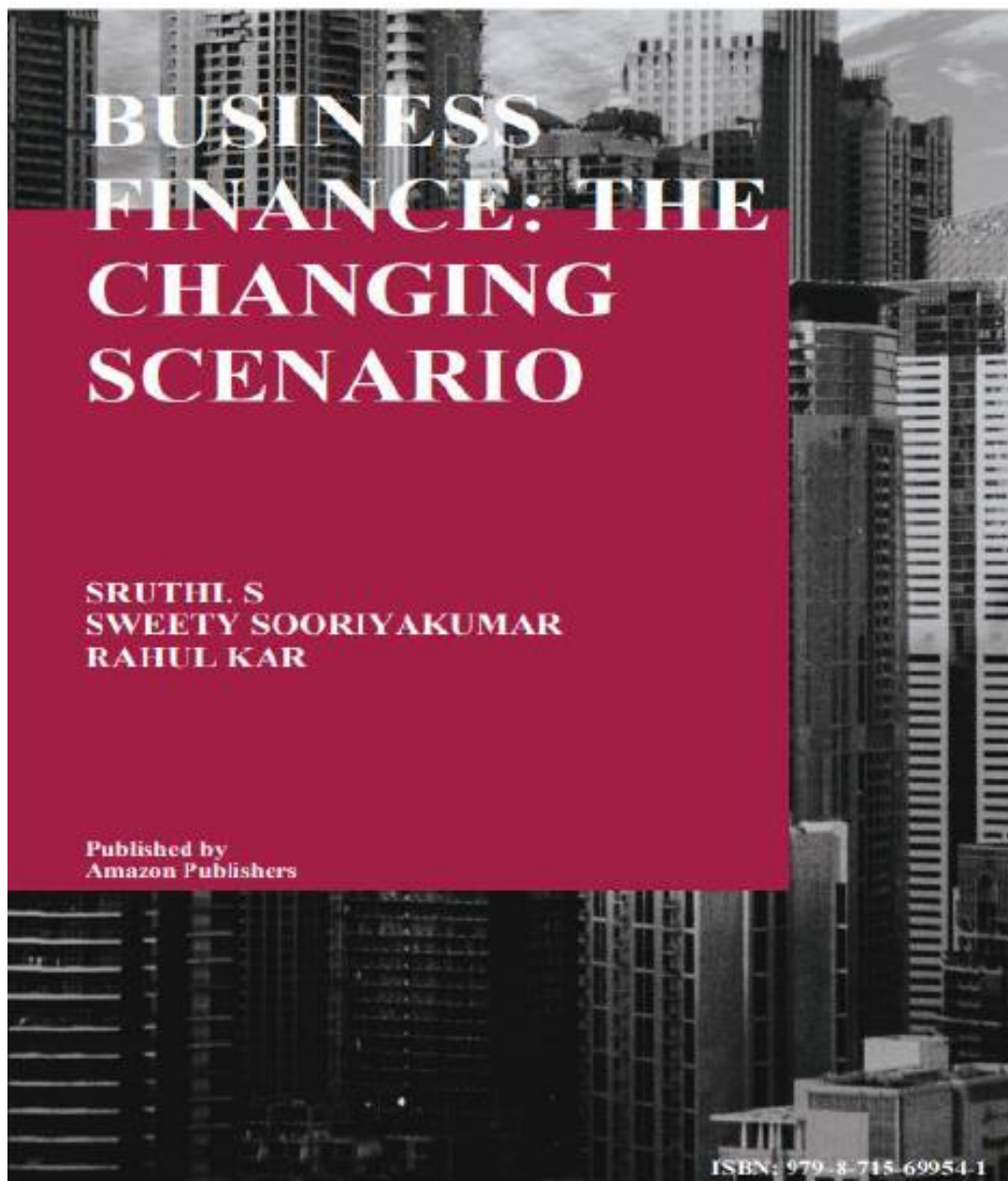
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AN OVERVIEW OF STOCK AND COMMODITY MARKET

DR. R. LATHA

Assistant Professor, KG College of Arts and Science
Coimbatore

FINANCIAL SYSTEM:

Financial system facilitates the transfer of economic resources from one section of the economy to a different. The economic system of any country consists of specialised and non-specialized financial institutions, financial market, financial instruments and financial services which facilitates the transfer and allocation of funds efficiently and effectively. The economic system helps to mobilize the excess funds and utilizing in productive manner Components.

CLASSIFICATION OF FINANCIAL SYSTEM

1. Financial markets.
2. Financial institutions.
3. Financial instruments.
4. Financial services.

Financial Markets: Financial market may be a place or mechanism which facilitates the transfer of resources from one entity to a different. A financial market is an institution or arrangement that facilitates the exchange of financial instruments, like shares, debentures and loans etc. A market wherein financial instruments such as securities are traded is known as financial market. Financial markets transactions may take place either at a specific place eg. Bank stock market or through other mechanisms like telephone, telex etc.

ROLE OF FINANCIAL MARKETS

1. **Transfer of resources:** A financial market facilitates the transfer of resources from one person to another.
2. **Productivity usage:** Financial markets allow for the productive use of the funds in financial system thus enhancing the income and gross national production.
3. **Growth in income:** Financial markets allow lenders earn Interest and Divided on their surplus investable funds thus contributing to the growth in their income.
4. **Capital formation:** A channel through which savings flow to aid capital formation of a country.
5. **Price discovery:** Financial markets allow for the determination of the price of the traded financial assets through the interactions of different set of participants.

Function of Financial Markets

1. It facilitates the transfer of economic resources from lenders to ultimate borrowers in financial system.
2. Lenders earn interest/dividend on their surplus funds, thereby increasing their income and as a result enhancing national income.
3. Borrowers will have to use borrowed funds productivity if invested in new assets increase their income and standard of living.
4. By facilitating transfer of resources it serves the economy and finally welfare of the general public in the country.
5. It provides a channel through new saving flow into capital market which facilitates capital formation in the economy.
6. Interaction of buyers and sellers in the financial market helps in the price discovery of financial assets.
7. Financial market provide a mechanical for an investor to sell a financial asset and liquidate the funds invested.
8. Financial market reduces the search and information costs of transaction financial instrument.
9. It provides the borrowers with funds which they will invest in some productive purpose
10. It provides the lenders with productive assets so that they can invest it in productive usage without the necessity of direct ownership or assets.

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FUZZY PARTICLE SWARM OPTIMIZATION (FPSO) AND IMPROVED SUPPORT VECTOR MACHINE (ESVM) CLASSIFIER FOR CREDIT CARD FRAUD RECOGNITION

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Abstract:

In today's economy, credit card plays a very important role. But as the number of Credit Card customers increased, Credit Card fraud cases were also on the rise. Numerous techniques have been proposed to confront the growth in credit card fraud. In the existing research work, proposed a novel fraud detection method which utilizes the behavioral patterns from the similar cardholders to construct a recent behavioral profile of a cardholder in order to stay away from the credit card fraud. However, the selection of optimal features from the samples and the decision cost for accuracy becomes main important problem. To illuminate these issues this proposed research work presents a novel fraud detection technique that makes out of five phases. To enhance a cardholder's behavioral styles, first make use of the cardholder's historical transaction data to divide all cardholders into distinctive groups such that the transaction behaviors of the members in the same group are similar. The window-sliding strategy is proposed to aggregate the transactions in each group. And also introduces a new Fuzzy Particle Swarm Optimization (FPSO) based feature selection for the enhancement of credit card fraud detection. After selecting the best and most effective features, by means of an extended wrapper method, an ensemble classification are performed by Enhanced Kernel based Support Vector Machine (EK SVM). This Proposed work adopts the external quality metrics as Accuracy, Recall, FFDR and CDDR. The UCI dataset is used. The analytical measures used to evaluate the performance of the mentioned fraud detection technique. The simulation results show that this proposed fraud detection method provides better accuracy results than other fraud detection techniques.

Keywords: Credit Card, Fraud detection, Window-sliding strategy, Fuzzy Particle Swarm Optimization (FPSO), extended wrapper method, Enhanced Kernel based Support Vector Machine (EK SVM).

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A Study on Deep Learning Methods for Skin Disease Classification

N. Vanitha, M. Geetha

Abstract

Dermatological disorders are one among the foremost widespread diseases within the world. Despite being common its diagnosis is extremely difficult due to its complexities of skin tone, color, presence of hair. This paper provides an approach to use various computer vision-based techniques (deep learning) to automatically predict the varied sorts of skin diseases. The system makes use of deep learning technology to coach itself with the varied skin images. the most objective of this technique is to realize maximum accuracy of disease of the skin prediction. The people health quite the other diseases. Skin diseases are mostly caused by mycosis, bacteria, allergy, or viruses, etc. The lasers advancement and Photonics based medical technology is employed in diagnosis of the skin diseases quickly and accurately. The medical equipment for such diagnosis is restricted and costliest. So, Deep learning techniques helps in detection of disease of the skin at an initial stage. The feature extraction plays a key role in classification of skin diseases. The usage of Deep Learning algorithms has reduced the necessity for human labor, like manual feature extraction and data reconstruction for classification purpose

Keywords

Disease of the Skin, Deep Learning, Types, Significance

Full Text:



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Analysis of Machine Learning Techniques for Breast Cancer Prediction

N. Vanitha, R. Srimathi

Abstract

The most frequently happening cancer among Indian women is breast cancer, which is the second most exposed cancer in the world. Here is a chance of fifty percent for fatality in a case as one of two women diagnosed with breast cancer die in the cases of Indian women. With the rapid population growth, the risk of death incurred by breast cancer is rising exponentially. [2] Breast cancer is the second most severe cancer among all of the cancers already unveiled. A machine learning technique discovers illness which helps clinical staffs in sickness analysis and offers dependable, powerful, and quick reaction just as diminishes the danger of death. In this paper, we look at five administered AI methods named Support Vector Machine (SVM), K-closest neighbours, irregular woodlands, fake/artificial neural organizations (ANNs). The performance of the study is measured with respect to accuracy, sensitivity, specificity, precision, negative predictive value. Furthermore, these strategies were evaluated on exactness review region under bend and beneficiary working trademark bend. At last in this paper we analysed some of different papers to find how they are predicted and what are all the techniques they were used and finally we study the complete research of machine learning techniques for breast cancer.

Keywords

Breast Cancer, Prediction, Machine Learning.

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An Investigation of Weather Forecasting Using Machine Learning Techniques

N. Vanitha, J. Haritha

Abstract

Customarily, climate expectations are performed with the assistance of enormous complex models of material science, which use distinctive air conditions throughout a significant stretch of time. In this paper, we studied a climate expectation strategy that uses recorded information from numerous climate stations to prepare basic AI models, which can give usable figures about certain climate conditions for the not so distant future inside a brief timeframe. These conditions are frequently flimsy on account of annoyances of the climate framework, making the models give mistaken estimates.[1] The model are for the most part run on many hubs in an enormous High Performance Computing (HPC) climate which burns through a lot of energy.. The modes can be run on significantly less asset serious conditions. In this paper we describe that the sufficient to be utilized status of the workmanship methods. Moreover, we described that it is valuable to use the climate stations information from various adjoining territories over the information of just the region for which climate anticipating is being performed.

Keywords

Weather Forecasting, Machine Learning, Types, Methods, Significance, Technique.

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5. B.M.Rajesh





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Proceedings of the
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19th March 2021

Hybrid Form of Cuckoo Search Algorithm with Hill Climbing Algorithm Based Optimization of Lifetime, Energy and Also Detection of Sybil Attack in WSN

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*Associate Professor and Head, Department of Computer Science, Nallamuthu Gounder Mahalingam College,
Pollachi, Tamil Nadu.*

Abstract— A new protocol for the collection of data called Broadcasting Combined with Multi-NACK/ACK (BCMNA) (BCMNA, of which NACK; inferring for "Negative-Acknowledgment", ACK for "Acknowledgment") protocol is intended based on the evaluation strategy. Throughout the data collection process, the BCMNA protocol achieve energy and delay feasibility in both intra-cluster and inter-cluster. In the situation of intra-cluster, a cluster head propagates NACK during the round of TDMA collection to identify the nodes which do not transmit data to prevent the nodes that effectively transmit data via retransmission. The design work created a new Hybrid Cuckoo Search with the algorithm for Hill Climbing (HCSHC), enhances the optimum solution to modify the search agent mechanism by estimating the optimum path value, i.e. HCSHC integrating Cuckoo Search (CS) to Hill Climbing (HC) through an analysis approach attempting to use earlier information on both the previous search experience to accelerate differentiation. A hybrid CS-HC algorithm is therefore implemented in this article; it strengthens the search agent's optimal solution upgrading process by determining the optimal network path value. The node transport delay is similarly a protocol comprised of the delay of data gathering inside the cluster as well as the delay of data transmitted to the sink. There is also a new concept for Sybil attack detection that increases network topology security while transmitting and receiving data packets. Sybil attacks will be regarded as the most important assaults designed and developed by the various detection algorithms and systems. However, the current algorithms also need intelligence to boost detection accuracy. The suggested HCSHC algorithm is therefore designed for the detection of Sybil attack by identity verification.

Keywords — Broadcasting; Sybil Attack; Cuckoo Search.

1. Introduction

Wireless Sensor Networks (WSNs) refers to a group of spatially dispersed and dedicated sensors for monitoring and recording the physical conditions of the environment and organizing the collected data at a central location [1]. WSNs can be defined as a self-configured and infrastructure-less wireless networks to monitor physical or environmental conditions, such as temperature, sound, vibration, pressure, motion or pollutants and to cooperatively pass their data through the network to a main location or sink where the data can be observed and analyzed. In WSNs, location information of nodes plays an important role in many location-aware applications, such as geographical

routing [2], environmental monitoring, tracking applications, network coverage checking, and location-based information querying. In these applications, it is useless to gather the nodes' information without locations. In addition, correct locations are necessary; otherwise, it is still meaningless to get the location information. In many localization systems, a small proportion of nodes equipped with Global Positioning System (GPS) (i.e., anchor nodes or localized nodes) are a feasible way in the deployment of WSNs due to the high cost of GPS technology. Anchor nodes with location information can assist sensor nodes which are unaware locations to get their locations. GPS and local positioning algorithms can be used to obtain location and positioning information [3]. WSNs enable new

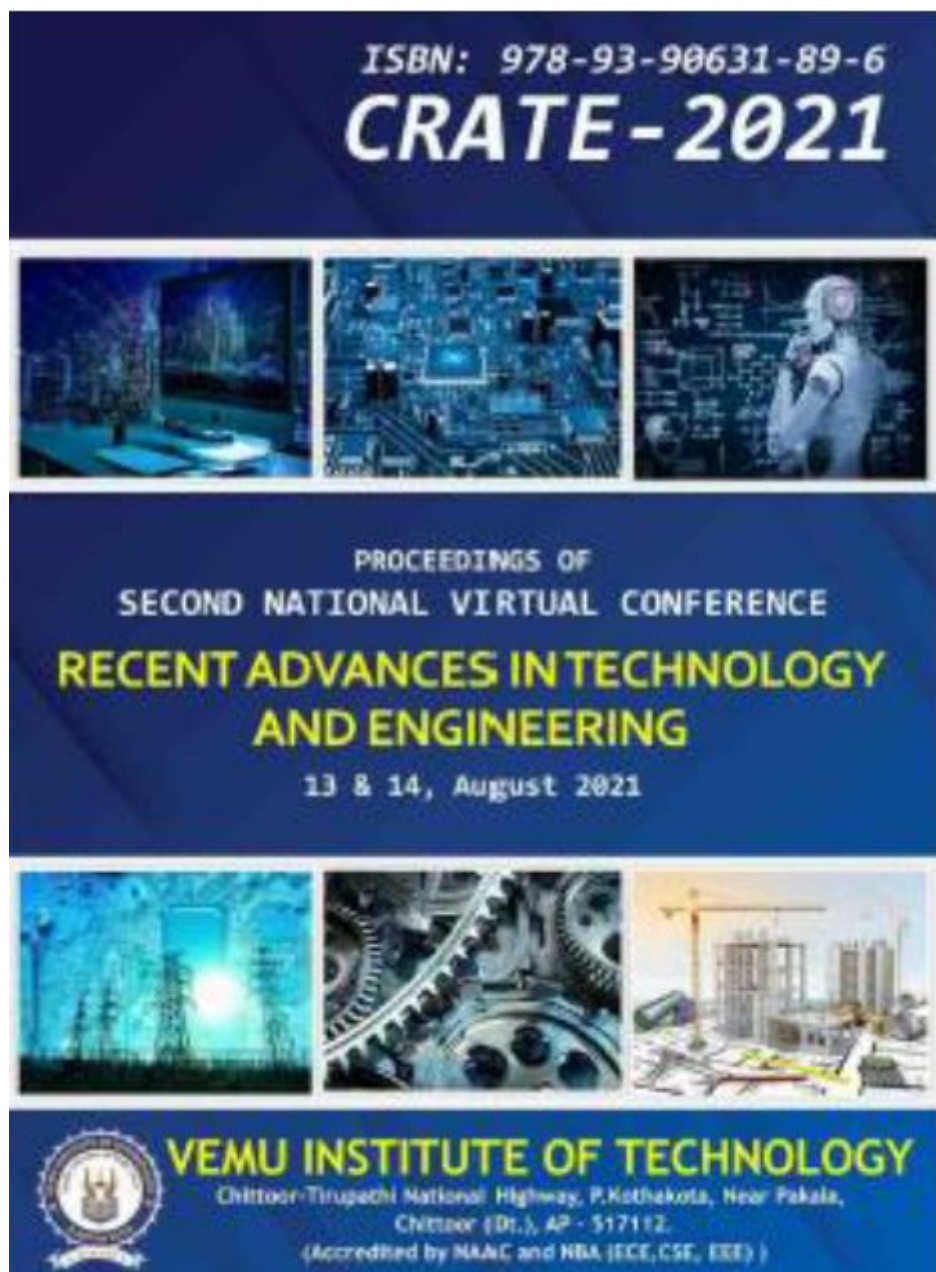
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6. Dr. Deepannita Chakraborty





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Proceedings of Second National Virtual Conference on Recent Advances in Technology & Engineering (CRAFTS-2021), 13th & 14th, August 2021

Impact of Oxidation Number on the Structural and Optical Properties of Sn Doped ZnO Nanoparticles

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Abstract: Tin(II) doped zinc oxide nanoparticles (Sn:ZnO) were prepared using green synthesis method. Aloe Vera broth gel was used to extract oxides for preparing Sn(II):ZnO nanoparticles. After synthesizing the precursors, the oxides were mixed in stoichiometry ratios to attain different concentration of tin ($x = 0.02, 0.04 \text{ \& } 0.06$) in zinc oxide host lattice. The XRD studies indicated the formation of single-phase cubic structure and 19 nm to 15 nm of crystallite size for the prepared nanoparticles. The doping of tin in ZnO nanoparticles influenced in the narrowing of band gap from 3.15 eV to 3.07 eV. The room temperature paramagnetic behaviour was observed for Sn doped ZnO nanoparticles.

Keywords: Transparent conducting oxide; Zinc oxide; Nanoparticles; Green synthesis

1. INTRODUCTION

Generally, wide band gap oxide nanoparticles/nanostructured nanomaterials are given high importance as they can find in many optoelectronic applications. In other way these are called as transparent conducting oxides (TCO). These TCO possess the peculiar properties such as high transmittance and low electrical resistivity. These properties will be best suited for many device applications such as electrodes for flat panel displays and also for highly sensitive touch screens on mobile phones or laptops, research is going on in full swing to discover new materials falling under this category [1,2]. Indium tin oxide (ITO) has been considered as one of the best TCO materials [3-6]. But the metal indium is high cost and find its scarcity. Hence search began for alternate TCO materials. As the population is increasing continuously, the demand for

electronic devices also increases. Hence a large number of electronic devices are manufactured to fulfil the demand. Zinc oxide can also be considered as replacement to ITO [7]. The pure and doped ZnO are also finding their role as TCO [8-11] and they find applications in drug delivery agent [12,13], antibiotic agent having antibacterial properties, electrode material, touch screens, etc. [14-17]. The magnetic zinc oxide find applications in magneto-opto-electronic applications [18-20]. In order to make wide band gap oxide semiconductor (TCO) into magnetic semiconductor, different magnetic and transition metal ions were added into the TCO material to make into magnetic semiconductor.

Among the various synthesis methods, nanoparticles prepared by green synthesis are in recent trends of research. The advantages of this method are non-hazardous, low cost and biodegradable. The precursor can be obtained from the leaves or biological products such as bacteria, fungi, etc. Thus, in the present article, the precursors were extracted from Aloe Vera leaf. Generally, plants are the home of many reducing agents like flavonoids, terpenoids, alkaloids, amino acids, chelating products, etc. They are the phytochemicals which will acts like stabilizing agents also during the synthesis of nanoparticles. So, this kind of synthesis of nanoparticles from leaves/ fruits extract is termed as plant mediated synthesis. In plant mediated synthesis, extract from parts of the plant either leaves or flower is mixed with a solution of the metal to be extracted. The synthesis conditions such as concentration of phytochemicals, the surrounding atmosphere, temperature and pH value of the solvent manipulates the size of the nanoparticles as well as their properties. The green synthesis is much

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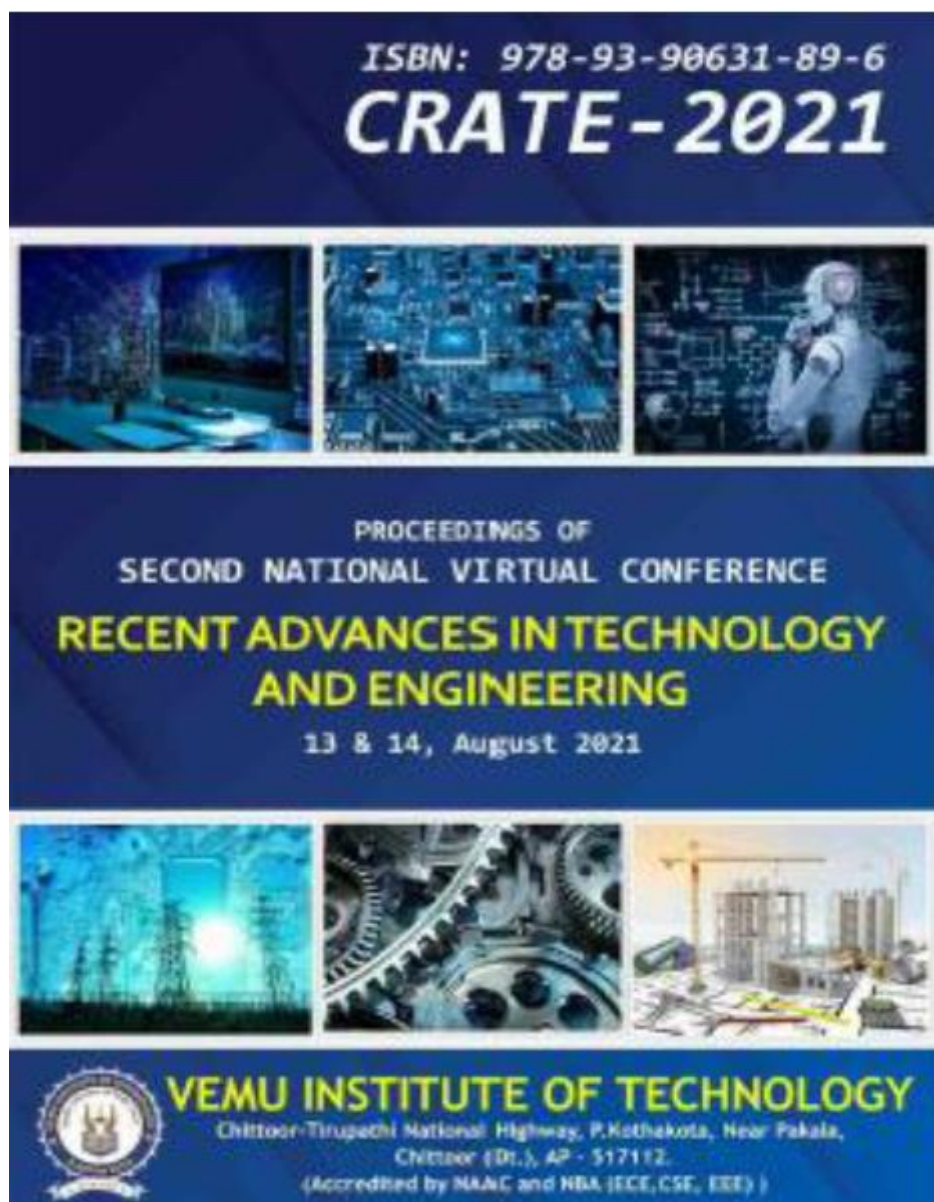
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Proceedings of Second National Virtual Conference on Recent Advances in Technology & Engineering (NCRATE-2021, 13th & 14th, August 2021)

Effect of Annealing on Structural and Optical Properties of Mn: ITO Thin Film

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Abstract.Thin films of Mn (5 at.%) doped ITO were coated on corning glass substrates using the electron beam evaporation technique. The substrates were maintained at a temperature of 350 °C. The deposited thin films were then air annealed at 100 °C, 200 °C, 300 °C and 400 °C for 1 hr. The structural properties of as deposited and air annealed films were studied. The effect of annealing temperature on the structural, compositional and optical properties of the thin films was studied using X-ray diffractometer (XRD) and UV-Vis-NIR Diffuse reflectance spectrophotometer (DRS).

Keywords: annealing, (Mn,Su) codoped ITO, thin films

1. INTRODUCTION

Different transparent conducting oxides (TCO) like ZnO, In₂O₃, TiO₂, SnO₂, CdO were doped with varied transition metals and studied the structural and optical properties of them [1-4]. The researchers are trying to find a way to increase the properties of TCO by annealing them. Annealing is a type of heat treatment to enhance the crystallinity and decrease the dislocation of atoms. The annealing affects the macroscopic characteristics of TCO in nanostructured state. This leads to change in structural and optical property of TCO on annealing. The TCOs find applications in LED, photodiodes, energy efficient windows, touch screens, surface layers in electroluminescent applications, solar cells etc. [5-13]. Among them, In₂O₃ is one of the best TCO material having high hardness, efficient chemical stability, high adhesion quality and photochemical properties. It finds applications in photovoltaic devices, biocatalytic redox transformations and flat panel displays

[14-20]. The influence of annealing on the properties of ITO has already been reported by many researchers [21-24]. The crystallite size is affected by the annealing temperature. Some of the researchers have shown that there is an increase in the crystallite size as well as enhancement in the optical properties on increasing the annealing temperature [25-28]. This manuscript deals with the effect of annealing on the structural and optical properties of Mn doped ITO thin film.

2. EXPERIMENTAL METHOD

The precursor powders of In₂O₃, SnO₂ and MnO₂ were taken in stoichiometry and milled for 16 hrs using planetary ball mill to form (In_{0.95}Mn_{0.05}Sn_{0.05})₂O₃ nanoparticles. After sintering the grinded (In_{0.95}Mn_{0.05}Sn_{0.05})₂O₃ nanopowder at 950 °C for 8 hrs, it was taken as sample in the graphite crucible. The deposition of (In_{0.95}Mn_{0.05}Sn_{0.05})₂O₃ on glass substrate was carried out using electron beam evaporation coating method. The substrate temperature was maintained to be at 350 °C and the vacuum is maintained at 2*10⁻³ mbar throughout the coating period. The deposited thin films were then annealed at various temperatures such as 100 °C, 200 °C, 300 °C and 400 °C in presence of air for 1 hr in horizontal tubular furnace. The structural and optical properties of as deposited and annealed samples were studied using X-ray diffractometer (XRD) and Diffuse reflectance spectra (DRS). The obtained results were compared and the influence of annealing on the properties was studied.

3. RESULTS AND DISCUSSION

Fig. 1(a) depicts the XRD profiles for as deposited and annealed (In_{0.95}Mn_{0.05}Sn_{0.05})₂O₃ thin films at

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8. Dr. B. Rosiline Jeetha

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Secure and Efficient Fire-fly Data Routing Algorithm for Wireless Sensor Networks in IoT Monitoring Systems

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Secure and Efficient Fire-fly Data Routing Algorithm for Wireless Sensor Networks in IoT Monitoring Systems

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Abstract. In the Electronics world the sensor is used in IoT applications. The sensed data need to be transfer to the appropriate devices as input for further processing. Clustering used to group the sensors which could form cluster and select the nodes head from the cluster. The head of each cluster receives the forwarded data through the cluster member and pass on to nearest permanent fixed station. Identifying cluster head and shortest route identification is a major challenge. This paper proposed a novelty on hybrid decision making algorithm with firefly routing algorithm (HDMFRA) for Cluster Head selection. This research work focusing of three main criteria which could save the energy and extend the life activation of the node, through the usage of energy, amount of nodes adjacent and energy consumption from permanent fixed station. To aggregate the data in optimized manner and to transfer the data in efficient manner Fire Fly routing algorithm was used. Simulation results show that proposed algorithm HDMFRA network in homogeneous environment is effective and prolonging the life time of the node by 15%.

1. Introduction

IoT is a networks which connects the object together. In urban areas for promoting new developments and functions IoT related applications were developed as it is technological revolution which connects the real world of physical devices in which wireless sensor plays a vital role to communicate and response according to the needs of the applications [1][12]. Sensor are very small and consumes very low-power. Inorder to transfer the data quickly the cluster head was needed which could decreases the utilizing of energy will be less and effective [2][14]. The active time of the sensor node will be more when the node utilized in the short network or by the non-hazardous areas. Replacing the battery of sensor in hazardous areas was very difficult. During sensor nodes in active stage at each moment there will be depletion of energy. Activating the data in the sensor and passing the data towards base station will consume more energy. Failure of single sensor nodes destruct whole networks [15]. As the Network lifetime depends on each node design the network in such a manner that energy should be efficiently used by the network. Huge amount of nodes and permanent fixed station [17] will form wireless sensor networks. More energy will be consumed when there was a communication between the sensor nodes every time with their neighbouring nodes.

The data sensed by the sensor of different application such room temperature monitoring system in intensive care unit called source networks and the base station called as the sink nodes. A sensor networks utilizes the limited energy supply in conventional sensor networks. Energy consumption will



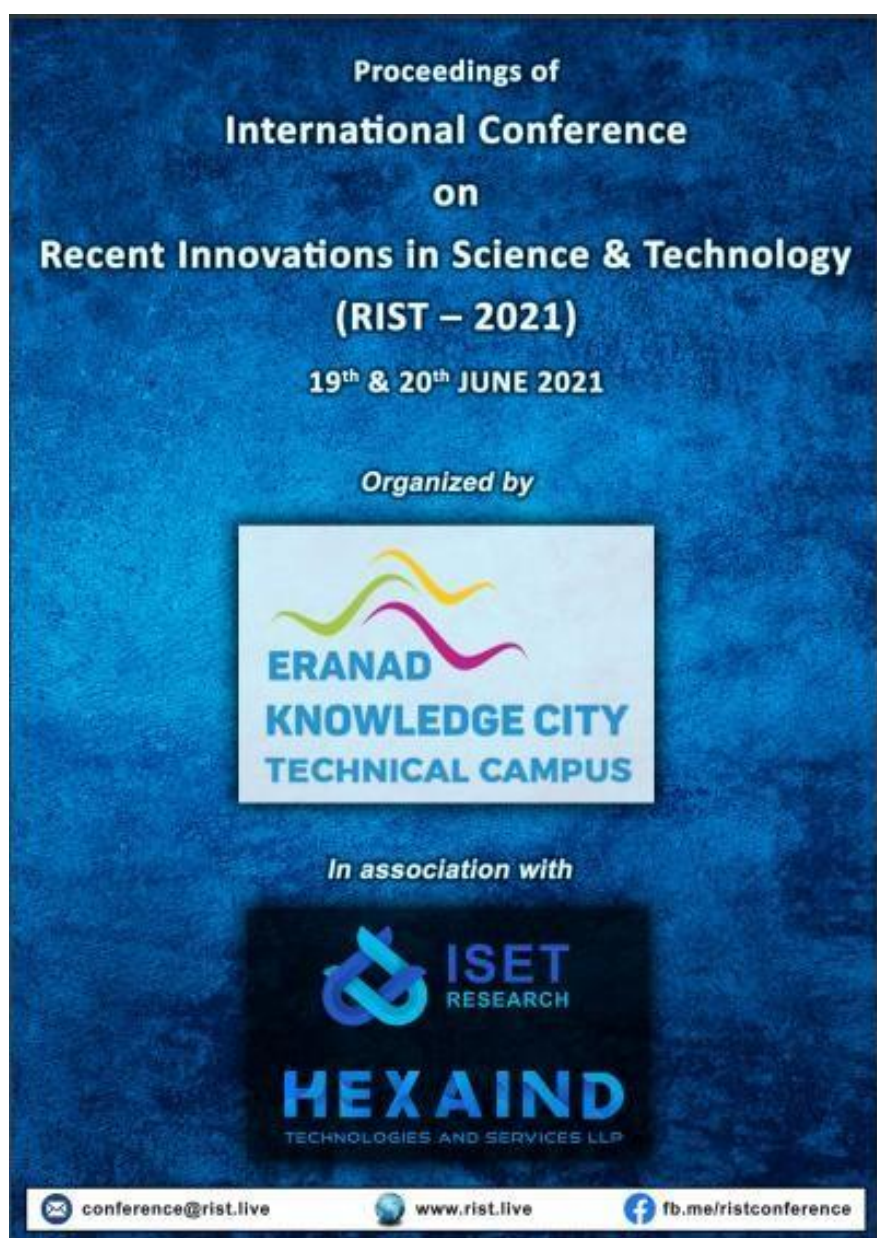
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Study On Knowledge and Skills About Nutrition Care Process Before and After Hospital Internship Among Dietetic Students

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ABSTRACT

The aim of the study was to compare the knowledge and skills of the dietetic students about Nutrition Care Process before and after internship. The respondents (n=107) selected were dietetic students who had undergone 6 months internship in a hospital setting. Online questionnaire (type form) was disseminated to the respondents. The data was analyzed using the paired sample t-test. The results of the study revealed that the level of knowledge attained on Nutritional assessment after internship (p=0.005) was high, skills obtained on Nutritional diagnosis showed significant difference (p=0.004) after internship, knowledge gained on Nutritional Intervention after the internship was higher (p=0.003) and there was a noticeable variance (p=0.001) in the skills acquired on Monitoring and Evaluation before and after internship. The study concluded that clinical judgment of the respondents was higher in post internship than in pre-internship and the nutrition care planning skills acquired during internship along with clinical exposure helped the students to enhance their skills.

Key words: Nutrition Care Process, Nutritional Assessment, Nutritional Intervention, Monitoring and Evaluation, Skills and Knowledge.

1. INTRODUCTION

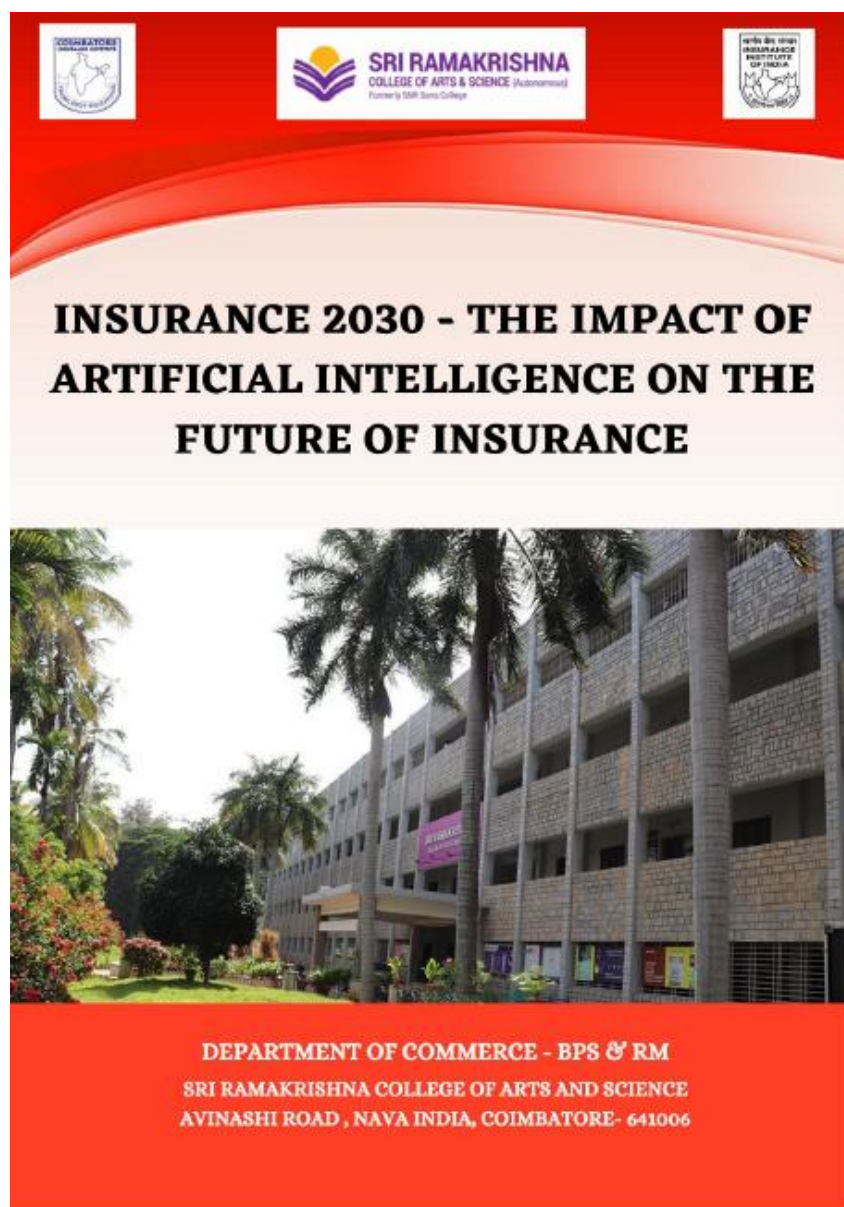
Nutrition care process (NCP) is a systematic process that contains four distinct and interrelated steps: Nutrition assessment is a systematic method of obtaining, verifying, and interpreting data required for identifying nutrition problems and their etiologies and significance. Nutrition diagnosis aids in determining the nutrition problems; the nutrition diagnosis statement is constructed on the basis of the nutrition assessment findings. Nutrition intervention is implemented for changing nutrition-related behavior, risk factors, environmental conditions, and health status and Nutrition monitoring and evaluation are used to identify the extent of progress and determine whether

more likely to improve nutrition outcomes by providing a systematic strategy that encourages critical thinking and problem-solving. International Dietetics and Nutritional Terminology (IDNT) implement a standard set of core nutrition care terms and definitions for the four steps of the nutrition care process. The use of International Dietetics and Nutritional Terminology (IDNT) promotes uniform documentation of nutrition care, expedites differentiation of the type and amount of nutrition care given, and affords a basis for linking nutrition care activities with actual or predicted outcomes.^[2]

The nutritional care offered in hospitals includes nutritional screening, comprehensive nutritional

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A STUDY ON THE ROLE OF BANKING SYSTEMS IN INDIA

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Abstract

An effective banking system always leads to a healthy economy. They play a decisive role in the development of the industry and trade. They are acting not only as the custodian of the wealth of the country but also as resources of the country, which are necessary for the economic development of a nation. They collect the surplus savings of the people and make them available for investment. They also create new demand deposits in the process of granting loans and purchasing investment securities. They facilitate trade both inside and outside the country. Commercial Bank in India comprises the State Bank of India (SBI) and its subsidiaries, nationalized banks, foreign banks and other scheduled commercial banks, regional rural banks and non-scheduled commercial banks. They help in promoting capital formation, encouraging innovation, monetization, influence economic activity, and act as facilitator of monetary policy. Banks provide loans to retailers, traders, wholesalers for their inventory and also help in transporting of goods from one place to another by providing all types of facilities, such as discounting and accepting bills of exchange, providing overdraft facilities, issuing drafts, etc. Commercial banks mostly provide short term loans and in some cases medium term financial assistance also to small scale units. As per the Reserve Bank of India (RBI), India's banking sector is sufficiently capitalized and well-regulated. The financial and economic conditions

consequently, the level of economic growth of India.

Key Words: Capital Formation, Monetization, Influence Economic Activity, Financial Assistance.

Introduction

Bank is a financial institution that performs several functions like accepting deposits, lending loans thus helps in agriculture and rural development etc. Bank plays an important role in the economic development of the country. Without a sound and effective banking system, no country can have a healthy economy. Activities of the commercial banks in India are expanding at a rapid space during the period after Independence. There is territorial as well as functional expansion of the activities of the bank. It is necessary to encourage people to deposit their surplus funds with the banks.

These funds are used -for providing loans to the industries thereby making productive investments. The most important role of a bank is to connect those who have capital with those who need capital. In recent years non-conventional sectors are receiving the attention of commercial banks in India. A better understanding of the implications of financing nonconventional sector by commercial banks is possible only if one looks back the position of commercial banks during the pre-nationalization era. India is not only the world's largest Independent democracy, but also, an

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11. Mrs.M. Rathii





Butterfly Algorithm Boosted Deep Random Vector Functional Link Network for Keystroke Dynamics

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Abstract. In the advanced information technology, cyber-attacks are crucial act which is spread throughout the world to hack confidential information such as intellectual property, secret of trade, banking details, etc. Handling such security threats is very challenging and many security schemes are in existence. Continuous Keystroke Dynamics Authentication (CKDA) is most important and interesting authentication technique which is non-intrusive, permanent and inconspicuous. It enhances the logical access security based on the typing rhythm. But CKDA needs a huge number of samples to analyse and register typing characteristics of users. There are many existing works on continuous authentication using standard machine learning models to understand its pattern. Still, there is an absence of deep understanding on keystroke forms depending on free text, mainly due to the adaptability and irregularities of free text keystroke. It is very challenging to signify discrete keystroke using statistical constrained keystroke time features. Thus, this paper focuses on constructing a boosted continuous identity authentication model using Deep Random Vector Functional Link Network (DRVFLN). Unlike standard deep learning model which uses random values for parameters involved in classification, DRVFLN assigns the free-formal parameter value using the knowledge of Butterfly Optimization Algorithm (BOA). The experimental results proved that the Boosted Deep Random Vector Functional Link Network (BDRVFLN) prominently produce higher accuracy rate in classification of users as genuine or impostor using Continuous Keystroke Dynamic Authentication.

Keywords: Security, Authentication, Continuous Keystroke Dynamic Authentication, Deep Random Vector Functional Link Network, Butterfly Optimization Algorithm, classification.

1 Introduction

Authentication is one of the important technique to ensure data integrity and user identity. Data integrity is secure data transmission between the network and the user within the optimal time assignment [1]. User identity is based on passwords, tokens or PIN numbers. Among several authentication models, keystroke dynamics is one of the strongest authentication systems which recognize the person by their typing rhythm. This increases the strength of security because it not only checks the correct password value, but also the typing rhythm for entering the password. Still, after proceeding initial log, the system does not know about the user change during each session. Suppose if the user fails to log out or unattended after logged on, without locking the system, then there is a high chance of impostor who will gain the access of the system. In such situation, the impostors need not worry about the password and pretend as genuine users with the typing rhythm. They may access the file, delete, copy or modify the content in the name of genuine user. This unsecured situation can be tackled by verifying that whether the user has changed after the log-on process. This system is known as continuous authentication system [2]. Since, the user still uses keyboard after the procedure of login, document typing, etc., keystroke dynamics can be used to accomplish continuous authentication. The major variance of Static Keystroke Dynamics and Continuous Keystroke Dynamics is in the former method typed information is fixed while in later, it is dynamic and continuous verification is done.

The two foremost goals of a novel continuous authentication system are the user should not be disturbed with their daily activities and every single keystroke has to be identified for discovering users' genuinity [3]. Many existing approaches are developed for continuous authentication based on verifying the genuineness of a user depending on fixed actions. Numerous datasets are used in this area of research to authenticate the users on static or continuous



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12. Dr.R.Nithya, Dr.D.Maheswari, Mrs.V.Manimekalai, Dr.B.Leelavathi



International Conference on Signals, Communication and Embedded Systems
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Global Technology Forum 2020

A STUDY ON FACTORS INFLUENCING AS A BEST PRACTICE FOR IMAGE CLASSIFICATION

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Abstract
No doubt, that image classification refers to a process in computer vision to classify images according to user specified features. Generally, CPU acts as a brain of computer in handling any task processing task assigned by human. Whereas, GPU is designed to process and identify the user specified features from high resolution images and videos. But still it is not possible by the research community to configure exactly in choosing the right factors for undergoing such classification using deep learning approaches [1]. This paper will motivate the researcher by providing some insights in handling such kind of work.

Keywords:
Convolutional Neural Networks, Tensor Flow, Activation Function, Data Augmentation.

1. INTRODUCTION

Image Classification is defined as steps involved in classifying each pixel into finite set of individual class based on its data value. Pixel mapping highly depends on satisfaction of set of rules to fit in a defined class. The class may either be known or unknown. If the user makes use of training data to separate the class then it is possible to know the class or else the classes may be unknown. Classification is the main step followed in Feature Extraction, Object segmentation, image mosaic and pre-processing and object classification. There are wide range of classification methods available in research domain to identify the set of features or parameters to identify each object or image. These techniques highly focus on learning how to classify objects using training set. The classifying algorithms are built with a main objective to identify more specific features in the images similar to human as shown Fig.1.

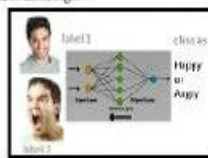


Fig.1. Image Classification using Deep Learning

Depending on prior knowledge of classes, the technique can be classified into supervised or unsupervised. Under supervised, it identifies and recognizes the intrinsic of high impact information in the image; known as training sets. The image classification then uses this piece of information to classify the input images. It has both its advantages and disadvantages. Large set of training data is needed but the advantage it is easy to identify and give the solution for problems in classification. In

unsupervised learning, the dataset is clustered or grouped based on distance between the pixels that act as a feature without the use of training data. Most of the deep learning researchers focus on how to improve the performance of deep learning algorithm in classifying images or reducing the loss of accuracy. This paper is enriched with ideas to identify the factors that has more impact in deciding about the accuracy of the model.

1. DOMINANT FACTORS

Following are the factors that are influenced as a best practice for image classification.

1.1 ARTIFICIAL NEURAL NETWORKS

Artificial Neural Networks is a bio inspired network, which act similar to human neural network as shown in Fig.2 in handling the classification and prediction problem.

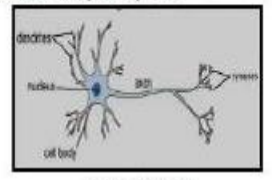


Fig.2. Neural Network

And thus, the Artificial Neural Network comes under the umbrella of Deep Learning concept. It deals with integration of images based on visual content as it includes input layer, hidden layer and output layer. All the inputs are fed through input layer. The input received from previous layer is sent to hidden layer for processing. Initially all the input nodes are set with the values and step by step the activation values are calculated for each of the hidden layer. This process is actually termed as Feed Forward method. Whereas the goal of the back propagation is to incrementally adjust the weights step by step in order for each of the nodes to produce values as close as possible to the expected values from the training data. There can also be more than one hidden layer. The output layer thus gives back the processed data as output. According to the weights added at the input layer, the number of hidden layers is produced. The weights are updated based on appropriate use of activation function. Finally, the results are compared with the target received at the output layer as shown in Fig.3.



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COMPARISON OF VARIOUS ACTIVATION FUNCTION USED FOR CLASSIFYING IMAGES

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Abstract

The main objective of this paper is to focus on step by step procedure involved in underlying image classification using deep learning network. It deals with assigning of images to particular class by a machine similar to human. The proposed paper focuses elaborately on the use of Convolutional Neural Networks (CNN) for underlying image classification through tensorflow framework. The proposal has also included by comparing the accuracy of classifying images on Graphics Processing Unit (GPU) with various activation functions like sigmoid, softmax, relu and leaky etc., The proposed model thus results with 83% of accuracy with relu – softmax activation.

Keywords:

Neural Networks, Artificial Neural Networks, Deep Learning, Convolutional Neural Networks, Tensorflow, Activation functions

1. INTRODUCTION

Image classification is performed to identify the unique feature of the image - by assigning the pixels in a digital image to set of classes. It is also referred to as a process in computer vision to classify images according to user specified features. The classifying algorithms are built with a main objective of making machine to identify the more specific features in the images similar to human as shown in Fig.1. There are wide range of application of image classification and they are Automated Image Organization, Stock Photography and Video Websites, Visual Search for Improved Product Discoverability, Satellite Remote Sensing, Image Classification for Websites with Large Visual Databases, Image and Face Recognition on Social Networks, Merged Reality, Interactive Marketing and Creative Campaigns, Automobile, Gaming, Healthcare and Reality Industry etc.,

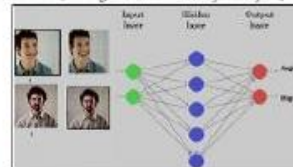


Fig.1. Image Classification

2. NEURAL NETWORKS (NN)

The biological representation of neurons in the brain and its chemical reactions and connections are visualized in Neural Network. The nerve cell of human brain includes four main parts namely Dendrite, Soma, Axon and Synapses. Dendrite receives

signals from other neurons. Some of cell body accumulates all the incoming signals to generate output. When the accumulation reaches a particular threshold value it then travel down the axon to other neurons. Synapses are just a point of interconnection of one with other. Neural network as shown in Figure 2, is thus a highly interconnected network of billions of neurons with trillions of interconnection between them.

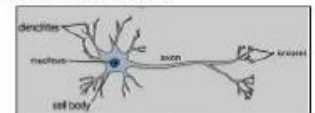


Fig.2. Neural Network

3. ARTIFICIAL NEURAL NETWORKS (ANN)

A biological inspired network with artificial neurons gets configured to perform a specified task called Artificial Neural Networks. Their computational model is inspired by human brain. It also deals with classification and prediction problems, which come under the umbrella of Deep Learning concept. It is one of the major sub-domains of machine learning techniques based on artificial neural networks. Thus an artificial human nervous system receives the input data, process them and transmit the information at the end of computation. It deals with segregation of images based on visual content as it includes input layer, Hidden layer and Output layer. All the inputs are fed through input layer. The input received from previous layer is sent to hidden layer for processing. Initially all the input nodes are set with the values and step by step the activation values are calculated for each of the hidden layers. This process is actually named as Feed-Forward method. Whereas the goal of the back propagation is to incrementally adjust the weights step by step in order for each of the nodes to produce values as close as possible to the expected values from the training data. These can also be more than one hidden layers. The output layer then gives back the processed data as output as shown in Figure 3. For example, if the problem is to convert Celsius to Fahrenheit the formula is algorithm is $F = 1.8C + 32$. So if this problem is provided with a set of input values in Celsius, to get the output it is called Feed-Forward method. Instead if this problem is provided by increasing step by step the weights of input nodes to reach the formula or algorithm back then it is called back propagation method.



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14. Mrs.M. Rath

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Global Technology Forum 2020

A STUDY ON DEEP LEARNING APPROACH TO KEYSTROKE DYNAMICS AUTHENTICATION

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Abstract

Biometric authentication is one of the methods to verify user's identity based on either the physiological or behavioral characteristics. Keystroke dynamics authentication is one of the biometric authentication methods that works based on the typing patterns of the individual. Keystroke dynamics is the capability of a machine to capture inefficient human activities. It is accomplished by studying how human brain think and how human brain, decide and work while trying to solve problems. Machine learning is a type of Artificial Intelligence that provides computers with the ability to learn without being explicitly programmed. Deep learning is a subfield of Machine Learning which has emerged first and expanded the applications in various domains like healthcare, security, bioinformatics etc. This paper presents a study on deep learning model that has been applied to authenticate the users based on keystroke dynamics and other biometric authentication methods.

Keywords

Keystroke Dynamics, Deep learning, Machine learning, Authentication, Deep Neural Network

1. INTRODUCTION

Security in computer systems is an essential aspect of day-to-day life. Access to personal and confidential information has increased now a day through various channels especially via internet. Usual methods of security like passwords or PIN numbers can be easily guessed or stolen by the intruders. Hence it is important to safeguard the system by using the passwords that are difficult to guess. Biometrics is one of the methods that are utilized to confirm the client's entrance to various devices. The biometric patterns of the clients can be of two significant types namely physiological and behavioral characteristics. Physiological characteristics depend on the physical attributes of a person such as fingerprint, hand geometry, iris recognition, face recognition etc. Behavioral characteristics are related to the behavioral pattern of a person such as signature recognition, voice recognition, stylometry, keystroke dynamics etc. [1]. The authors are working on continuous keystroke authentication methods by adopting different methodologies like Euler movement firefly algorithm [2], Adaptive fuzzy chaotic genetic clustering method [3], Neuro-morphological method of identification [4]. As a part of the research, this paper is intended to make a study on deep learning approach to biometric authentication methods and focus more on keystroke dynamic authentication.

2. KEYSTROKE DYNAMIC AUTHENTICATION

Traditional authentication methods such as passwords, face, and fingerprint recognition have few shortfalls. Passwords may be stolen or forgotten, face and fingerprint recognition need

additional hardware. Keystroke dynamics is a behavioral biometric method of authentication which is based on the typing pattern of a person on the device like keyboard, mobiles or range of mouse etc. Identification and verification are two important phases in keystroke dynamics authentication. In the enrollment phase, users' data are collected such as their username, password, their typing pattern etc. A template is created by extracting the timing features of the keystrokes. This is stored in the users' profile database. The pattern of errors that two users make is different like typing the characters in reverse, typing adjacent letters together, holding down the shift key etc. The users' keystroke timing features are used in the verification phase to verify if the user is a valid user or not.

The most important features of Keystroke Dynamics are hold time and the flight time. Hold time or dwell time is the span of time for which the key is held down, i.e. the time between the key press and key release of a key. Flight time is the time interval between the key press of one key and key press of another key [5]. The keystrokes are captured using fixed text or free text. Fixed text methods use static text as passwords where as in the free text method, the user is questioned continuously throughout the login session which enhances the security. To classify the user as a valid user or not, methods like Support vector machines, Neural networks, Gaussian model, K-Nearest neighbors, Decision tree, Random forest etc. are there in the literature. To assess the performance of the classifiers, the most commonly used metrics used are False Acceptance rate (FAR) which is the probability that a system wrongly classified an impostor as a genuine user, False Rejection rate (FRR) is the probability a system incorrectly classified a genuine user as an impostor, Equal Error rate (EER) is where both FAR and FRR becomes equal in the ROC (Receiver operating characteristic) curve [6].

3. MACHINE LEARNING VS DEEP LEARNING

In 1959, Arthur Samuel has defined Machine learning (ML) as a "field of study that gives computers the ability to learn without being explicitly programmed". ML is a branch of Artificial Intelligence which mainly focuses on classification and regression based on the features that are learnt from the training data. Machine learning or deep learning approaches are classified into 3 types namely supervised, unsupervised and semi-supervised. An input and a class label are included for each instance in supervised learning. In this algorithm, the training data are analyzed and their results are utilized to map new instances. In unsupervised learning, the algorithm learns from given examples without any associated response, and determines the data patterns on its own. Some supervised learning is combination of supervised and unsupervised learning methods [7].



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15. Dr. S. Eswaramoorthi

Journal of Physics: Conference Series

PAPER • OPEN ACCESS

MHD bioconvective flow of a thermally radiative nanoliquid in a stratified medium considering gyrotactic microorganisms

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MHD bioconvective flow of a thermally radiative nanoliquid in a stratified medium considering gyrotactic microorganisms

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ABSTRACT

The impact of gyrotactic microorganisms of a stratified flow of a thermally radiative NL with heat absorption is highlighted. In addition, magneto NL with an inclined magnetic field is included. Suitable transformations are adopted to convert the governing PDEs into an nonlinear ODEs. Homotopy analysis method (HAM) is employed to solve these ODEs analytically. The impact of sundry parameters on VP, TR, NPVP, MMDP, SIC, LNN and LEMM are graphically explained. We compare our results to available results in literature survey.

Keywords: Nanoliquid, Heat generation/absorption, Gyrotactic microorganisms, Radiation, Stratification.

1. Introduction

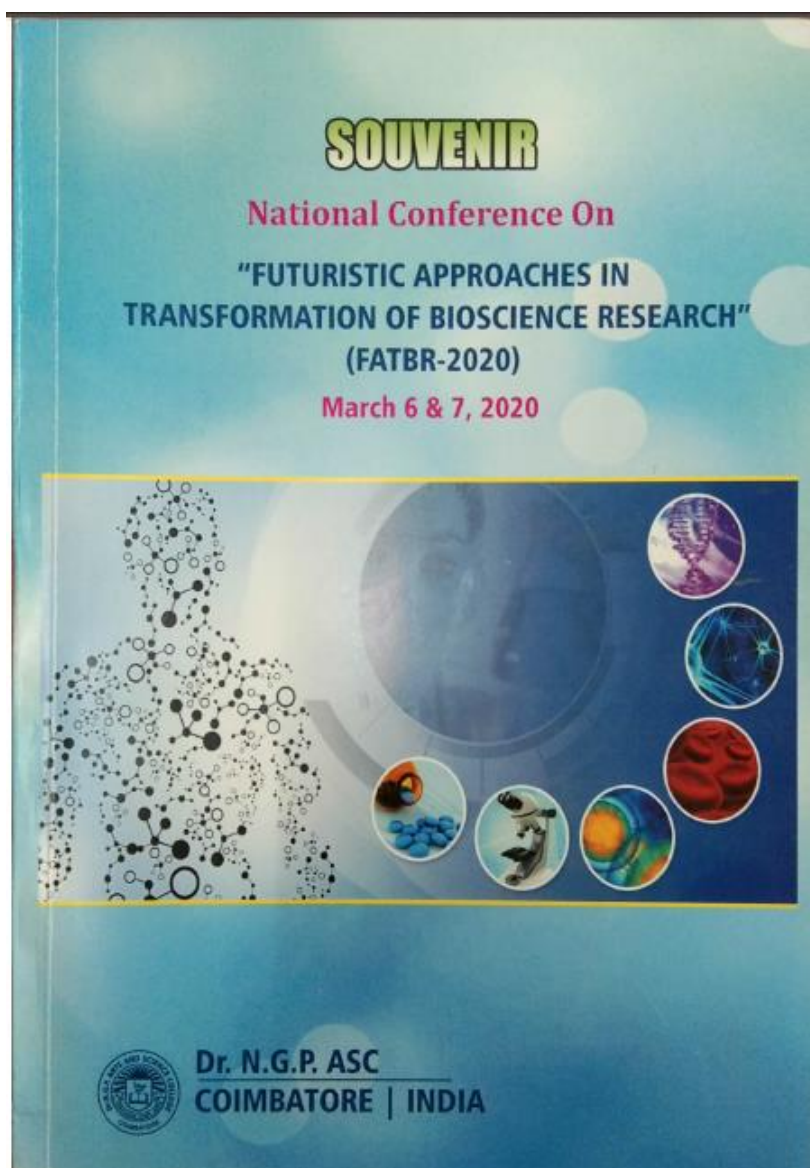
Most of the engineering and industrial processes, the HT phenomenon is essential. The ordinary fluids, like, ethylene, oil, water, glycol, toluene are poor HT properties, since they have poor thermal conductivity. Many scientists tried in several ways to raise the thermal conductivity. One of the simplest method is to suspend nano-sized particles, such as gold, titanium, aluminum, copper, iron or their oxides in the ordinary liquids to enhance its thermal properties. These liquids are used in microchips, fuel cells, microelectronics, solid state lightening, bio-medicine, etc. The NL flow over a stretching tube was analyzed by Ahmed et al.[1]. Kuzmani et al.[2] found the analytical and numerical solutions of viscous NL flow past a moving wedge. Chemically reactive NL flow over a wedge with suction and heat absorption was analyzed by Kuzmani et al.[3]. They found that the HT coefficient enhances with raising the values of chemical reaction parameter. Some useful studies in this direction are ([4]-[6]). Bioconvection is the microscopic convection of liquid which is created by density gradient when swimming of motile microorganisms. It is used in bio-fuel, promising renewable power source, bio-diesel and hydrogen gas. The stability of bioconvection in a porous medium was examined by Kuznetsov and Avramenko[7]. Nguyen-Quang et al.[8] analyzed the stability of gyrotactic micro-organisms in a porous medium. The impact of bioconvective NL with gyrotactic microorganisms was

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16. Dr. S. Gowri





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FATBR-2020-BC-8

Nanoparticle

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Abstract

Nanotechnology is the engineering of functional systems at the molecular level. They have prominent role in applied science and technology which helps in scientific research. The development of nanotechnology is very active around the world. Nanotechnology is an emerging and rapidly growing field because of its greatest application in the biological field. Hydroxyapatite is a naturally occurring mineral which is composed of calcium and mineral phosphorous. Hydroxyapatite is the most stable calcium phosphate compound under physiological conditions as temperature, pH and composition of the body fluids. Hydroxyapatite nanoparticles have various applications in different field such as biomedical, agriculture etc. HAP nanoparticles have. There are different chemical methods used for the synthesis of hydroxyapatite nanoparticles. Green synthesis helps to reduce the hazardous chemicals. The present study is aimed to synthesize the HAP nanoparticles from plant extract and to check its antibacterial activity. The hydroxyapatite is synthesized by the calcium chloride and disodium hydrogen phosphate and the after several process powders is obtained and the HAP contained powder was given for the characterization. The Antibacterial activity results will be helpful to find out whether the hydroxyapatite can be active against gram positive and gram negative bacteria and making it useful for clinical applications and environmental fields in future.

Keywords: Nanoparticles, hydroxyapatite, green synthesis, characterization, antibacterial activity

S.Gowri, P. Chidambara Rajan, J. Rengaramamujam, D. Sridevi, S. Kokila (eds.)

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17. Dr. S. Gowri

FATBR-2020-BC-10

Formulation and Evaluation of Instant Soup Mix Powder using Herbal Leaves

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Abstract

Soup is probably one of the earliest foods of human being, sincere it must have developed about the time when boiling was establish as very fast form of cuisine. Soup can be prepared from different food ingredient in various forms, of which dry soup mixes are more preferred by consumers because of its comfort, ease in formation, shelf stability and popular appealing capability. Herbal leaves can effectively be utilized in formation of instant soup mix powder to overcome its poor acceptability and lowers lucrative prices. Soups can be prepared of chicken, meat, sea food or vegetables and may be as a liquid or in dry powdered form. Although different in style, technically all the soup formation involves processes of boiling water extraction and heat induced composition interaction. The present study aimed to make soup powder from different herbal leaves and to find anti- microbial and anti - oxidant activity. The ethanolic extraction was done for different herbal plant leaves. The anti-microbial and antioxidant activities results will be helpful to check the nutritional benefits.

Keywords: soup powder, anti-microbial activity, anti- oxidant activity, herbal leaves.

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18. Dr. N. Kannikaparameswari

FATBR-2020-BC-22

Synthesis and Characterization of Nano Hydroxyapatite Bioceramic for *In vitro* Drug Delivery

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Bioceramics are refractory polycrystalline compound which are implemented in orthopaedic load bearing coatings. Dental implants, Bone grafting. Bone cements. Bioceramics when used as a endodontic sealer they are in the form of Hydroxyapatite (HAp). Hydroxyapatite (HAp) is the most widely accepted biomaterial for the repair and reconstruction of bone tissue defects. The present study is based on HAp synthesization using sol - gel method. The drug was loaded in presence of pure HAp. Precursors like calcium nitrate tetrahydrate and diammonium hydrogen orthophosphate were used and ammonia solution was added to maintain the pH value at 10.0 throughout the reaction. The synthesized HAp and drug loaded HAp were characterized using UV, XRD, RAMAN, FTIR, SEM. Drug loading, drug release studies . Results show that the average crystallite size for prepared HAp and drug loaded HAp with polymer are ~ 30 to 300 nm respectively was calculated using XRD and morphology of pure HAp and drug loaded HAp with polymer was found using SEM. Drug loading and release percentage was calculated. Keeping the above points in the present study was aimed to produce the biocompatibility and bioactivity of HAp.

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19. Dr. N. Kannikaparameswari

FATBR-2020-BC-23

Screening of Chemical Reduction Rate In Wastewater Using Algae

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Currently global issues raise unavoidable challenges for our use of natural resources. Organic and inorganic substances which were released into the environment as a result of domestic agriculture and industrial wastewater activities lead to pollution and endanger our nutrition and health. The development of efficient wastewater treatment technologies and circular economic approaches is thus becoming increasingly important. The reduction rate of chemical in the industrial wastewater and the biomass of the algae were determined. This review concern algae based wastewater treatment for the potential chemical reduction of industrial wastewater with low level of expenses and beneficial to the industrial applications.

Key word: Heavy metals, algae, wastewater, phytoremediation.

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20. Dr. N. Kannikaparameswari

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FATBR-2020-BC-29

Evaluation Of *In Vitro* Antioxidant and Anti-Diabetic Activities Of *Glycyrrhiza Glabra* Extracts

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Diabetes is a most common metabolic disorder characterized by abnormally increased plasma glucose levels. Oxidative stress plays an important role in diabetic physiopathology; hence, the interest of using natural antioxidants as therapeutic tools exists. Inhibitors of carbohydrate-hydrolyzing enzymes (such as α -glucosidase and α -amylase) offer an effective strategy to regulate/prevent hyperglycemia by controlling starch breakdown. The aim of this study was the evaluation of *in vitro* antioxidant activity and inhibitory potential of organic extracts from *Glycyrrhiza glabra* root.

Keyword: *Glycyrrhiza glabra*, antioxidant activity and anti-diabetic activities.

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21. Dr. N. Kannikaparameswari

SOUVENIR | Futuristic Approaches In Transformation Of Bioscience Research (FATBR-2020)

FATBR-2020-BC-33

Evaluation of Antioxidant and Anti-Diabetic Activities of Herbal Formulation of Medical Plants

Srinithi K, Boopathi M, Sowmiya P, Chandru K, Sumangali M, Manjueswari D, Yuvaraj K, J, N Kannikaparameswari

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Diabetes is a common metabolic disorder characterized by abnormally increased plasma glucose levels. Postprandial hyperglycemia plays an essential role in development of type-2 diabetes. Inhibitors of carbohydrate-hydrolyzing enzymes (such as α -glucosidase and α -amylase) offer an effective strategy to regulate/prevent hyperglycemia by controlling starch breakdown. Natural α -amylase and α -glucosidase inhibitors, as well as antioxidants from plant-based sources, suggest a source of dietary ingredients that affect human physiological function in order to treat diabetes. Several research studies have investigated the effectiveness of plant-based inhibitors of α -amylase and α -glucosidase, as well as their antioxidant activity. The aim of this review is to summarize the antidiabetic and antioxidant properties of *Gymnema sylvestre* & *Vernonia anthelmintica* plants.

Keyword: Phyto chemical, α -amylase, α -glucosidase, antioxidant.

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22. Dr. T. Indhumathi

SOUVENIR | Futuristic Approaches In Transformation Of Bioscience Research (FATBR-2020)

FATBR-2020-BC-11

Antioxidant and Anticancer Activity of Natural Compound from Banana Anther (Anthocyanin Extract) against Colon Cancer (Ht-29) Cell Line

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Anthocyanins are potent anti-carcinogenic and anti-oxidant properties against several cancers thus demonstrating potential for cancer prevention include free radical scavenging activity. In the present study we have investigated the chemopreventive and antioxidant activity of anthocyanin extracted from (*Musa sp*) banana anther, Anti-carcinogenic activity against human colon carcinoma HT-29 cell line and In the case of antioxidant study, acidified methanolic extract has shown concentration of 20µg/ml kept most of the cancer cells viable without showing any notable effect on cancer cells. In this reaction with the highest sample concentration of 200µg/ml showed nearly 55% mortality on cancer cells. In MTT assay it changes to monomeric form and stains cells in green fluorescence. When the cells are treated with the sample concentration of 71.18 g/ml, JC-10 dye concentrates in the mitochondrial matrix where it forms red fluorescent aggregates eliminating most of the cancer cells. This study concludes that enhancing the absorption of anthocyanins and their metabolites may be necessary for their optimal use in the chemoprevention of human cancer, particularly in colon cancer cells.

Keywords: *Musa sp*, antioxidant and anticancer activity

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23. Dr. T. Indhumathi

FATBR-2020-BC-12

Isolation of Pathogens from Food Materials and Evaluation of Antibacterial Activity of *Momordica charantia* against Isolated Pathogens

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Prevention of food spoilage and food poisoning pathogens is usually achieved by use of chemical preservatives which have negative impacts including -human health hazards of the chemical applications, chemical residues in food and feed chains and acquisition of microbial resistance to the used chemicals. Because of such concerns, the necessity to find a potentially effective, healthy safer and natural alternative preservative increased. Within these texts, plant extract have been used to control food poisoning diseases and preserve food stuff. *Momordica charantia* contains phytochemical and antioxidant that promote health and help in fighting against disease. In the present study investigated antibacterial activity of stem extract of *Momordica charantia* against *Salmonella typhi*, *S. aureus*, and *E.coli* using disk diffusion method and which exhibited a high zone of inhibition in *Staphylococcus aureus* and low in *Salmonella typhi*. Antioxidant potential of the extracts were assessed by employing different in-vitro assays such as DPPH, FRAP, total anti-oxidant. In the results reported that total antioxidant water extract of *Momordica charantia* were 87µg/ml. This study concluded that use of natural alternative preventives to control food poisoning diseases and preserve food stuff avoiding chemical antimicrobial agent applications.

Keywords: *Momordica charantia*, Antibacterial activity, Antioxidant, Natural preservatives.

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24. Dr. K. Rajathi

FATBR-2020-BC-14

Comparison of Vermicompost Characteristics Produced from Vegetable and Fish Wastes and its Combined Effects with Inorganic Fertilizers on the Growth and Yield Attributes of Okra Plant (*Abelmoschus Esculentus*)

Rajathi Krishnasamy, Divya Ganapathi, Nandita Ravichandran, Pavithra Periyasamy, Pradheep Gandhi, Santhiya Rajamani, Vidhya Ganesan and Yokesh Shanmugam
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The present study entitled -Comparison of vermicompost characteristics produced from vegetable and fish wastes and its combined effects with inorganic fertilizers on the growth and yield attributes of Okra plant (*Abelmoschus esculentus*)| was conducted. The objective of the study was to assess the manurial value of compost prepared from vegetable and fish waste and to evaluate the response of Okra plant (*Abelmoschus esculentus*) for vermicompost and inorganic fertilizers using individual and dual composition. Soil analysis was carried out to assess the residual effect of organic manures and inorganic fertilizers on soil fertility. Compost analysis was also carried out to determine the maturity and the nutrient content respectively. Ten different treatments were setup along with control for comparative analysis. The experiment was carried out for a period of 45 days. The plants were uprooted after 15, 30 and 45 days of sowing and analyzed for the biometric parameter namely plant height, fresh weight, dry weight and number of nodules. The yield characteristics such as number of fruit per plant, fruit length and fruit weight. The biochemical parameters analyzed were namely chlorophyll, phenols and flavonoids.

Keywords: *Abelmoschus esculentus*, Vermicompost, Inorganic fertilizer, Biometric parameters, Yield characteristics, Biochemical parameters.

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25. Dr. K. Rajathi

SOUVENIR | Futuristic Approaches In Transformation Of Bioscience Research (FATBR-2020)

FATBR-2020-BC-31

Herbal Mouth Wash- A Possible Remedy For Oral Cancer

K.B Leneey green, Ritty Joseph and K Rajathi

Department of Biochemistry, Dr N.G.P. Arts and Science College, Coimbatore- 641048.

The incidence of cancer has increased significantly worldwide, being one of the most important public health problems. Oral cancer has its multifactorial etiology, resulting from the interaction of intrinsic and extrinsic carcinogenic factors. Oral cancer is defined as uncontrollable growth of cells seen in the oral cavity. It appears as a growth or sore in the mouth that does not cure. Oral cancer includes cancers of the lips, tongue, cheeks, floor of the mouth, hard and soft palate, sinuses, and pharynx. Squamous cell carcinoma is the most common type of oral cancer. The main objective of this project is to evaluate the anticancer activity of *Curcubita pepo* fruit extracts on a human oral cancer cell line (KB) and analysed the antioxidant activity of the fruit extracts was evaluated by using the DPPH assay while the anti-proliferative activity was assessed by using the MTT assay. The morphological characteristics of apoptotic cells were examined by using the dual acridine orange/ethidium bromide staining. Flow cytometry was used to evaluate the induction of multi-caspase activity and changes in the cell cycle. The project finally ends with a new product that will help us to prevent oral cavity diseases mainly cancer.

Key word: Oral cancer; *curcubita pepo*; oral cavity; anti cancer; mouth wash

FATBR-2020-BC-32

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26. Dr. D. Pradeepa

FATBR-2020-BC-5

IN VITRO ANTI ARTHRITIC ACTIVITY OF STEM OF CALOTROPIS GIGANTEA OF METHANOLIC EXTRACT

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Abstract

Rheumatoid arthritis is an immune mediated inflammatory disease (IMID). It occurs when our immune system attacks the tissue near joints, this is due to release of certain chemicals and enzymes that begin to eat away the cartilage and bones. It affects all the joints in the body, some forms of arthritis can also affect the body's internal organs. The symptoms of Rheumatoid arthritis includes inflammation, pain, swelling and stiffness of the joints, it can also lead to deformity and disability of the joint in severe cases. There are several causes for Rheumatoid arthritis, these causes are unknown but some include genetic factors, family history, age, environmental factors, hormones, smoking etc. Even modern drugs used for the better improvement of the symptoms, offer only temporary relief and produce side effects, so researchers rely on natural remedies, for treatment of various diseases, with efficacy and safety. *Calotropis gigantea* is a medicinal plant which is indicated for the treatment of arthritis in folklore medicine. The present study was aimed at the investigation of anti-arthritic activity in methanolic extract of stem of *Calotropis gigantea*. The anti-arthritic activity of stem of *Calotropis gigantea* extract was done by inhibition of protein denaturation and Human red blood cell membrane stabilization (HRBC) *in vitro* methods. The methanolic extract of stem of *Calotropis gigantea* was subjected to *in vitro* inhibition of protein denaturation in various concentration i.e. 20, 40, 60, 80, and 100 µg/ml. HRBC method also used for the estimation of anti-arthritic activity from in various concentration 20, 40, 60, 80, and 100 µg/ml. The effect of stem extract on protein denaturation gets increased with increased concentration. The present study is concluded that the stem of *Calotropis gigantea* more potent anti-arthritic activity.

Keywords: *Calotropis gigantean*, Anti-arthritic activity, Protein denaturation.

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27. Dr. D. Pradeepa

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FATBR-2020-BC-7

Anticancer Activity of *Andrographis paniculata* against Human Liver (Hep G2) Cancer Cell Line

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Abstract

Cancer is one of the most leading cause of death worldwide. Plants are used to cure various diseases which are known to possess anticancer activities against different human cancer cell lines. In this report, we studied the *in-vitro* anticancer properties of *Andrographis paniculata* plant against liver (HEP- G2) cancer cell line. The plants were shade dried and extracted with aqueous solvents. Anticancer property of *A. paniculata* plant extract was analyzed by Spectrophotometric MTT and LDH assay method. The results showed that the aqueous extract of *A. paniculata* with IC 50 value 174.29µg/dl. From the analysis, aqueous extract of *A. paniculata* shows excellent anticancer activities against different cancer cell lines.

Keywords: *Andrographis paniculata*, liver cancer cell line, antioxidant activities, MTT assay, LDH assay.



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28. Dr. D. Pradeepa

SOUVENIR | Futuristic Approaches In Transformation Of Bioscience Research (FATBR-2020)

FATBR-2020-BC-13

Phytochemical Screening and Evaluation of Antioxidant Activity in Various Extracts of

Trachyspermum ammi Seeds

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The objective of this research is to conduct the preliminary phytochemical screening, total flavonoid and phenolic contents assays of various solvent extracts of *Trachyspermum ammi* seed. Phytochemical screening was carried out according to the method of Trease and Evans, total flavonoid content was measured by the aluminium chloride colorimetric assay and total phenolic content was estimated spectrophotometrically by Folin-Ciocalteu method. Preliminary phytochemical screening reveals the presence of phenolics, flavonoids, alkaloids, tannins, terpenoids in all the three different extracts (methanolic, ethanolic and aqueous). Methanolic extract of seed has the richest content of both phenolics and flavonoids i.e. (4.27 mg GAE/g and 0.25 mg QE/g) respectively, and aqueous extract was the least i.e. (1.32 mg GAE/g and 0.164 mg QE/g). All the extracts were not significantly different with one another ($p > 0.05$). It can be hypothesised that the high contents of phenolic compounds of *Trachyspermum ammi* seeds indicated that these compounds contribute to the antioxidant activity and can be regarded as promising plant species for natural sources of radical scavenging activity with potential value for treatment of many life threatening diseases.

Keywords: phytochemical, flavonoid, phenolics, *Trachyspermum ammi*



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29. Dr. D. Pradeepa

FATBR-2020-BC-30

Biogas and Biofuel Production By Vegetable And Food Wastes By Hydrothermal Liquefaction And Anaerobic Digestion

Arunima Surendiran, Divvadarshini Palanisamy, Sneha Sugumar and Dr. Pradeepa Duraisamy*

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Fossil fuels are considered as non-renewable resources and consist of coal, oil, and natural gas. They release carbon dioxide, a potent greenhouse gas, into the atmosphere when burned. Greenhouse gases trap heat from the sun in the Earth's atmosphere, causing temperatures to rise. While in the case of biofuels and biogas they emit lesser carbon which actively takes part in the carbon cycle of the environment. Biofuel and biogas production from plant resources may lead to food scarcity. In order to prevent these conditions, an environmentally efficient approach is required. As an alternative the vegetable and food wastes are used for the production of biogas and biofuel. The idea is to use the principle of hydrothermal liquefaction (pressure cooking technique) which will break down the long carbon chain molecules in biomass and oxygen is removed in the form of H₂O (dehydration) and CO₂ (decarboxylation). The residual carbaceous phase produced after hydrothermal liquefaction is subjected to anaerobic digestion in which the organic material is biochemically digested into carbon dioxide (CO₂) and methane (CH₄) by the anaerobic microorganisms. The liquid phase is subjected to chemical treatment in order to produce efficient biofuel.

Keyword: Hydrothermal liquefaction, anaerobic digestion, biofuel

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30. Dr. V. Dhana Rangesh Kumar

SOUVENIR | Futuristic Approaches In Transformation Of Bioscience Research (FATBR-2020)

FATBR-2020-BC-9

Phytochemical Analysis and *In Vitro* Antioxidant Activity of Herbal Formulation of Medicinal Plants

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Abstract

Plants based antioxidants are now preferred to synthetic ones because of safety concerns. There is an increasing interest in natural antioxidants e.g. Polyphenols, present in medicinal and dietary plants, which might help prevent oxidative damage. Natural antioxidant increases the antioxidant capacity of plasma and reduces the risk of disease. As such developing a polyherbal formulation will definitely produce synergistic effect as needed comparable to standard drugs that are available in market all over the world. The polyherbal formulation, which has a combination of medicinal herbs such as *Zingiber officinale*, *Nigella sativa*, *Plectranthus amboinicus*, *Piper cubeba*, and *Trigonella foenum graecum* powder was tested for its antioxidant activity total phenolic and alkaloid contents in vitro. The purpose of the present study was to investigate the in-vitro antioxidant total phenolic and alkaloid content of polyherbal formulation and its application for treating life threatening disease such as cancer, cardiac disease, and diabetes mellitus. The paper reports the result of such studies in order to orient future investigations towards the finding of new, potent safe and easily available food antioxidants.

Keyword: Poly herbal formulation, alkaloids, flavonoids, anti-oxidant.

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31. Dr. V. Dhana Rangesh Kumar

FATBR-2020-BC-24

Activities Of *Abutilon indicum* Plants

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Abutilon indicum is a plant that belongs to the malvaceae family, which is distributed throughout a number of tropical and subtropical areas and has been used for various disorders in traditional and folk medicine. The various medicinal applications of this plant include blood tonic agent, urinary disease, diarrhea, allergy, blood dysentery, vaginal infections activities. Plant extracts have been performed to confirm the anti-oxidants, anti-bacterial, anti-inflammatory, analgesic, anti-cancer, hepato-protective, immunomodulatory, phytochemical and larvicidal activities of plants. *Abutilon indicum* plant is very much used in siddha medicines. In fact the bark, root, leaves, flowers and seeds are all used for medicinal purposes by tamils. The flowers are traditionally used to increase semen in men. The leaves are also used to treat for pile complaints. This plant exhibits several potential pharmacological activities. The aim of this study was to evalute wheather extract of *abutilon indicum*. *Abutilon indicum* improves insulin sensitivity. First we observed the antidiabetic activity of aqueous extract of the entire plants.

keyword: Anti-inflammatory, Anti-cancer, Anti-oxidants, Anti-diabetics.

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32. Dr. V. Dhana Rangesh Kumar

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FATBR-2020-BC-25

Review on Medicinal Plants and Nanoparticles Synthesis

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The silver nanoparticles which are evaluated for its antimicrobial activity against many human pathogens and fungal phytoplanktons can be synthesized from fifteen various medicinal plants and from some microbial species. More than 100 different biological sources synthesizing silver nanoparticles have been reported. Synthesized nanoparticles are characterized by UV visible spectrophotometer. Extract from plants is cost effective and eco-friendly and can be economic and effective alternative for large scale synthesis. The biological agents for synthesizing AgNP₃ cover compounds produced naturally in microbes and plants. These plant based biological molecules undergo highly controlled assembly for making them suitable for the metal nanoparticle synthesis. Metallic nanoparticles are being utilized in every phase of science.

Keyword: Silver nanoparticles, medicinal plants, antimicrobial, antifungal

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33. Dr. V. Dhana Rangesh Kumar

FATBR-2020-BC-26

Review Of Anti -Diabetic and Used In Medicinal Plants

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The present article gives a general idea of diabetic mellitus, Diabetes is a metabolic disorder which is mainly characterized by hyperglycaemia and arises by the defects in insulin secretion or insulin action or both. It is categorized into two types, type-1 and type – 2, diabetes. Conventionally many drugs used for the treatment of diabetes such as biguanides, sulfonylureas, meglitinides etc. In India medicinal plants are widely used traditionally for the prevention and cure of diabetes. Despite considerable progress in the treatment of diabetes by oral hypoglycaemia agent, search for newer drugs continues because the existing synthetic drugs have several limitations. The herbal drugs with anti -diabetic activity are yet to be commercially formulated as modern medicines. Alternatively medicinal plants are promising source and also very useful for the development of complimentary therapy. This review consists of the herbs which are reported to have good antidiabetic property.

Keywords - Diabetic mellitus, Hypoglycaemia agent, Herbs drugs, Alternative therapy.

S.Gowri, P. Chidambara Rajan, J. Rengaramanujam, D. Sridevi, S. Kokila (eds.)

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34. Dr. V. Dhana Rangesh Kumar

FATBR-2020-BC-28

***In vitro* Antioxidant And Anticancer Activity Of *Pithcellobium Dulse* Fruit Peel**

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Pithcellobium dulce (kodukapulli in Tamil and vilayati babul in hindi) is a small to medium sized spiny tree cultivated throughout the plains of india. *Pithcellobium dulce* belongs to the family of Leguminosae. *Pithcellobium dulce*, a plant of many uses which has versatile role in traditional system of medicine. Several studies are being conducted regarding the efficacy of whole plant or its parts for treatment of different diseases and ailments. The bioactive compounds of the plant include phenols, steroids, glycosides, tannins, alkaloids. Present study investigates the beneficial role of the ethanolic extract of the fruit peel of the *Pithcellobium dulce* against MCF-7 breast cancer cell line.

Keyword: *Pithcellobium dulce*, breast cancer, antioxidant and anticancer activity.

S.Gowri, P. Chidambara Rajan, J. Rengaramanujam, D. Sridevi, S. Kokila(eds.)

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35. Dr. V. Dhana Rangesh Kumar

FATBR-2020-BC-38

Medicinal Plants & Anti –Inflammation

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ABSTRACT

Medicinal plants and their secondary metabolites are progressively used in the treatment of diseases as a complementary medicine. Inflammation is a pathologic condition that includes a wide range of diseases such as rheumatic and immune-mediated conditions, diabetes, cardiovascular accident, and etc. *Curcuma longa*, *Zingiber officinale*, *Rosmarinus officinalis*, *Evening primrose*, and *Devils claw* are some of the introduced medicinal herbs in this review. Since the treatment of inflammation is not a one-dimensional remedy, this review tries to reach a multidimensional therapeutic approach to inflammation with the help of herbal medicine and modification in lifestyle.

Key Words: Secondary metabolites, antioxidants and inflammation

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36. Dr. S. Balasubramanian

FATBR-2020-BC-20

**A Study On The Association With The Anemia In Underweight And Prevalence Of
Overweight And Obesity Among Students**

S. Balasubramanian, S. Sindhuja, and K. Kowsalya.

Department of Biochemistry, Dr. N. G. P Arts and Science College, Coimbatore, India.

Anemia occurs when if there is a decreased number of RBC (Red Blood Cells) in body. Most common blood disorder in general human population. Anemia affects 24.8% of the total population in the world. The pre-school children have highest risk. Globally with an estimated percentage of developing anemia become 47. RBC needs hemoglobin that contains lots of iron molecule. The red blood cell carries oxygen from the lung to the whole body. Some of the disease also can result in decreased level of RBC. Iron deficiency anemia is the most common in human. Gastrointestinal condition like ulcer, cancer also result anemia. As BMI (BODY MASS INDEX) is a tool to indicate a person is whether underweight, overweight, obese or healthy weight. this study declares that BMI is a tool to specify the anemic person. Body Mass Index (BMI) is used to measure the health state of body. BMI varies from one person to another by shape of their body and particular height to measure the person's total body fat. A person who is underweight is more likely to have low blood counts, poor physical stamina and weak immune system which causes anemia through dizziness, headaches, and fatigue. If a person is underweight, it declares that the person is not having proper nutrition that need for the body. For eg., Nutrients helps to grow hair, skin, bones and etc., Anemia affects globally about 1.62 billion people (95% CI: 1.50–1.74 billion), which corresponds to 24.8% of the population. Mostly pre-school children and pregnant women get affected by this Anemia.

Key word: BMI, Underweight, RBC, Insufficient nutrition, Anemia, Blood cell count.

S. Gowri, P. Chidambara Rajan, J. Rengaramamujam, D. Sridevi, S. Kokila (eds.)

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37. Dr. V. Usha

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FATBR-2020-BC-17

Determination of Antioxidant Activities of A Wide Variety of Native Fruits

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A variety of native fruits were screened qualitatively for their phytochemicals i.e flavonoids, alkaloids, phenolics, saponins and anthocyanin. The total anthocyanin content were quantified in the methanolic extracts of native fruits. The antioxidant properties of native fruit extracts have been analyzed spectrophotometrically using the *in vitro* DPPH assay.

Keyword: Total Anthocyanin, Qualitative phytochemical analysis, Antioxidant activity, DPPH assay

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38. Dr. V. Usha

SOUVENIR | Futuristic Approaches In Transformation Of Bioscience Research (FATBR-2020)

FATBR-2020-BC-21

Anticancer Activity Of Selected Fruits

Anusuiya Udayagiri, Induja Ramesh, Joicy Ruba, Mugundhan, Mythili Saravanan, Preethi

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The present study was aimed at checking out the anticancer activity of selected fruits using MTT assay. The fruit extracts of cherry, plums and grapes were subjected to Qualitative phytochemicals analysis for confirmation of phenols, steroids, alkaloids, terpenoids, tannins, saponins and anthocyanin. The anthocyanin content of the fruit juices were quantified spectrophotometrically. The fruit extract was subjected to MTT assay for determining the *in-vitro* anticancer activity.

Keyword: Anticancer activity, spectrophotometry, MTT assay.



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Metric 3.4.4

39. Dr. C. Venkatesan

FATBR-2020-BC-6

Antioxidant And Anticancer Activity Of *Brassica oleracea* against Colon Cancer (Ht-29) Cell Line

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Abstract

Health-promoting phytonutrients in cruciferous vegetables have been gaining attention for their powerful effects in combating cancer. This review concerns anticancer properties of cruciferous green vegetables of -Brassical genus such as broccoli. The role and mechanisms of action of cruciferous active compounds such as sulforaphane and glucosinolates in protection against cancer and cancer-fighting are discussed. Sulforaphane (SFN) is one of most important dietary constituents of broccoli (*Brassica oleracea*) and other cruciferous vegetables, which have been reported to exhibit health benefits, including prevention and therapy of cancer, such as colorectal carcinoma (CRC). The objective of this study was to determine whether the anticancer effect of SFN on colon cancer HT-29 cell line could be improved. SFN and other notable isothiocyanates (ITCs), including phenethylisothiocyanate and benzyl isothiocyanate found in various cruciferous vegetables, have also been implicated to have a chemopreventive role for breast, colon, and prostate cancer. Antiproliferative activity of broccoli and influence in human colon cancer and reports that the sample tested had IC50 value ranging from 25 to 143 μ mL. the results showed that the highest amount of phenolic compounds and anti-oxidant activity. It combines to reduction of the mineral deficiency with increased amount of phenolic compounds, antioxidant activity and antiproliferative activity. They are therefore a significant source of anti-cancer compounds. The mechanisms of action of this plant are still unclear and need to be further explored to assist in providing useful information for its application as an alternative for the prevention of cancer.

Keywords: cruciferous vegetables, sulforaphane, colon cancer, antioxidant and anti.

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40. Dr. C. Venkatesan

FATBR-2020-BC-18

Evaluation Of Healing Activity Of Marine Collagen Peptides From The Skin Of Oreochromis Niloticus

G.G Samyuktha and C Venkatesan

Department of Biochemistry

Dr.N.G.P Arts and Science College, Coimbatore

Throughout the life in day to day activities everyone could experience some physical damages in their skin it is called as Wounds. In this wounds skin is torned, punctured, scratched and burned. Collagen is also abundant in plants, animals and aquatic organisms. The Fish Oreochromis Niloticus is enriched with collagen protein in its skin, fins and bones. It's a popular fish used for a routine meal. Collagen is an effective component in healing as cell proliferation and migration. In an in vivo animal study the effects of collagen in Oral administration were examined in mice. The collagen could increase number of fibroblasts and blood vessel sections and the mean thickness of the regenerating epithelium after the Diabetic Foot Ulcer formation. This study suggests that oral administration of Collagen protein can be a good treatment for Diabetic Foot Ulcer.

Key word: collagen, *in vitro* study, wound healing, Diabetic foot ulcer.

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41. Dr. C. Venkatesan

Anticancer Activity of *Nigella sativa* Against Breast Cancer (MCF-7 Cell Line) – *In vitro* Studies

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Nigella sativa has been used as traditional medicine for centuries. The crude extract from its seeds potential against many diseases like cancer, cardiovascular complications, diabetes, asthma, renal disease etc. It is effective against cancer in blood system, lung, kidney, liver, prostate, breast, cervix, skin with much safety. The studies showed that has antioxidant role and improves body's defense system, induces apoptosis. Although the anti-cancer activity of *N. sativa* components was recognized scientific research with this important traditional medicine is a history of last 2~3 decades. There are not so many research works done with this important traditional medicine and very few reports exist in the scientific database. Anticancerous activity assay was performed using the MCF-7 breast cancer cell line.

Key words: Traditional medicine, *Nigella sativa*, Antioxidant, Anti-cancer, MCF-7 Cell line.

S. Gowri, P. Chidambara Rajan, J. Rengaramanujam, D. Sridevi, S. Kokila (eds.)

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42. Dr.S.Uma Maheswari

FATBR-2020-ND-7

**DEVELOPMENT AND QUALITY EVALUATION OF PINEAPPLE FLAVOURED
COCONUT YOGHURT.**

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Abstract

Yoghurt is a popular fermented dairy product consumed due to its unique sensory and nutritive properties. Yoghurt is obtained from lactic acid fermentation by the action of a starter culture containing *Lactobacillus Bulgaricus* and *Thermophilus*. Moreover, the presence of live active bacteria in yoghurt contributes to the nutritional and therapeutic properties. Coconut milk is a product prepared from coconut, which has nutritional importance such as protein, iron, phosphorus, magnesium and zinc than cow's milk but low in calcium. It has a medium chain fatty acid namely lauric acid which has a health claim of curing ulcers in the stomach. This study was therefore designed to explore the potentials of coconut milk and cow milk in the production of yoghurt and to determine the sensory properties of the yoghurt. Yoghurt was produced from milk blends obtained by mixing cow milk and coconut milk prepared in three different ratios (V1-250:50, V2-200: 100, V3 - 150:150), based on a completely randomized design, with 100% cow milk yoghurt as the control. Strains of *Lactobacillus Bulgaricus* (2%) were used in fermentation of yoghurt for 24 hours at warm temperature. The formulated yoghurt was flavored with pineapple syrup. High mean values (8.6) were obtained for the formulated yoghurt (YV2) compared to the control in terms of sensory attributes. This study demonstrated that delicious and acceptable yoghurts could be prepared from the blend of cow milk and coconut milk incorporated with pineapple flavor, which could be particularly advantageous to the industry to utilize coconut milk by lessening the milk utilization and met the requirements of all age groups who are

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43. Dr.S.Uma Maheswari

FATBR-2020-ND-11

Formulation and Evaluation of Traditional South Indian Murukku Mix Prepared using Millets and Tapioca Flour

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The current of the value added products were prepared using the formulated ready cook to cook murukku mix. It was based on the high nutritive value and health benefits. The ingredients like red rice, proso millet, little millet, tapioca flour and chickpea flour were selected for preparation of murukku mix to get the best flour in three different ratio were formulated and was acceptable based on its capacity using the ratio of (35:20:20:5). Various processing methods like roasting, drying and grinding were employed to access the best method of processing to retain the nutritive value of the ingredients. The formulated murukku mix was analysed for the nutritive value like energy, carbohydrate, protein, fat, vitamins and iron. The physico chemical properties like ash and moisture content. Microbial analysis were also done. The flour is tested for the shelf life after 30 days the nutritive value and moisture content were found to be reduced slightly than the initial flour. Finally the study can be concluded that the recipes were prepared and highly accepted in all aspects compare to the product. From the variations through the nutrient analysis was concluded that variation –I has better nutrient compare to variation –II and variation –III. Hence the nutrient murukku is better choice when compare to normal murukku made using plain rice flour.

Keywords: Murukku; Millets; Dietary fiber; Protein; Physico chemical properties.

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44. Dr.S.Uma Maheswari

SOUVENIR | Futuristic Approaches & Transformation Of Bioscience Research (FATBR-2020)

FATBR-2020-ND-4

Quality Evaluation of Gluten Free Brown Rice Sponge Cake Incorporated with Coconut Flour

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ABSTRACT

Celiac disease which is the most common food sensitive enteropathy in humans that is triggered by the consumption of wheat gluten as well as related with protein in barley, rye, and oat. The only treatment ever known for celiac disease is gluten free diet. Most gluten free food product on the market is rich in starch but poor in terms of other nutrients, functional and health beneficial ingredients. Brown rice contains many nutritional components, such as dietary fibres, phytic acids, E and B vitamins and gamma amino butyric acid (GABA), than the ordinary milled rice grains. Coconut flour is a fine source of dietary fibre and can be added in many bakery products. Coconut flour plays an important role in controlling cholesterol and sugar levels in blood and prevention of colon cancer. In this research, it is aimed to develop a nutritious and functional gluten free cake formulations by substituting brown rice flour at (70g, 60g and 50g) with coconut flour at (30g, 40g and 50g). Sensory evaluation was carried out for 20 semi trained panel members with 9-point hedonic scale. As a result, variation III (brown rice flour-50% & coconut flour-50%) has secured the highest score. The fibre content was estimated by using acid-alkali wash method. It was found that the fibre content of variation III (3.08g/100g) was high when compared to control (3g/100g). This study highlights the importance of fibre, vitamin B6 and magnesium which could serve as multivitamin cake for the celiac and gluten sensitive conditions.

Keywords: celiac disease; gluten; brown rice; coconut flour; cake

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45. Dr.S.Uma Maheswari

SOUVENIR | Futuristic Approaches In Transformation Of Bioscience Research (FATBR-2020)

FATBR-2020-ND-2

Improvement of Protein Quality of Vegen Pizza Base with Substitution of Black Gram Dhal

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ABSTRACT

Pizza is one of the most popular fast food with composite number of toppings and provides an array of nutrients in significant amounts but has more calories which makes it a high calorie food. The present study was carried out to standardize pizza base with black gram dhal flour, wheat flour and all-purpose flour and to improve the quality of protein by substituting with black gram dhal. Beetroot extract was used as a natural colourant for the developed pizza which makes the protein rich pizza as functional food for the children category. Vegan pizza base was prepared by using three flours in three different ratios (black gram dhal flour, wheat flour and All-purpose flour) named as P1, P2 and P3. Pizza Base prepared from the all-purpose flour only served as control (P0). The formulated vegan pizza base is presented to 20 semi trained panellists with 9-point hedonic scale to rate the sensory attributes. It was found that 30% of black gram dhal flour substitution was acceptable in terms of sensory and textural attributes. The results of the present study emphasised to improve the protein quality by reducing the calories of the pizza which is a modern food.

Keywords: Black gram dhal; Beetroot; Protein; Calorie; Pizza

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46. Dr.Daniel Robert S

FATBR-2020-ND-23

Organoleptic Properties of Soy Flour Fortified Muffins

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The purpose of the study was designed to develop a functional food with low sugar and high fibre content. Supplementation of legume flours has a great potential in developing countries for improving the nutritional value of different baked products. As good sources of proteins, calorie and fibre legumes in general make a major contribution to human nutrition. Baking has been identified as an inexpensive and effective technology for improving the nutritional quality of cereals and grain legumes. The food ingredients namely legume soybean and flax seed (*Linum utitatisimum*) and almonds were selected which is successfully used in baked products to obtain a low calorie high fibre enriched snack product for diabetic patients. The study recommended incorporation of Muffin with 75% (Test Sample 2) Fortified flour to upgrade its nutritional value and quality. In addition the protein content was higher in the Test Sample 2 (14.72 g) than the other sample. . In the sensory evaluation the Test Sample 2 scored highest marks than the other samples. The nutrient quality is enhanced in the Test Sample 2 when compared to the control. .

Keywords: Legumes, Standardization, Baking Protein Fortified

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47. Dr.Daniel Robert S

FATBR-2020-ND-5

Development and Evaluation of Educational Tools for Clients with Diabetes Mellitus

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Abstract

Diabetes mellitus is a multifactorial disease that requires long-term care since it involves major changes in both physical and psychosocial dimension of each patient. Diabetes education is a critical element of care that improves patient outcomes. The purpose of this study is to develop simple educational tools and to evaluate the patient's understanding about the developed tools. An educational video regarding the types, causes, symptoms, diagnosis and dietary management of diabetes mellitus was developed with a help of a computer graphics expert. In addition, educational booklet and a pamphlet regarding diet was developed using simple terminology. In order to assess the pre and post intervention knowledge of the selected diabetic patients, a questionnaire was developed and validated. For this study 50 subjects (23 males and 27 females) with type 2 diabetes aged 30 – 70 years were selected. The study was conducted at a local diabetes center. The knowledge regarding diabetes and its management was assessed before and after the administration of the questionnaire from all the subjects. Paired t-test results showed that there was a significant ($P = 0.001$) improvement in knowledge among the 50 subjects after giving education tools. Hence it is concluded that simple educational tools are essential to improve the knowledge regarding diabetes mellitus and its dietary management.

Keywords: Diabetes; Diet; Education; Tools; Questionnaire; Subjects

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48. Dr.Daniel Robert S

FATBR-2020-ND-15

Development and Evaluation of Instant Fried Millet Mix

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Abstract

The convenience foods products are those which makes consumers lives easier by minimizing preparation. Now-a-days Indian youth and younger generations are getting adapted to the convenience food. Instant fried millet mix is an innovative food product which benefit the consumer's by reducing the preparation time and effort. Millets have nutraceutical properties and accepted as functional foods because they provide dietary fibre, proteins, energy, minerals, vitamins and antioxidants required for human health which help to prevent health problem such as lowering blood pressure, risk of heart disease, cancer and CVD, cholesterol. Phytochemicals such as phenolics, lignans, β -glucan, inulin, phytates, and carotenoids are present in millets. In this research it aimed to develop a nutritious and convenient instant fried millet mix formulation by using kodo millet, little millet, barnyard millet. The sensory evaluation was carried by 25 semi trained panel members. As a result barnyard millet has secured the highest score. The selected test sample has gone though physio chemical, Organoleptic analysis.

Keywords: convenient, kodo millet, little millet, barnyard millet, phytochemicals.

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49. Dr.Daniel Robert S

SOUVENIR | Futuristic Approaches In Transformation Of Bioscience Research (FATBR-2020)

FATBR-2020-ND-6

Impact of diet education among patients with stage V chronic kidney disease

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Abstract

Chronic kidney disease (CKD) is a progressive loss in kidney function over a period of time. When CKD patients reach stage V, they either need dialysis or renal transplantation. Diet education is a critical element of care that improves patient outcome. The aim of this study is to compare the effectiveness of diet education between the intensive group and the control group. Fifty patients (31 males; 19 females) with stage V CKD on hemodialysis were selected. The selected subjects were divided into intensive group containing 25 subjects (16males, 9 females) and control group of 25 patients (15males, 10 females). Using a validated questionnaire, the impact of diet education was assessed by analyzing the biochemical and clinical parameters. For the control group, diet advise was given only at the start of the study whereas for the intensive group diet advise was given during the start of the study and followed by weekly once for 4 weeks. Biochemical results of the control group showed that there was no significant reduction of serum creatinine (initial : 8.2 ± 3.1 mg/dl; final: 7.1 ± 2.1 mg/dl) and urea (initial: 80.4 ± 12.9 mg/dl; final: 73.4 ± 11.4 mg/dl). But in the intensive group it was noticed that there was a significant reduction of serum urea (initial : 70.1 ± 14.0 mg/dl; final: 52.7 ± 11.7 mg/dl) and a non-significant reduction of creatinine (initial

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50. Ms.P. Ashwini

FATBR-2020-ND-8

Development of Instant Mixed Millet Nutrie Breakfast Mix

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The present study was conducted to develop a instant mixed millet breakfast mix with enriched nutrients. The main objective of this study is to develop a low cost food with easily available ingredients, and to decrease the fermentation period, also to provide consumers with a healthy ready-to-eat foods. Millet are nutritionally superior to rice and wheat in terms of dietary fiber, less fat and high protein content. The instant breakfast mix was prepared by using the ingredients such as rice, black gram dhal, pearl millet, finger millet, fenugreek seeds, oats and agathi leaves. The product was organoleptically evaluated by using nine point hedonic scale. The developed product was highly acceptable on organoleptic evaluation with an overall acceptability score. Addition of finger millet and pearl millet flour to the batter enhanced the dietary fiber. The addition of oats enhanced the taste. Notable change in nutritive value was observed between control and selected variation. The results indicated that the nutritional content of millet incorporated breakfast mix was highly acceptable.

Keywords: Instant breakfast mix; anti-nutrients; fermentation; millet; nutritional and sensory evaluation.

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51. Ms.P. Ashwini

SOUVENIR | Futuristic Approaches In Transformation Of Bioscience Research (FATBR-2020)

FATBR-2020-ND-16

Development and Quality Evaluation of Amaranth Flaxseed Muffins

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Abstract

Muffins are considered one of the most popular breakfast food or afternoon snack. Nowadays, consumers not only prefer foods to satisfy hunger but to also provide essential nutrients to prevent diseases, to prevent mental and physical well being. Due to popularity of flaxseed as functional foods there is an increasing demand for flaxseed based products in which it is incorporated in the cakes, biscuits, ready to eat breakfast cereals, crackers etc. Amaranth contains high contents of lysine, an amino acid which is essential for growth and maintenance of body and brain cells, cholesterol-lowering properties and also exhibit antioxidant activity. The amaranth grains can be consumed by milling it into flour. Soybeans consists of biological active compounds which includes isoflavones, and has been associated with reducing the risk of developing cardiovascular diseases, some cancers and hyperlipidemia. The formulated muffins was prepared with different ratios of amaranth, flaxseed and soy flour they were subjected to sensory evaluation containing 25 semi trained panel members, it was organoleptically analysed by a 9 point hedonic scale to evaluate appearance, texture, taste, flavor, color, odor and overall quality of the developed product.

Keywords: Muffin, Amaranth flour, Soy flour, Flaxseed, Functional foods

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52. Ms.P. Ashwini

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FATBR-2020-ND-12

Formulation and Standardisation of Millet Murukku Mix Incorporated with Curry Leaves Powder and Green Gram Flour

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Abstract

The objective of the study was to develop an easy to digest, instantly low cost and stable millet-pulse based murukku with the inclusion of Curry leaves and Green gram flour for all age groups. Millet murukku was developed by the incorporation of Curry leaves and Green gram flour. Because of rapid urbanization, life style and diet diversification, the demand for convenience foods has increased a lot. Consumers look for varieties and handy snacks which are nutrient dense and healthy. Murukku is one of the traditional snacks in southern regions of India. Millets are highly nutritious, not acid forming foods. Hence, they are soothing, easy to digest and are considered to be the least allergic. Minor millets like Foxtail and Kodo-millet were used as it contains important amino acids such as isoleucine, leucine, methionine and phenyl alanine which are deficient in other starchy meals. It is also known for several health benefits such as anti-diabetic, anti-cancer, anti-ageing. Curry leaves and Green gram flour are used in making Millet murukku in order to enrich the nutritive value. Curry leaves are rich in Iron, Calcium, Magnesium, Vitamin A, Vitamin B6 and Vitamin C, dietary fiber, antioxidants, plant sterols and flavonoids. Green gram is rich in Protein, Dietary fiber, Iron, Magnesium and other bioactive components. Millet murukku was prepared with different ingredients with different ratios. The best variation was analyzed for physico-chemical, microbiological and sensory characteristics. Further, the product was

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53. Ms.P.Kanneshwari

SOUVENIR | Futuristic Approaches In Transformation Of Bioscience Research (FATBR-2020)

FATBR-2020-ND-10

Development and Organoleptic Characteristics of Cookies Incorporated with Black Cumin Seed Powder and Banana Peel Powder

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The study was conducted to develop a crunchy cookies to which black cumin seed powder and banana peel powder was incorporated. Black cumin seeds contains of carbohydrates, protein, fat, crude fibre and many active compounds. The most important compounds are Thymoquinone (TQ), Carvacrol, and thymol. Health benefits of black cumin powder are Antidiabetic, Neuroprotective, Immune-stimulant, Anti inflammatory, Analgesic, Pulmonary protective, Hepato protective, Anticarcinogenic , Antihypertensive, Antioxidant, Antimicrobial, Gastroprotective and Nephroprotective effect. Banana peel is rich in minerals (K, Ph, Ca, Fe and Mg), vitamins (A, B complex, E and C). Banana peel extracts and black cumin seed can be potentially utilised in food products as a natural preservative agent to improve the foods quality and shelf life. Different levels of wheat flour, Black cumin seed powder and Banana peel powder were added for the development of cookies and its quality were analysed based on sensory analysis. The best variation had desirable organoleptic properties as indicated by the semi- trained panellists.

Keywords: Black cumin seed; Banana peel; Cookies; Health benefits; Natural preservative

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54. Ms.P.Kanneshwari

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FATBR-2020-ND-13

Development and Organoleptic Evaluation of Omega 3 Rich Ice Cream

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Ice cream is frozen dessert that consists of air cells dispersed in an aqueous matrix. It contains dairy and non-dairy ingredients. The characterising materials that are added to the sugar syrup are dairy ingredients, sweeteners (other than sucrose), texture modifiers, flavours and colours. Omega 3 fatty acid can fight depression and anxiety, improve eye health, improve risk factors for heart disease, improve the cognitive development, improve risk factors of menopause symptoms and it is good for skin. The basic steps in the manufacturing of ice cream are blending of the mixed ingredients, pasteurization, homogenization, freezing, packaging and hardening. In children Omega 3 Fatty acid helps for the brain development. DHA (Docosahexaenoic acid) is a major building block of the brain, is an important poly unsaturated Omega-3 Fatty acid accumulated mainly in the brain and in the eyes. It is an essential fat which is required for body functions. In order to support the child's brain development and function, an adequate daily intake of the DHA should be included in a balanced diet. The Omega -3 rich ice cream consists of adequate amount of nutrients such as energy, carbohydrate, protein, fat, dietary fibre, calcium, magnesium, vit E and thiamine. Acceptance testing was carried out to gather information on the liking of the products based on a 9 – point hedonic scale.

Keywords: omega3 fatty acid; ice cream; nuts and seed; diary product; frozen

FATBR 2020 ND 14

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55. Ms.Shivani. R

SOUVENIR | Futuristic Approaches In Transformation Of Bioscience Research (FATBR-2020)

FATBR-2020-ND-18

Deveopment of Tempeh using Soybean, Barley And Kidney Bean

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Abstract

The present study was conducted to develop a Tempeh. Main objective of this study is to develop low cost nutritious tempeh. A variety of indigenous fermented foods exist today; however, tempeh has been one of the most widely accepted mold-modified fermented products. Tempeh is a popular fermented food in Indonesia which is rich in nutrients and active substances. Recently, the consumption of Tempeh has been increasing rapidly, not only in Indonesia but also in the United States and Europe. Although Tempeh is not likely to be exported, the product is consumed and produced in many countries. High mean values were obtained for the Tempeh (TP) 8.56 ± 0.77 compared to control in terms of sensory attributes. This paper studies the significance of soybean fermentation in tempeh on the vitamins, amino acids, Nutritional quality, functional and physio-chemical properties. This study demonstrated that the by preparing value added products from soybean, barley and kidney bean which are available at our country, we can ensure meaningful utilization of fermented food produced which increases shelf life of the product and health status of the people. It also minimizes the wastage and increase in profitability.

Keywords: Tempeh, Fermented food, Nutritional quality, Functional and physiochemical properties

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56. Ms.Shivani. R

SOUVENIR | Futuristic Approaches In Transformation Of Bioscience Research (FATBR-2020)

FATBR-2020-ND-20

Development of Spicy Green Coffee Mix Incorporated with Mexican Mint

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ABSTRACT

This study is synopsis of development and sensory characteristics of spicy green coffee mix with Mexican mint. Coffee is a major source of caffeine, which has been shown to acutely reduce sensitivity to insulin, but also has potentially beneficial effects. Green coffee contains macro nutrients such as carbohydrates, protein and fat. Spices contain various nutrients such as protein, fibre, vitamins and minerals. The development of such beverages improves the nutritional status of the population. The green coffee mix was produced from a Mexican mint and some spices in different ratios. High mean values were obtained for the formulated green coffee mix (V_1) 8.36 ± 0.86 compared to control in terms of sensory attributes. Notable change in nutritive value was observed between control and selected variation. This study demonstrated that by preparing value added products from Mexican mint can ensure meaningful utilization of herbal food products which increases shelf life of the product and health status of the people. It also minimizes the wastage and increase in profitability. The results indicated that the nutritional content of spicy green coffee mix was highly acceptable.

Key words: spicy green coffee mix; macronutrients; value added product; nutritional and sensory characteristics.

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57. Ms.Shivani. R

FATBR-2020-ND-21

Development and Evaluation of Instant Adai Mix Incorporated with Jamun Seed Powder

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Abstract

The impact of liberalisation, privatization and globalisation creates a tremendous growth in fast food industries. In the present investigation attempts have been made to develop instant adai mix by the addition of standardized proportion with their ingredients (blackgram dhal, green gram dhal, bengal gram dhal, red gram dhal and rice) and has incorporated with jamun seed powder in instant adai mix. Jamun seed (*Syzygium cumini*) is one of the widely used medicinal plants in the treatment of various diseases in particular diabetes. Jamun seeds contain a glycoside, named Jamboline which helps in the maintenance of glucose levels as in the normal limits. Jamun seed powder is good sources of vitamin A and vitamin C, as well as dietary fibre, iron, calcium, protein and they are low in fat and cholesterol. In this research, it is aimed to develop a nutritious and formulations of instant adai mix by substituting jamun seed powder. Different types of instant adai mix powder with varying proportions of Jamun seed powder (5 %, 10 % and 15 %) were developed along with a control. The organoleptic evaluation of the instant adai mix powder was carried out using 9 Point Hedonic Scale as a result Variation II(10%) has secured the highest mean score of 8.6 ± 0.577 in terms of appearance, colour, flavour, taste, texture and overall acceptability. The data obtained was analyzed statistically.

Keywords: Jamun seed powder, instant adai mix, rice flour

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S.Gowri, P. Chidambara Rajan, J. Rengaramanujam, D. Sridevi, S. Kokila (eds.)

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58. Ms.Shivani. R

SOUVENIR | Futuristic Approaches In Transformation Of Bioscience Research (FATBR-2020)

FATBR-2020-ND-14

Development of Instant Donut Mix using Sorghum Flour

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Donuts are prepared with sorghum (*Sorghum bicolor*) flour and goat milk powder. Three different formulations are produced. The donuts were evaluated for its sensory properties, nutritional factors and storage properties. The nutritional values were noted differently for all three variations and variation II had the best values. The highest mean values which were got for variation II (V2) were 8.78. The sensory evaluation was conducted and done by 25 member panel. Low levels of anti nutritional factors such as tannins, oxalate, saponins, trypsin inhibitors were observed. Diets made from this donut with good nutritional properties and taste were attracted by children and are easy to take by all. It is concluded that donut from the flour blend and goat milk powder showed promise in helping to combat prevent certain types of cancer, help control diabetes, offer a dietary option to people with celiac disease, improve digestive health.

Key words: trypsin, cookies, anti nutritional factors.

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59. Ms.Abinaya.C

FATBR-2020-ND-17

Development of Software for Management of Obesity and Treatment through Diet and Physical Activity

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Abstract

Obesity is a metabolic disorder caused due to lack of physical activity and excess calorie intake. the prevalence of obesity is on raise. The purpose of the study is to develop a mobile application that can calculate BMI, track the physical activity status, get a diet plan according to the selected complication. This application was developed with the help of a computer science expert. The development process consist of various stages: creating name for the application, creating main activity, creating second activity. The software was developed in android studio, java has been used in backend. In addition a pamphlet was developed that contain causes, symptoms and diet plan for obesity. Questionnaire was developed to assess the knowledge status, physical activity status and dietary pattern of selected 50 sample of obese age group 25-55 from kuthanur panchayath palakkad. Nutrition education was given to the sample using power point presentation, pamphlet, software and post intervention knowledge test is conducted. The paired t-test shows .005% significance it is been concluded from the above study 50 samples were benefited by the education. As the technology is developing everything available in the hand in the form of mobile phones, as the usage of mobile phones increasing, mobile apps is useful tool in disseminating health information.

Keywords: obesity, physical activity, software, diet.

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60. Ms.Abinaya.C

FATBR-2020-ND-19

Development and Evaluaton of Iron Rich Cookies by Using Drumstic Leaves

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Abstract

Anemia is a nutritional disorder and it is caused by Iron deficiency. Drumstick leaves that contained rich in iron and essential nutrients. The leaves have been reported to be rich source of several anti oxidants such as pholephenols, and carotenoids (B carotene) which may be beneficial for the prevention of several chronic degenerative disorders like Alzheimer's diabetes, cancer and cardiovascular disease. Iron is used in the formation of hemoglobin hence it is deficiency it comes the main contributing factor of anemia. Iron deficiency is usually attributed to chronic blood loss or inadequate dietary intake. The leaves have nutrients like vitamin A, iron, calcium, folic acid and vitamin C. The present study shows that increasing the production, availability and consumption of green leafy vegetables and to assess the dehydration of drumsticks leaves and incorporation of drumstick leaves in cookies. Dehydrating of drumstick leaves by using hot air oven in 50⁰c to 60⁰c temperature. These cookies used by best supplement for anemic peoples.

Key words : Drumstick leaves ,anemia ,dehydration

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61. Dr.D.Sridevi

FATBR-2020-ND-24

Subjective Evaluation of Soy Milk Enriched Proco Waffles

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Abstract

Adding value is the process of changing or transforming a product from its original state to a more valuable state. The value-added products are processed commodities whose values has been increased by the addition of specific ingredients. Waffles are served as a snack by placing fruits, cream and butter. Mung beans are sprouted to enrich the antioxidant capacity and nutrient load. Soy milk reduces the cholesterol levels and reduces the risk of prostate cancer. Cocoa powder stabilizes the blood pressure and helps to treat constipation. The present process is the development of waffles that is enriched with soy milk and the addition of green gram as a flour after the pulse is sprouted. The ingredients namely, wheat flour (30%), sprouted green gram flour (10%) and soy milk (25%) are formulated in three different variations. For a control wheat flour(30%),sprouted green gram flour(20%) are used the product. For the variation-I wheat flour (30%), sprouted green gram flour (10%),and soymilk(25%) has been formulated. For the variation-II wheat flour (30%), sprouted green gram flour(15%),and soymilk(20%) has been formulated. Same like the variation-I,II for variation-III wheat flour(30%),sprouted green gram powder(20%),soymilk(15%) were formulated in the product. The variations that has been rated by semi-trained panellists in the sensory evaluation by the parameters such as taste, texture, colour, flavour and appearance of the product is analysed. At the end of the evaluation, the third variation was selected for further study.

Keywords: Sprouting, enrichment and product development

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62. M. Poongothai





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FATBR-2020-BT-49

**Development of Nanoparticle Based Liquid Bio-Inoculant of Siderophore Producing
Bacteria Associated with seaweed**

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Abstract

Seaweed is a term applied to multicellular, marine algae which are large enough to be seen by the naked eyes. Some seaweeds are grown upto 60 meters in length, It includes member of the red, brown and green algae. They belong to the kingdom protista that is they are not plants. Some species of seaweeds are used for nutritional, bio-medicinal and also for bio-remediation process. So these seaweeds are used as food, fodder, bio-fertilizers and for bio-fuel production. From the seaweed endophytic bacteria were isolated and they were checked for siderophore activity. Siderophores (from the Greek: "iron carriers") are defined as relatively low molecular weight, ferric ion specific chelating agent elaborated by bacteria and fungi growing under low iron stress. The role of these compounds is to scavenge iron from the environment and to make the mineral, which is almost always essential, available to the microbial cells. With the help of siderophore producing organism Fe nanoparticles were synthesized. Nanotechnology refers to an evolving area of science and technology that includes synthesis and development of various nanomaterials. Nanoparticles have vast applications for instance drug delivery, therapeutic products, bio-fertilizers, etc., the development of biologically enthused new processes for the syntheses of nanoparticles is evolving into an important branch of nanotechnology. Biosynthesized Iron Nanoparticles





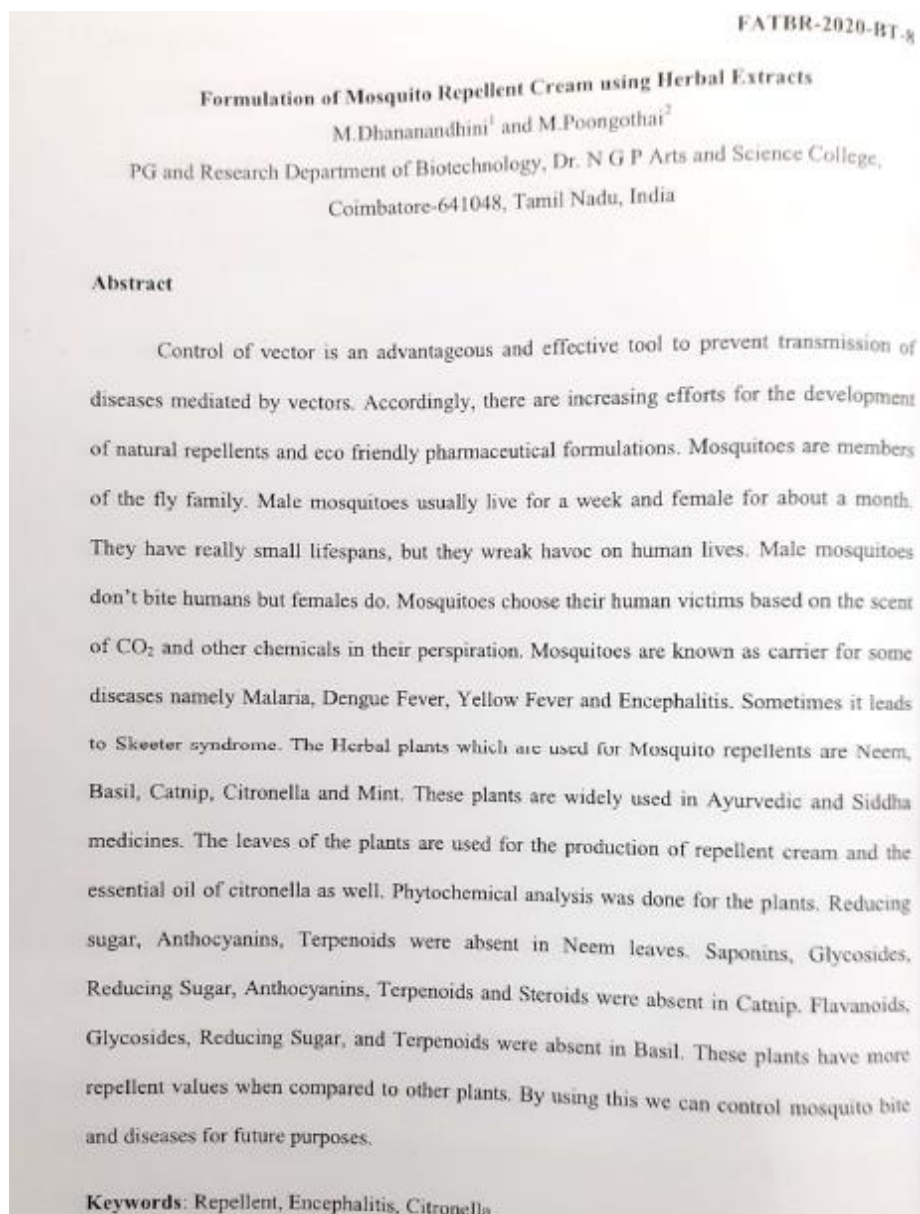
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NAAC
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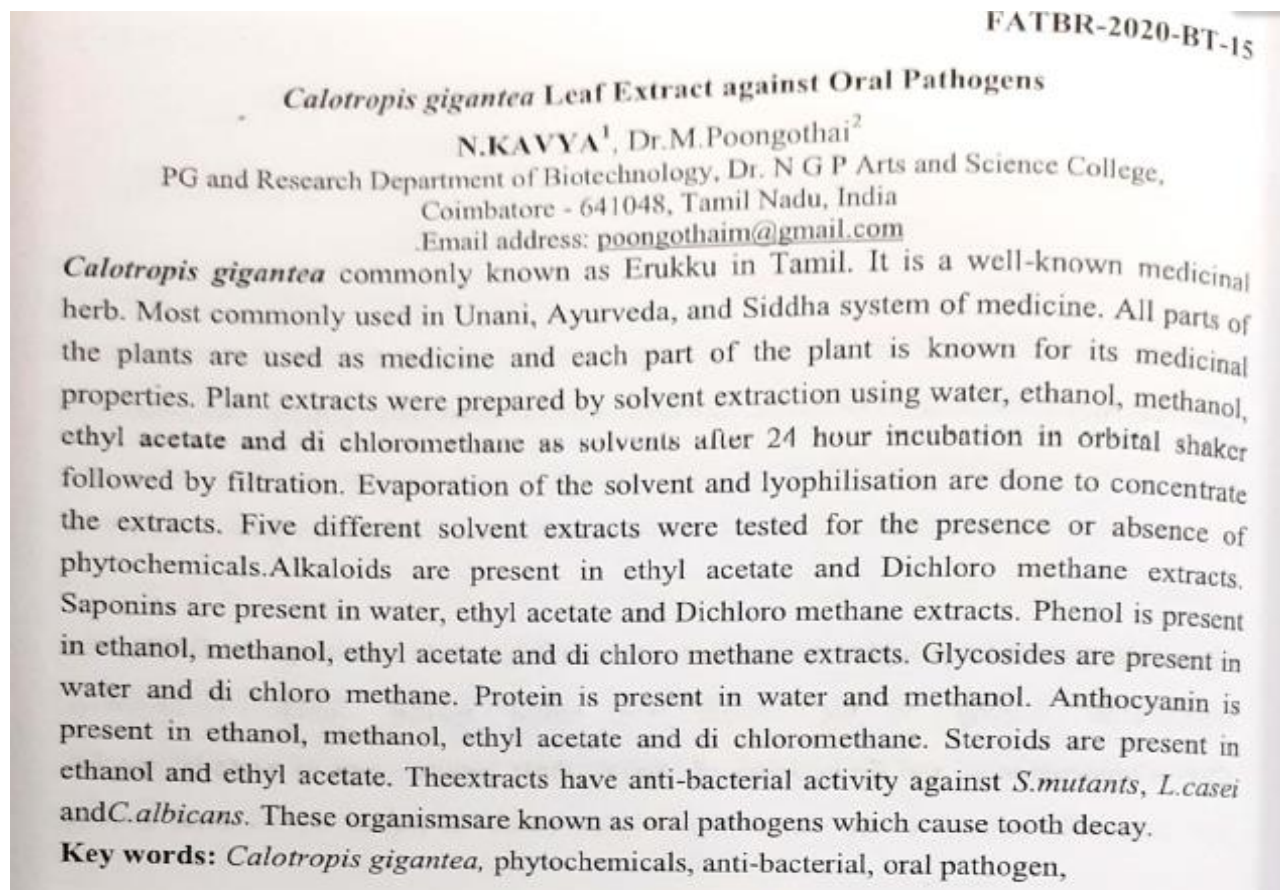
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63. M. Poongothai



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65. M. Poongothai

FATBR-2020-BT-90

Biosynthesis of Silver Nanoparticle from Fenugreek Leaves (*Trigonella foenum-graecum*) and Analysing Antibacterial Activity

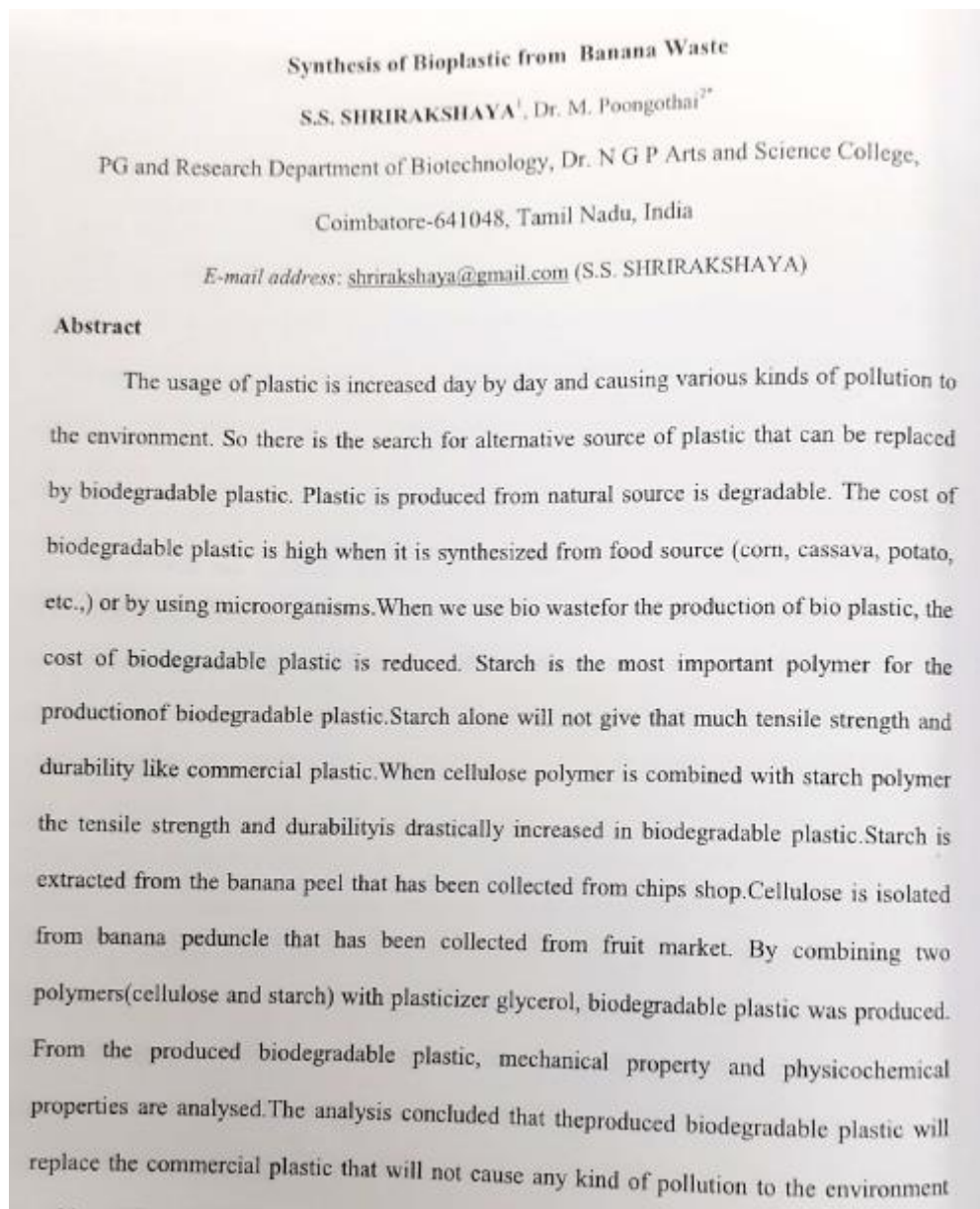
Keerthana Vijayakumar and Poongothai Muthusamy
 PG and Research department of Biotechnology, Dr. N G P Arts and Science College,
 Coimbatore-641 048, Tamil Nadu, India
 Corresponding author: poongothaim@gmail.com (Dr. M. Poongothai)

In this investigation nano silver was prepared by reduction of silver nitrate using fenugreek leaf extract. Synthesising nanoparticles by biological methods using plant extract have attracted great attention recently because of their cost-efficient, eco friendly and nontoxic methods. In this research Silver Nanoparticles were synthesised from AgNO₃ solution by green synthesis process with the assistance of fenugreek leaf extract. The antibacterial effects of silver nanoparticles have been used to control bacterial growth in a variety of applications, including dental work, surgery, applications, wound and burn treatment and biomedical devices. Fenugreek Leaf: This helps lower blood sugar by slowing down digestion and adsorption of carbohydrates. This suggests they may be effective in treating people with Diabetics. Methods: Silver nanoparticles were synthesized at room temperature using Fenugreek leaf extract. Leaves were washed through the double distilled water, and the fenugreek leaves were grained and the leaf extract were kept for centrifuge under 8000rpm for 10mins. Then the synthesised silver nanoparticles were characterised using UV-visible spectrometry, Transmission Electron Microscopy (TEM), Scanning Electron Microscopy (SEM), and X-ray diffraction. Produced nano silver was tested as antibacterial agent. The average size of the particles may be found to be 174nm. By the synthesis of silver nanoparticles from the fenugreek leaf the antibacterial activity in (*Pseudomonas*) were analysed.

Keywords: Silver nanoparticles, fenugreek leaf, silver nitrate, antibacterial assay.

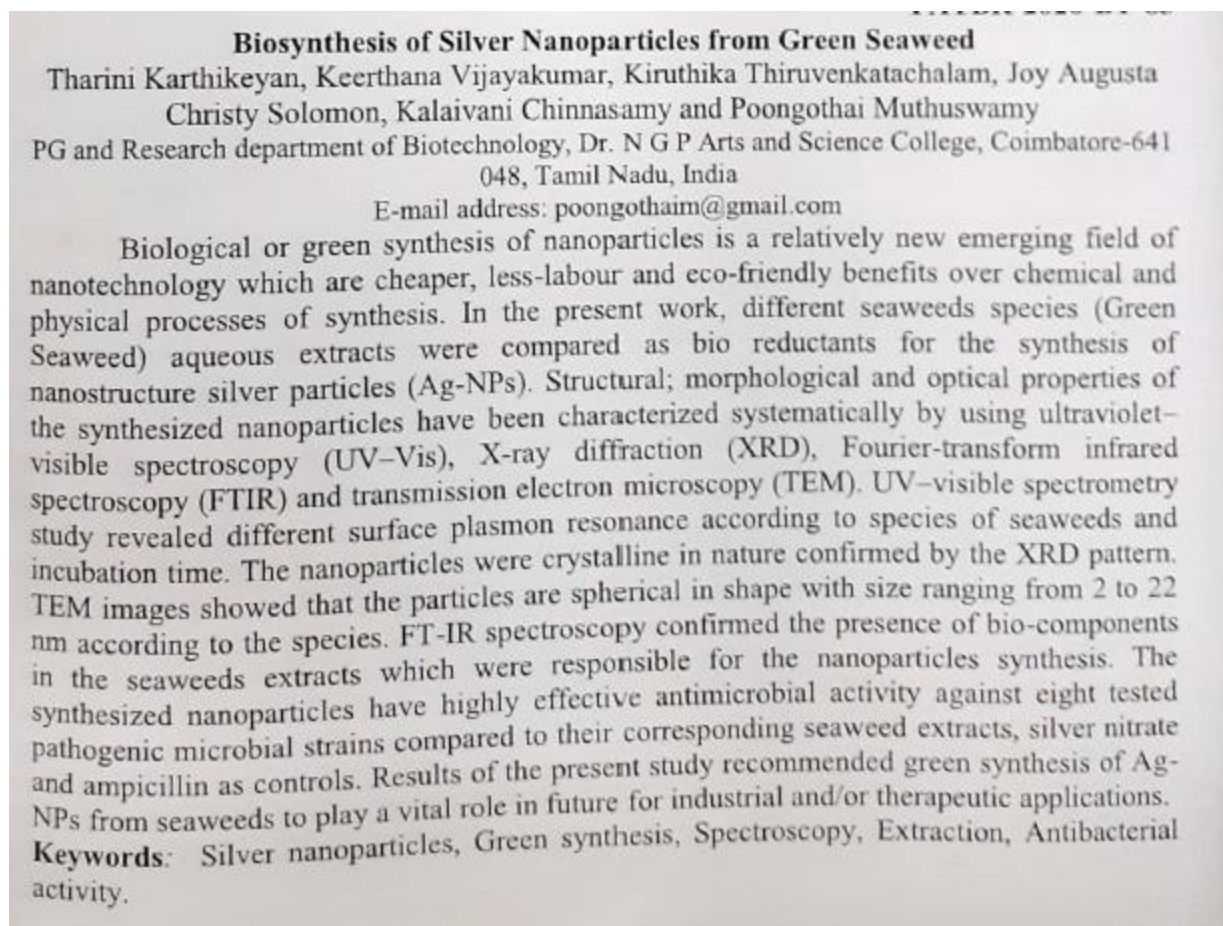
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66. M. Poongothai



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67. M. Poongothai



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68. M. Poongothai

FATBR-2020-BT-96

Biosynthesis of Silver Nanoparticles using Henna (*Lawsonia Inermis*) Leaves and Evaluation of their Antibacterial Activity
 Tharini Karthikeyan and Poongothai Muthusamy
 PG and Research Department of Biotechnology, Dr. N G P Arts and Science College,
 Dr. N. G. P. Kalapatti Road, Coimbatore-641048, Tamil Nadu, India
 Corresponding author: poongothaim@gmail.com (Dr. M . Poongothai)

The biosynthesis of silver nanoparticles has been proposed as a cost efficient and environment friendly alternative to physical and chemical methods. An important area of research in nanotechnology deals with the biometric synthesis of synthesis of nanoparticles by using biological sources like plant leaf, bacteria, fungi etc. This offers numerous benefits of eco-friendliness and effective in various medicinal applications. Henna leaves have ability to cure the disease caused by microorganisms due to bioactive compound. *L. inermis* is a small shrub which has its unique bioactive principles like sugars, Traxetin, Tannin, Gallic acid, Lawsone, Resins, and Coumarins etc in their leaves. Among those lawsone is the major ingredients which give its characteristic color. The leaves of this plant are used in treatment of wound, ulcer, cough, bronchitis, inflammation, diarrhoea, dysentery, falling of hair and greyness hair. The medicinal properties exhibited by this plant mainly due to its wide range of photochemical compounds present in them. These includes 1,4 - Naphoquinone , Aseculelin, Esculetin, Quinone, scopoletin, tiliani etc. The synthesis of silver nanoparticles has been performed using leaves extract of *Lawsonia inermis* by reducing aqueous silver nitrate. Biosynthesised silver nanoparticles which is highly used in the field of medicine. The silver nanoparticles increase photoabsorption due to localized surface Plasmon resonance. The formation of silver nanoparticles was confirmed by the colour change of plant extraction and the formation of silver nitrate is subjected for characterization process through UV vis, SEM with EDAX. XRD, ZETA. The silver nanoparticles were taken to determine the efficacy of antibacterial activity by using agar well diffusion method . The antibacterial activity of silver nanoparticles was analysed by measuring the zone of inhibition. Nanoparticles are potential source of drug delivery . Their nano structure makes the particle more efficient compare to the available commercial antibiotics .

Keywords: Biosynthesis, Medicinal plants, *Lawsonia inermis*, Silver nanoparticles, characterization, Anti bacterial activity.

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69. M. Poongothai

FATBR-2020-BT-39

Effective Component of Eggshell as Biofertilizer – Calcium Chloride or Calcium Carbonate

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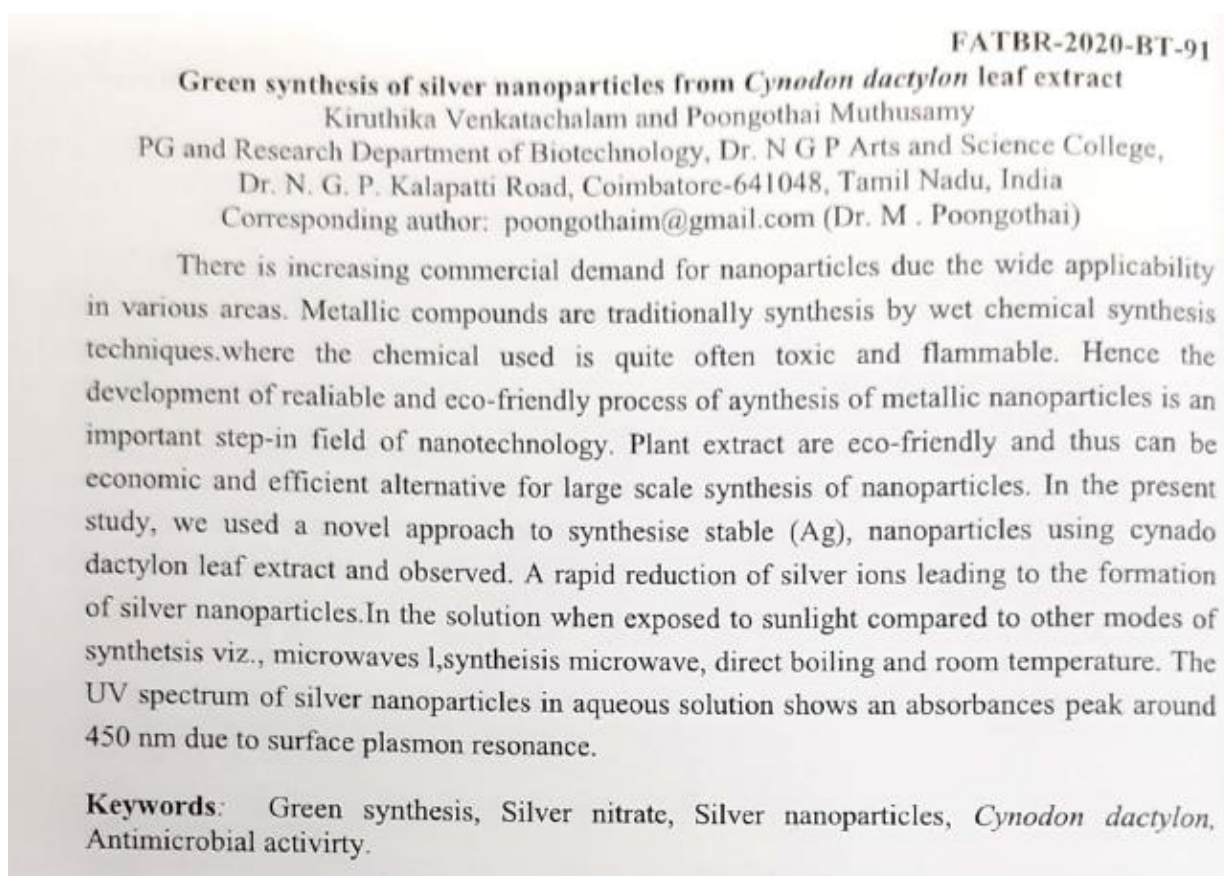
Abstract

Eggshell is a solid waste, produced several tons per day. Eggshell waste disposal contributes to environment pollution and also the disposal includes cost, availability of disposal sites. Eggshell powder was used in different application like fertilizer, calcium supplement for females. Mostly eggshell is made up of 95% calcium carbonate remaining 5% includes calcium phosphate, magnesium carbonate, soluble and insoluble proteins. Country hen's eggshell contains calcium and trace amounts of other micro elements. Country hen eggshell calcium is best natural source of calcium and it is about 90% absorbable than limestone or coral sources. The whole medium eggshell makes about one teaspoon of powder. This can be used as fertilizer to treat Blossom End Root (BER) diseases in plants and also as calcium supplement tablet for human beings. Plants observe calcium chloride than calcium carbonate. Eggshells were collected, washed and powdered. Extraction of calcium was done by using 4% HCl (w/v). This calcium is mixed with MS medium and analysed the plant growth. MS medium along with eggshell calcium as calcium chloride initiates rapid growth in plants compared to normal MS medium. MS medium along with eggshell powder as Calcium carbonate is slow in initiating the growth of plants. The purpose of this study is mainly to use effective form of Calcium in eggshell for the growth and multiplication of plants and to formulate the effective composition of Calcium in biofertilizer.

Keywords: Eggshell, Calcium chloride, Calcium carbonate, MS medium and fertilizer.

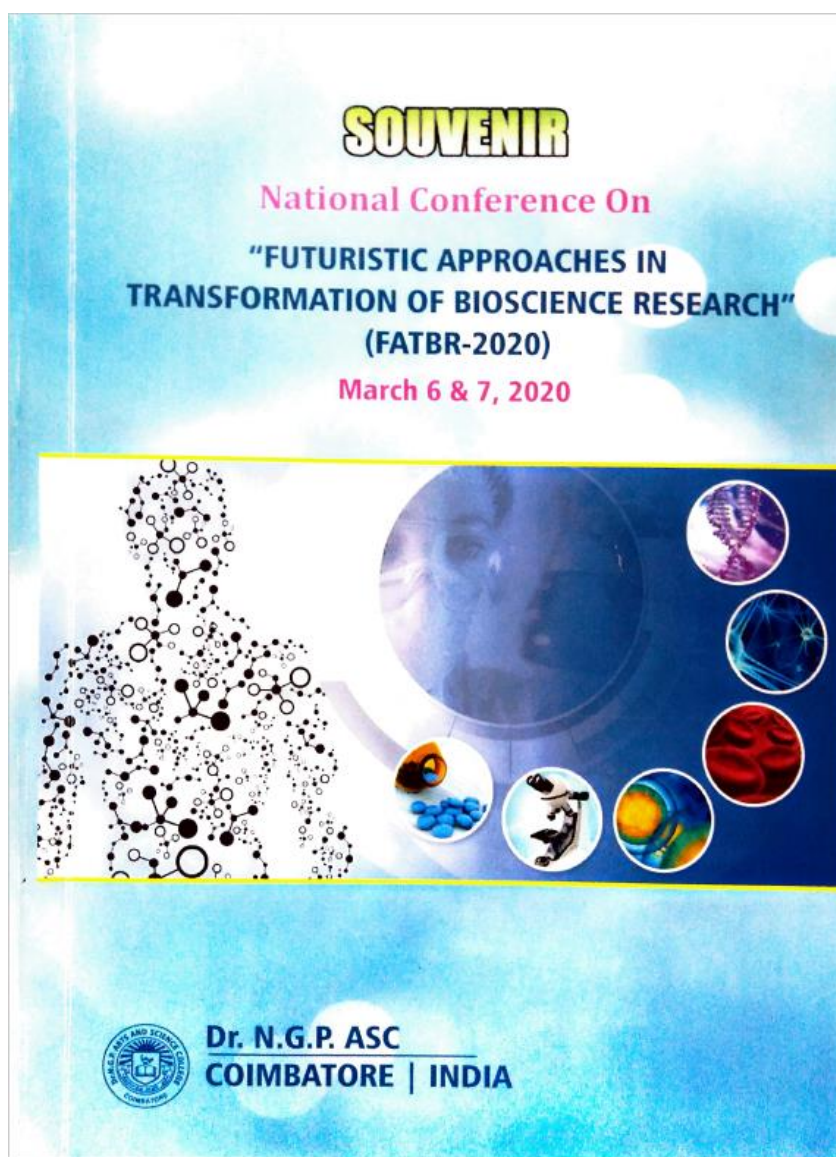
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70. M. Poongothai



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71. Dr.V.Shanmugaraju





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FATBR-2020-BT-1

Biosynthesis of selenium nanoparticles using *Vachellia leucophloea* Extract and antibacterial and antioxidant activity

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The work was focused to determine the phytochemical analysis of leaves extract, green synthesis, its characterization and its applications. The selenium nanoparticles are synthesized from *Vachellia leucophloea* bark extract via green synthesis method. The synthesized selenium nanoparticles are comprehensively characterised by different characterization techniques. The total flavonoid, phenolic and tannin contents in the aqueous extract were found by phytochemical analysis techniques. Fourier transform infrared spectroscopy spectrum confirm the presence of functional groups which were associated with bioactive molecules. The suspension solution confirms the formation of Selenium nanoparticles showed 310 nm by UV visible spectroscopy techniques. X-ray diffraction study exhibits the Crystallinity nature of Selenium nanoparticles. Selenium nanoparticle were spherical in shape which confirmed by Scanning Electron Microscope. The antibacterial activity of selenium nanoparticles and considerable antibacterial activity on *E. coli* (12 mm), *Klebsiella pneumoniae* (14 mm) and *Staphylococcus aureus* (19.66 mm). The higher zone of inhibition is observed in *Staphylococcus aureus* (19.66 mm) by Selenium nanoparticles which may (efficiency to *Staphylococcus aureus* pathogen) serve as an antibacterial agent. The present results support the advantages of green method for the production of Selenium nanoparticles having potential activities. Both Se NPs and plant extract showed the activity to scavenge DPPH free radicals in a dose-dependent manner at 20 and 100 mg/ml. Selenium nanoparticles showed moderate antioxidant activity when compared with plant extract and ascorbic acid. *V. leucophloea* stem bark contains with alkaloids, many free amino acids, flavonoids, glycosides, glucose, tannins, and chlorogenic acid. These active phytochemicals may be combined with the metal solution to give the nanoparticles. These results revealed that the Selenium nanoparticles act as an efficient radical scavenger.

Keywords: Selenium nanoparticles, Antimicrobial activity, UV-protection, Antioxidant activity, Amorphous structure.

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72. Dr.P.Chidambara Rajan

FATBR-2020-BT-3

An Overview of Stem Cell Therapy in Clinical Trials

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Abstract

The stem cells are the mass of unspecialized cells that has the ability to get differentiated into various cell types. Due to this potency the stem cells are being used up globally in the field of clinical research. This study is based on the analysis of the usage of various types of stem cells in the treatment of diseases. The major classification of stem cells includes Embryonic (Placenta) and Haematopoietic (bone marrow). The other stem cells include neural, pancreatic, skin, fat, hair etc. The embryonic stem cells are involved in generating the tissues of the infected organ. This would help in extending the life expectancy of the affected individual. Currently, it is being used up to treat the spinal cord injury. Limbal stem cells are used to restore Corneal epithelium for the patients suffering from Corneal Destruction. The neural Stem cells are used in repairing the damaged nervous system. The immortalized neural stem cells are being used successfully in the treatment of Stroke. The haematopoietic stem cells are being used up in the development of cardiac tissues that would repair the damaged the heart muscle tissue. HSC are used in clinical trials for genetic diseases such as sickle cell disease and b-thalassemia. The numerous stem cell studies in progress across the globe are only a first step on the long road toward eventual therapies for degenerative and life-ending diseases. The stem cell research is still an ongoing process to develop the curative for several diseases.

Key Words: Stem cells, Embryonic, Haematopoietic, Neural Stem cell, stroke, Cornea



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73. Kandasamy Arunghandhi

FATBR-2020-BT-5

Safe Drinking Herbal Water

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Abstract

Traditional knowledge about the use of medicinal plants for herbal drinks is well documented for widespread use. This study highlights the taxonomic diversity and traditional knowledge on medicinal plants used for water while examining the diversity of diseases treated with HDs in the study area. Current state of knowledge on the links between water quality, new issues, risks, and solutions. This special issue will also cover different perspectives of water studies related environmental and health risk. Water is an important which plays a major role. It gives life to all living things. It is the universal solvent of many reactions. Safe drinking water is the water that can delivered to the personal hygiene. Water covers more than two-thirds of earth surface, but mostly salty and undrinkable. Herbal water extraction of drinking water is good for health and other issues. Water is connected day to day life directly or indirectly. Herbal water provides number of benefits and services for humans and the ecosystem. Based on herbal ingredients, each herbal has health benefits. Human body contains up to 70 percent water, and water is necessary for everything body does. Sample collections are tap water, theertham water, pathimugam water, mixed herbal it is a composition of *Hemidesmus indicus* (nannari), *Chrysopogon zizanioides* (vetiver) and *Synchora potatorum* (thetran kottai). Antibacterial activity were done with 2 positive and 2 negative strain. Positive - *Staphylococcus aureus*, *Bacillus subtilis*. Negative - *Escherichia coli*, *Pseudomonas aeruginosa* with agar well diffusion method. The antibacterial activity of different species was evaluated by agar method. There is an antibacterial activity against the bacterial isolates. Antioxidant activity were done with DPPH assay. The antioxidant present more activity in the theertham water of comparing other herbal waters. Theertham water is considered is a good antioxidant agent. A study was conducted to removal or kill of bacteria in various household waters. It is easy method. Its treat infectious diseases. Medicinal plants has many antimicrobial and other health benefits properties.

Keywords: Herbal waters, pure water, antibacterial activity, antioxidant, parameters.



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74. Karthik Subramani

FATBR-2020-BT-7

Evaluation and Formulation of Herbal and Nano Herbal ointment using *Aegle marmelos* for Arthritis

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Abstract

Arthritis is an inflammation of the joints. It can affect one joint or multiple joints. There are more than 100 different types of arthritis, with different causes and treatment methods. Two of the most common types are osteoarthritis (OA) and Rheumatoid Arthritis (RA). RA is caused due to the damage or infection in the synovial membrane of the knee. Several herbal medications are being developed using the plants. *Aegle marmelos*, which is commonly known as Vilvam or Bilva has the properties to cure this type of arthritis. The bark and the leaf extract is used to cure RA. The symptoms of arthritis usually develop over time, but they may also appear suddenly. The most common symptoms are joint pain, swelling, stiffness and range of motion may decrease. They can be reduced using the herbal ointment by the ointment bases. Several physiochemical tests were checked to analyze the stability, viscosity, pH , solubility, color and odour, pH , non-irritancy, etc. of the ointment. The quality of the ointment was checked by performing specific tests. The antimicrobial tests were performed for both the herbal and nano herbal ointments using the well diffusion and disc diffusion method. After comparing the zones, the nano herbal ointment showed more appropriate results than the normal one. In addition to that *In vitro* studies like egg albumin test and bovine serum albumin is performed in order to check the effectiveness of the ointment.

Keywords: Arthritis, Vilvam, Formulation, Evaluation and Ointment bases.

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75. Dr.V.Shanmugaraju

FATBR-2020-BT-14

Pharmacological Activities of *Citrus vulgaris* Peels

V. KARTHIKEYAN¹ and Dr. M. Shanmugavadivu²

PG and Research Department of Biotechnology, Dr. N G P Arts and Science college,

Coimbatore - 641048, Tamil Nadu, India. **Abstract**

Citrusvulgaris is commonly known as sour orange or bitter orange. It is native to Southeast Asia and has been spread by humans to many parts of the world. It is classified under the family *Rutaceae*. It has been cultivated more in the beginning of the 10th century. It has been used in herbal medicine as an appetite suppressant and stimulant. The essential oils obtained from the peels are used as a flavoring agent in most of the perfumes. Methanolic extract was prepared from the peels of *Citrusvulgaris*. The methanolic extract of the peels of *Citrusvulgaris* exhibited higher antioxidant activity (70%) while tested against DPPH. The antibacterial activity of the extract was tested against *Staphylococcus aureus*, *Klebsiellapneumoniae* and *Escherichiacoli*. Among these various types of bacterial species, the methanolic extract of the *Citrusvulgaris* peels exhibited higher antibacterial activity (21mm) against *Staphylococcus aureus*. As this extract has higher antioxidant activity, it can be used in making cosmetic products like antiaging face cream etc. The antiaging face cream was prepared by mixing the extract with cetyl alcohol, stearic acid, glycerin, liquid paraffin, triethanolamine and beeswax. The physicochemical properties like viscosity, homogeneity, spreadability, pH, odor was measured. It is also used to protect the skin from harmful radiations such as UV rays. Most of the peels are thrown as waste hence the utilization of the waste and making a beneficial product from the waste is a cost effective and ecofriendly approach.



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76. Radha Palanisamy

FATBR-2020-BT-24

Synthesis of Natural Food Colour from Carotenoids in Flower Petals

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Abstract

Colour is an important characteristic of food. Since the colours are obtained from synthetic origin, it shows some adverse effect to humans. So an alternative way is to use natural food colours obtained in the form of carotenoid pigments along with health benefits. In this current study, carotenoid pigments are obtained from flower petals of *Hibiscus rosa-sinensis*, *Sesuvium portulacastrum*, *Magnolia champaca* and *Boerhaavia diffusa*. The colour was extracted by using solvent extraction method. The extracted pigments were then subjected to confirmatory assessment of carotenoid pigments by UV spectrophotometer in the range (400-500nm). Phytochemical analysis was done to each extract which proved the presence of carbohydrates, proteins, terpenoids, flavonoids, tannins, coumarins and saponins. It was subjected to antioxidant activity like DPPH and vitamin C which proved *Hibiscus rosa-sinensis* to have 75% radical scavenging activity followed by *Sesuvium portulacastrum* 80%, *Magnolia champaca* 46% and *Boerhaavia diffusa* 38%. Antibacterial activity for each extracts were performed against *Escheria coli* and zone of inhibition was observed. It was then subjected to Thin Layer Chromatography against standard carotenoid. HPLC showed the different group of carotenoid pigments present in it. FTIR was done to confirm function groups. Each sample of extraction was lyophilized, checked for the solubility, stability and pH. The toxicity test was performed against three organism *Saccharomyces cerevisiae*, *Staphylococcus aureus* and *Escheria coli* and noted the zone of inhibitions. Thus it proved to be safe and can be incorporated in food items to produce appealing colors.

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77. P.Arun

FATBR-2020-BT-4

Metagenomics - Isolation and Screening of Enzyme Producing Micro-Organisms from Mangrove Sediments

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ABSTRACT

Metagenomics is the study of the genetic material derived from the environmental samples. Classic method to prospect this diverse gene information is by cultivation of microorganisms and subsequent screening for the desired phenotype but about 99.9% of microorganisms in environmental niches cannot be cultivated by standard techniques. Metagenomics allow the recovery of genetic material directly from environment without any cultivation techniques. Metagenomics has emerged as a powerful tool to isolate and identify enzymes with novel biocatalytic activities. Microbial communities like bacteria, Archaea and viruses have important role in environment and human health. The samples are isolated from the mangrove sediments as they are rich in enzymes like lipase, protease etc.,. The samples were directly subjected to eDNA isolation followed by the plasmid DNA isolation. Then it is run in AGE and the size of Plasmid DNA is checked, then is digested, ligated and then subjected to Electroporation with the Competent cells. The sample is kept for incubation and then plated in the respective media to obtain the bacteria that can produce novel enzymes. The Plates were incubated for about 3-4 days to obtain the activity. The isolates showing activity are being isolated from the plates and it is subjected to sequencing after repeated sub culturing. These novel enzymes play an important role in several industries.

Key Words: Metagenomics, bacteria, algae, viruses, Mangrove sediments, lipase, protease, AGE, DNA isolation

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78. M.N.Kathiravan

Feasibility Study on Physiochemical Pretreatment Methods of Bioethanol Production

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PG and Research Department of Biotechnology, Dr. N G P Arts and Science College,
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ABSTRACT

Bioethanol is chemically known as ethyl alcohol (C_2H_5OH) and produced from fermentation of fermentable sugars from plant sources using microorganisms. It is a clear, colourless liquid which is low in toxicity and causes little environmental pollution. The most common usage of bioethanol is to power automobiles by mixing it with petrol. Current interest in bioethanol lies in the production derived from lignocellulosic biomass. Bioethanol production was compared for the feasible method of increasing ethanol producing efficiency from sugarcane bagasse by using microwave pretreatment method and acid hydrolysis methods. Sugarcane bagasse is mainly formed by two carbohydrate fractions (cellulose and hemicelluloses) embedded in a lignin matrix. The contents include cellulose, hemicellulose, lignin and ash contents. Lignocellulosic materials are particularly attractive as raw materials for biofuel production because of their relatively low cost, great abundance and sustainable supply. The cellulose molecules are composed of long chains of sugar molecules. In the hydrolysis process, these chains are broken down to free the sugars, before it is fermented for alcohol production. There are two major hydrolysis processes: a chemical reaction using acids, or an enzymatic reaction. Dilute acid hydrolysis is an easy and productive process. Also, the amount of alcohol produced in case of acid hydrolysis is more than that of alkaline hydrolysis. Dilute H_2SO_4 and HCl was added to each sample and boiled the sample and kept in room temperature for 24 hrs. It was then microwave treated. Test for reducing sugars, cellulose, lignin and xylose helped in analysing the result of each process. Yeast extract was used for fermentation to produce bioethanol.

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79. Dr. J. Rengaramanujam

SOUVENIR | Futuristic Approaches In Transformation Of Bioscience Research (FATBR-2020)

FATBR-2020-MB-4

Antimicrobial and Compound Identification of *Pergulariadaemia* against Oral Microbiome

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Abstract

Introduction: The microorganisms found in the human oral cavity have been referred to as the oral microflora, oral microbiota or more recently as the oral microbiomes. Plant and plant products are being used as a source of medicine since long. The plant *Pergulariadaemia* is used one among against Oral pathogens.

Methodology: The plant extract were prepared by soxhlet extraction method using Aqueous and Ethanol. These extracts were tested against oral pathogens causing oral cavity and dental caries. Further the Phytochemical and GC-MS analysis were done for identifying the biologically active compounds which are present in the plant extract.

Results & Discussion: The plant extracts of *Pergularia daemia* were evaluated against oral pathogens which showed better activity for *Streptococcus mutans* (25mm), *Lactobacillus* sp (18mm), *Enterococcus faecalis* (19mm), *Staphylococcus aureus* (18mm), *Acinetobacter baumannii* (17mm), *Pseudomonas aeruginosa* (17mm), *Klebsiella pneumonia* (19mm), *Candida albicans* (19mm), *Cryptococcus neoformans* (17mm), *Trichophyton rubrum* (18mm), *Aspergillus niger* (29mm) by well diffusion method at 100µg/ml. The phytochemical analysis revealed the presence of alkaloids, steroids, flavanoids, terpenoids, Phenols, saponins, tannins, cardiac glycosides and reducing sugars. The results suggested that *Pergularia daemia* has significant Phytocomponents and GC-MS analysis of ethanolic extract of *Pergularia daemia* leaves confirm the presence Heptasiloxane hexadecamethyl, 2-Allyl-5-t-butylhydroquinone, Quercetin, Dotriacontane, 1-Monolinoleyl glycerol trimethylsilyl ether, Docosane, D-Galactopyranoside, methyl, silicone oil. They can be used for pharmacological studies and curative for various ailments including oral cavity and dental caries.

Keywords: Oral microbiome, *Pergularia daemia*, Well diffusion method, Phytochemical analysis, GC-MS analysis.

S.Gowri, P. Chidambara Rajan, J. Rengaramanujam, D. Sridevi, S. Kokila (eds.)

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80. Dr. J. Rengaramanujam

FATBR-2020-MB-40

Water Potability Test

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Water borne disease outbreaks associated with the drinking of unsafe water, containing pathogenic bacteria of faecal origin, is commonly in densely populated countries. Our study was attempted to detect bacteria from drinking water for the presumptive occurrence of the faecal contamination that are responsible for health associated problems. Therefore, a laboratory scale qualitative analysis through Most Probable Number(MPN) was employed. The main theme of MPN method is to detect the faecal coliforms in drinking water. Thus the colour change and gas production in the lactose broth confirms the presence/absence of the faecal coliforms. This determines the quality of the water.

Keywords: Drinking water, Most Probable number (MPN), Microorganisms, Coliform, Faecal contamination.

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81. Dr. J. Rengaramanujam

FATBR-2020-MB-18

Isolation of Fungal Species and Determining their Antifungal Activity by *Tridax Procumbens* Flower

S.DIVYA, P.Kalaivani, G.V.Salini, S.Sharmila, D.Jasminepriya, Dr.J.RengaRamanujam
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Tridax procumbens is a common herb with significant properties traditionally used in the treatment of many skin diseases. The present study aims at the evaluation of antifungal activity of the flower *Tridax procumbens* against air flora Fungi *Aspergillus niger*, *Aspergillus flavus*, *Penicillium sp.*, *Candida albicans*. The two different extracts were prepared by using the solvent Hexane and Petroleum Ether. The work was proceeded towards disk preparation with various concentration. Further antifungal activity was carried out for each species of fungi isolated.

Key Words: *TridaxProcumbens*, Hexane, Petroleum ether, *Aspergillusniger*, *Aspergillus flavus*, *Penicillium sp.*, *Candida albicans*.

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82. Dr.S .S.Sudha

SOUVENIR | Futuristic Approaches In Transformation Of Bioscience Research (FATBR-2020)

FATBR-2020-MB-1

Antioxidant Potentials of Lichens collected from The Nilgiris, Tamilnadu

SENTHIL PRABHU S. and S.S. Sudha

Department of Microbiology, Dr. N.G.P. Arts and Science College, Coimbatore- 641048

Abstract:

The aim of the study is to investigate the antioxidant activity of various solvent extracts of *Heterodermia boryi*, *Parmotrema stuppeum*, *Usnea nilgirica*, *Pyxine cocoes* and *Parmotrema melanothrix* collected from The Nilgiris by DPPH assay. Among the five lichens *Usnea nilgirica*, *Parmotrema stuppeum* and *Heterodermia boryi* have exhibited better antioxidant activity with IC₅₀ value of 6.32, 6.51 and 6.74 µg/ml concentration of acetone extract for DPPH assay. The other two lichens showed antioxidant potential, but on comparison less with the first three isolates. The present study shows that tested lichen species demonstrated a strong antioxidant activity and can be considered as good sources of natural antioxidants.

Keywords: Lichens extracts, The Nilgiris, Antioxidant activity, DPPH assay

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83. Dr.S .S.Sudha

FATBR-2020-MB-2

Evaluation of Bio-Active Plant Products Against Clinical Isolates of MRSA

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ABSTRACT

Staphylococcus aureus is one of the major causes of Nosocomial infections, resulting in serious consequences and it can affect the skin and soft tissues, endocarditic and blood stream infections, the multiple drug resistance in MRSA has become a major clinical problem worldwide. The samples were collected from different hospitals. This study aims to evaluate the potential of the medicinal plant products Azadiractin and Eugenol showed effective antibacterial agents against MRSA by means of AWD method. The inhibitory activity of the plant products was compared with Vancomycin.

Key Words: MRSA, AWD Azadiractin, Eugenol and Vancomycin

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84. Dr. S. Senthil Prabhu

FATBR-2020-MB-1

Antioxidant Potentials of Lichens collected from The Nilgiris, Tamilnadu

SENTHIL PRABHU S. and S.S. Sudha

Department of Microbiology, Dr. N.G.P. Arts and Science College, Coimbatore- 641048

Abstract:

The aim of the study is to investigate the antioxidant activity of various solvent extracts of *Heterodermia boryi*, *Parmotrema stuppeum*, *Usnea nilgirica*, *Pyxine cocoes* and *Parmotrema melanothrix* collected from The Nilgiris by DPPH assay. Among the five lichens *Usnea nilgirica*, *Parmotrema stuppeum* and *Heterodermia boryi* have exhibited better antioxidant activity with IC₅₀ value of 6.32, 6.51 and 6.74 µg/ml concentration of acetone extract for DPPH assay. The other two lichens showed antioxidant potential, but on comparison less with the first three isolates. The present study shows that tested lichen species demonstrated a strong antioxidant activity and can be considered as good sources of natural antioxidants.

Keywords: Lichens extracts, The Nilgiris, Antioxidant activity, DPPH assay

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85. Dr. S. Senthil Prabhu

FATBR-2020-MB-9

Biosynthesis of Silver Nano Particles by Using Fungi and its Application

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The present study was aimed for the isolation and identification of *Fusarium sp* from soil sample. The silver nanoparticles was synthesized by using extracellular fungal cell filtrate. The synthesized silver nanoparticles was identified by colour changing of the filtrate and confirmed with the help of UV-Vis spectroscopy study. Further it have to be characterized by Fourier-transform infrared spectroscopy (FTIR), Scanning electron microscopy (SEM), X-ray powder diffraction (XRD), Energy-dispersive X-ray spectroscopy (EDX). The synthesized silver nanoparticles were tested for antibacterial activity on *E.coli sp*, *Klebsiella sp*, *Proteus sp*, *Staphylococcus sp*, *MRSA* and *Pseudomonas sp* by disc diffusion method. Minimum inhibitory concentration for bacteria were done for the synthesized silver nanoparticles. Antifungal activity were tested on *Aspergillus sp* and *Penicillium sp*. Antioxidant assay were also done for synthesized silver nanoparticles by DPPH. The antibacterial, antifungal and antioxidant activity results were good for the above mentioned microorganisms. The biosynthesized nanoparticles is to be applied in food wrapping material in future.

Keywords: *Fusarium sp* , Silver nanoparticles , Antimicrobial activity and Antioxidant activity.

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86. Dr. S. Senthil Prabhu

FATBR-2020-MB-27

Microbial Analysis of Street Vended Juices from Coimbatore, Tamil Nadu, India

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Abstract

Food borne illness associated with consumption of street vended juices is high in number due to unhygienic practices. The aim of the present study is to enumerate the organism from the street vendor juices. This is to access the quality of juices sold for immediate consumption in the street. The enumeration of microorganism is carried out by total plate count method by calculating the CFU value and total coliform count by endo agar plating using membrane filter. Samples collected from different areas in Coimbatore (sugarcane juice, lemon juice, rose milk, orange juice, badam drink) which are frequently consumed by people. Colonies were enumerated by serial dilution in nutrient agar plating and isolated colonies were observed. the sample shows high microbial load consisting of number of pathogens like coliforms, fecal coliforms, *E.Coli*, *Staphylococcus aureus*, *Citrobacter sp.* which causes food borne diseases. This can be prevented by checking the water source of the vendors.

Keywords: juice, *E. coli*, Coimbatore, Serial Dilution.

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87. Dr. S. Senthil Prabhu

FATBR-2020-MB-38

Antibacterial Activity of Ginger and Garlic

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Abstract

Antibacterial activity of *Allium sativum* (garlic) and *Zingiber officinale* (ginger) extracts have been evaluated against four different bacteria namely *Escherichia coli*, *Bacillus sp.*, *Pseudomonas sp.*, and *Staphylococcus aureus* by agar well diffusion method. Garlic extract exhibited excellent antibacterial activity against all four test organisms. While ginger extract showed antibacterial activity against *Bacillus sp.*, and *Staphylococcus aureus* only. Antibiotic sensitivity of the four different bacteria was tested with Streptomycin.

Keywords: Antibacterial activity, ginger, garlic, *Escherichia coli*, *Staphylococcus aureus*, *Bacillus sp.*, and *Pseudomonas sp.*

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88. Mrs. C. Sasikala

FATBR-2020-MB-7

Designing Media from Domestic Waste to Enhance Growth of *Chlorococcum Humicola* and Its Application in Mosquito Control

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Abstract

The present study is aimed to design media from domestic waste with limited nitrogen and lofty of other nutrients (potassium, phosphorus, vitamins, tracelements) for enhance biomass and bioactive compounds of *Chlorococcum humicola* with potential application on mosquito control. Microalgae *Chlorococcum humicola* were isolated from lake and cultured in BG11 media. Ingredients are made from domestic waste materials by collection, drying under shadow, mincing, extracted through cold extraction and sterilized by membrane filtration method. BG11, BG11 with ingredients of designed media, and designed media with optimum concentration of ingredients are inoculated with 5% of inoculum. Growth was monitored from 0-25 days time intervals by the measurement of optical density, chlorophyll content, dry weight. Larvicidal evaluation of were done by exposing 4-6 larva into 100ppm, 200ppm, 300ppm, 400ppm, 500 ppm concentrations of ethanolic alage extract. *Chlorococcum humicola* were isolated, identified from collected lake water and from the diverse parameters of growth measurement in three different media after 25 days were provided that, gradual increase in algae cells(optical density), chlorophyll content and final weight of algae in dry base. Complete mortality of larva species were seen in 500ppm bestowed the efficacy of *Chlorococcum humicola* to kill mosquito species with small concentrations which was cultivated in the designed media compared to BG11 and BG11 with ingredients of designed media. From this study, with limited nitrogen source and optimum level of nutrients such as potassium, phosphorus, vitamins, trace elements from different domestic waste materials was highly supported the growth of *Chlorococcum humicola* and improved their efficacy for potential applications in mosquito control.

Keywords: *Chlorococcum humicola*, nutrient levels, media development, industrial applications, mosquito control.

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89. Mrs. C. Sasikala

FATBR-2020-MB-11

Screening for Anti - Candidal property of algae against *Candida albicans*

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The present study was aimed to investigate anticandidal activity of bioactive compounds from green algae collected from fresh water Tirupur, Tamil Nadu, India. Isolation and identification of Green algae *Dispora cuneiformis* belongs to the Cocomyxceae family authenticated by BSI, Coimbatore, Tamil Nadu, India. Methonolic extract of *Dispora cuneiformis* were tested in compliance with the agar well diffusion method for their anti candidal activity On *Candida albicans* and methanolic extract exhibited minimum inhibitory concentration and minimum fungicidal concentration. In addition, the bioactive compounds are separated by column chromatography technique, fractions are then tested for anti-candidal activity. It was then subjected to TLC and GC MS for the confirmation of compound that is responsible for the anti- candidal activity. The compounds from green algae were potentialy worked against *Candida albicans* which can be applied in dressing materials to cure and prevent candidal infections.

Keywords : *Dispora cuneiformis*, anti- candidal, column fractions, TLC, GC MS.

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90. Mrs. C. Sasikala

FATBR-2020-MB-13

The Novel Coronavirus

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Coronavirus are enveloped, positive -stranded RNA viruses with a genome of approximately 30 kb .Based on genetic similarities ,corona viruses are classified into 3 groups.Two group 2 coronavirus ,human coronavirus oc43(HCoV-oc43)and bovine coronavirus (BCoV),show remarkable antigenic and genetic similarities.A severe respiratory disease was recently reported in Wuhan,Hubei province,china.As of 25 January 2020,atleast 1,975 cases had been reported since the first patient was hospitalised on 12 December 2019.Investigation have suggested that the outbreak was associated with a seafood market in Wuhan.The symptoms are just like fever,dizziness,cough,common cold,respiratory problems.It can also lead to lung cancer and even death.we can prevent this disease by avoid direct contact with infected person.washing hands thoroughly and some preventive measures will save us from the disease.

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91. Mrs. C. Sasikala

FATBR-2020-MB-14

Role of Microorganisms in Our Life

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Micro-organisms plays a major role in our life. The beneficial micro –organisms include many bacteria, fungi, and algal species. There are also harmful microbes. Plasmids are extra chromosomal circular DNA found in the cytoplasm of the bacterium *Escherchia coli* plays a major role as a vector in genetic engineering, without which no genetically modified organisms can be produced. The bacterium *Lactobacillus* in human intestine controls the rate of digestion and also prevents urinary infections. Oil spills in oceans is the major cause of pollution and has dangerous effects. The bacterium *Pseudomonas putida* is used in the process of cleaning oil spills, which is eco-friendly. Fermentation process is never possible without yeast. Microbes are also involved in production of various vitamins, enzymes, organic acids and antibiotics. Algal species like *Arthrospira platensis* and *Arthrospira maxima* are used in the production of spirulina, which is used as vitamin supplement and also as a source of food for astronauts. In this poster, the activities of micro-organisms are explained in detail and the processes through which they provide benefits are also explained.

Keywords: Micro-organisms, bacterium, fungi, algae, plasmids, beneficial.

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92. Mrs. C. Sasikala

FATBR-2020-MB-16

The Long-Term Relationship between Microbial Metabolism and Greenhouse Gases

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N₂O (Nitrous oxide) respiration, a microbial activity controlled largely by the availability of copper, likely evolved in the Proterozoic eon and is a key to mitigating the current rise of N₂O in the earth's atmosphere. Ammonia-oxidizers release reactive intermediates during their metabolism that react abiotically with ferrous iron, or with humic substances to form N₂O. Methane consumption by bacteria and archaea is linked to the respiration of a broad range of electron acceptors that connect this metabolism to metal, sulfur, and nitrogen cycles, and can sometimes lead to N₂O production. The production and consumption of the potent greenhouse gases, nitrous oxide and methane, are largely controlled by microorganisms that have long been assigned to define functional guilds. However, our understanding of how microbial and biogeochemical processes interact to control the flux of these gases. The consumption and production of nitrous oxide and methane are functionally intertwined and engage a range of other biogeochemically active molecules from oxic to anoxic ecosystems. Abiotic processes, such as reaction of nitrogen oxides with metals, have a strong influence on microorganisms and play an equally significant role in greenhouse gas flux. The complex enzymology and physiology of microbial greenhouse gas metabolism are explored and discussed in the context of geochemistry and climate change.

Keywords: Microbes, Greenhouse gases, Climate change, Nitrous oxide, Methane, Metals

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93. Mrs. C. Sasikala

FATBR-2020-MB-19

Bifidobacteria and Their Role in Human Gut Microbiota

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The gut-associated microbiota is essential for multiple physiological processes, including immune development. The human gut microbiome, which in total may contain >100 times the number of genes present in our genomes. It is recognised that intestinal microbiota plays an important role in human health and disease. Infact gut bacteria other than metabolize dietary components may play complex roles such as modulation of immune system and in reduction of gut infection. In abundance of the certain intestinal microbiota have repeatedly been observed in patients that suffer from atopic disease, inflammatory bowel disease, crohn disease, ulcerative colitis, colon cancer and diabetes. In this context, Bifidobacteria represent one of the most common bacterial members of the human gut. Bifidobacterium occurs at a critical period of immune maturation and programming. Bifidobacteria are anaerobic, gram-positive, irregular or branched rod shaped bacteria that are commonly found in the gastrointestinal tracts (GIT) of humans, especially the first stage of life. Bifidobacterial fluctuations seem directly associated with health effects and for these reason they are being exploited as health- promoting or probiotic bacteria, little is known about their impact or dependency on any other or on their genome analyses have highlighted the existence of gene repertoires encoding products that are responsible for the adaptation of Bifidobacteria to the human intestine and intense research efforts are ongoing to understand the Molecular details of these specifically the molecular interactions that are presumed exist between Bifidobacteria and the human *host*.

Keywords: Bifidobacterium, probiotic, immunology, inflammatory bowel disease, ulcerative colitis, cytokine modulation, immune disease.

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94. Mrs. C. Sasikala

FATBR-2020-MB-20

DISCOVERING INDICATORS FOR FECAL POLLUTION

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Fecal pollution indicators are essential to identify and remediate contamination sources and protect public health. Historically, easily cultured facultative anaerobes such as fecal coliforms, *Escherichia coli*, or enterococci have been used but these indicators generally provide no information as to their source. More recently, molecular methods have targeted fecal anaerobes, which are much more abundant in humans and other mammals, and some strains appear to be associated with particular host sources. Next-generation sequencing and microbiome studies have created an unprecedented inventory of microbial communities associated with fecal sources, allowing reexamination of which taxonomic groups are best suited as informative indicators. The use of new computational methods, such as oligotyping coupled with well-established machine learning approaches, is providing new insights into patterns of host association. In this review we examine the basis for host-specificity and the rationale for using 16S rRNA gene targets for alternative indicators and highlight two taxonomic groups, Bacteroidales and Lachnospiraceae, which are rich in host-specific bacterial organisms. Finally, we discuss considerations for using alternative indicators for water quality assessments with a particular focus on detecting human sewage sources of contamination.

Keywords : sewage, fecal indicators , alternative indicators, next generation sequencing, water quality, Oligotyping.

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95. Mrs. C. Sasikala

FATBR-2020-MB-21

Antimicrobial Resistance and Challenges

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Bacterial resistance to antimicrobials is recognized by the WHO as a major health threat of the 21st century. Antimicrobial resistance threatens Of an ever- increasing range of infection. Infection such as tuberculosis and Septicemia - the scourge of earlier centuries - are once again killing patients at frightening rates . Bacterial resistance is driven by the continued use of antimicrobials and it is unlikely that the threat of resistance can be effectively mitigated by the discovery of new antimicrobials . We have used , or using , our so - called drugs of last resort . We have witnessed an increase in antimicrobial. Resistance in health care and community setting while development of pipeline remain inadequate. Clinical challenges is a great challenge 21st century health Care. While new therapeutics are undoubtedly required

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96. Mrs. C. Sasikala

FATBR-2020-MB-31

Antibiotic Microbial Resistance

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Generally all the research work in recent days are done by using antibiotic microbial resistance test .The aim is to study about antibiotic activity of the various microorganisms.By this technique the microorganisms are checked for sensitivity, resistance or intermediate property of the particular antibiotic that we use is known.This technique is used to prescribe an antibiotic against any specific type of infection by the pathogenic microorganism.

Keywords: microbial resistance, microorganisms, seasitive, pathogenic.

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97. Mrs. C. Sasikala

FATBR-2020-MB-33

Bacterial – Fungal Interactions; Ecology, Mechanisms and Challenges

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Abstract

Fungi and bacteria are found living together in a wide variety of environment. Their interactions are significant drivers of many ecosystem functions and are important for the health of plants and animals .A large number of fungal and bacterial families engage in complex interaction that leads to critical behavioural shifts of the microorganisms ranging from mutualism to antagonism.Theimportance of bacterial-fungal interactions (BFI) in environmental science,medicine and biotechnology has lead to emergence of a dynamic and multidisciplinary research field that combines highly diverse approaches including geochemistry ,chemical and microbial ecology ,biophysics and ecological modelling.In this review, we discuss recent advances that underscore the role of BFI within complex microbial communities and in regard of the metaorganismconcept.We also discuss recent discoveries that clarify the molecular mechanism involved in bacterial- fungal relationships ,and the contributions of new technologies to decipher generic principles of BFI in terms of physical associations and molecular dialogues.Finally ,we discuss future directions for researching order to stimulate synergy within the BFI research area and to resolve outstanding questions.

Keywords: bacterial-fungal interactions, metaorganisms, microbiome, mechanism, microbial logistics

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98. Mrs. C. Sasikala

FATBR-2020-MB-34

The Prevalence and Control of *Bacillus* and Related Spore – Forming Bacteria in the Dairy Industry

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Abstract

Milk produced in udder cells is sterile but due to its high nutrient content, it can be a good growth substrate for contaminating bacteria. The quality of milk is monitored via somatic cell counts and total bacterial counts, with prescribed regulatory limits to ensure quality and safety. Bacterial contaminants can cause disease, or spoilage of milk and its secondary products. Aerobic spore-forming bacteria, such as those from the genera *Sporosarcina*, *Paenisporosarcina*, *Brevibacillus*, *Paenibacillus*, *Geobacillus* and *Bacillus*, are a particular concern in this regard as they are able to survive industrial pasteurization and form biofilms within pipes and stainless steel equipment. These single or multiple-species biofilms become a reservoir of spoilage microorganisms and a cycle of contamination can be initiated. Indeed, previous studies have highlighted that these microorganisms are highly prevalent in dead ends, corners, cracks, crevices, gaskets, valves and the joints of stainless steel equipment used in the dairy manufacturing plants. Hence, adequate monitoring and control measures are essential to prevent spoilage and ensure consumer safety. Common controlling approaches include specific cleaning-in place processes, chemical and biological biocides and other novel methods. In this review, we highlight the problems caused by these microorganisms, and discuss issues relating to their prevalence, monitoring thereof and control with respect to the dairy industry.

Keywords: Dairy, spoilage, aerobic, spore-forming bacteria, biofilms.

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99. Mrs. C. Sasikala

FATBR-2020-MB-36

Drug Design And Development

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Absrtact

The idea for a new development can come from a variety of sources which include the current necessities of the market, new emerging disease, academic and clinical research, commercial sector, etc...Once a target for discovery has been chosen, the pharmaceutical industries or the associated academic centres work on the early processes to identify the chemical molecules with suitable characteristics to make the targeted drugs. This poster will look into the key concepts of drug discovery, drug development and clinical stages of the drug discovery.

Keywords: Drug, Industries ,Disease, Clinical, academic

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100. Mrs. C. Sasikala

FATBR-2020-MB-37

Roll of Fungal Cell Wall In Pathogenesis And Antifungal Resistance

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Abstract

Study of the fungal cell wall is currently an area of active research. The relevance of the fungal cell wall for cell survival and pathogenicity has been well established. The view of the cell wall as a tough and impenetrable structure has been left behind. It is now conceived as a plastic shield that undergoes structural changes depending on the surrounding environmental conditions and morphological states. The fungal cell wall is also the source of most of the pathogen-associated molecular patterns that immune cells recognize, and thus facilitates establishment of a protective antifungal immunity. Paradoxically, fungi possess disguising mechanisms through their cell wall, to avoid immune recognition. This review gathers the current knowledge about the cell wall of *Candida albicans*, *Aspergillus fumigatus* and *Paracoccidioides brasiliensis*, stressing the importance of the fungal cell wall for pathogenesis, immune recognition and as a source of targets for antifungal drugs. This includes the process of observation of the fungal cell wall through electron microscope, analyzing the contents of the cell walls responsible for pathogenicity.

Keywords: Cellwall, Virulence, Glycoproteins , Polysaccharides , Melanin , Antifungal drugs, Innate immunesensing, *Candida albicans* ,*Paracoccidioides brasiliensis*, *Aspergillus fumigates*.

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101. Dr. A. M. Ramachandran

FATBR-2020-MB-17

Seaweed extract – A source for cosmetic and antibacterial formulation

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The cosmetic property of seaweed extracts and investigated the antibacterial activity of *Caulerpa scalpelliformis* which is a green macro alga. The seaweeds were dried and powdered for further use. It was stored in the air tight container to extract the pigments. The extraction was applied for the antibacterial activity by well diffusion method. Column chromatography was performed to separate the fraction of pigments. It is followed to GC-MS analysis to reveal the compounds. The fractions showed the antibacterial activity against *E.coli*, *Pseudomonas*, *Klebsiella*, *Salmonella* and *Staphylococcus sp.*, and the zone of inhibition were observed as 4, 6, 5, 3, and 4 (mm) respectively. Extracted pigments were attempted to stain microbes such as bacteria, fungi, RBC and also tried to color hair and nail as a cosmetic product to replaced synthetic chemicals which is being used currently.

Keywords: *Caulerpa scalpelliformis*, seaweed, pigment, microbes

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102. Dr. A. M. Ramachandran

FATBR-2020-MB-32

An In Vitro Study of *Ipomea Carnea* and Piper Betel Leaf Extract Mixture on Antidiabetic and Bacterial Endotoxin Neutralization

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Abstract

The main objective of this study was to analyse the rate of glucose transport across cell membrane in yeast cell system in the presence of the ethanolic extract of *Ipomea carnea* and Piper betel leaves and to neutralize the bacterial endotoxin which causes wounds to the diabetic patient. *Ipomea carnea* and Piper betel leaves has antidiabetic property and collected from kurumbapalayam. The ethanolic extract of leaves was prepared to analyse the phytochemical and antidiabetic activity done with the yeast cell system method. The lipopolysaccharide (LPS) from *E.coli* was separated using chloroform - methanol solvents. The LPS was treated with the leaf extract and monitored the neutralization of the *E.coli* toxin by SDS - PAGE method. The amount of glucose uptake was high in mixture of both leaf extract. The leaf extract of both *Ipomea carnea* and Piper betel mixture was neutralized the LPS of *E.coli*. From this study we can reduce the adverse effect of allopathic medications and also acquire a permanent recovery.

Keywords: *Ipomea carnea*, Diabetis, Bacterial endotoxin, Lipopolysaccharide

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103. Dr. J. Devakumar

FATBR-2020-MB-15

Phytochemical Analysis and Antimicrobial Activity of *Clome gynandra*

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Cleome gynandra root and aerial part is popular as an antiseptic and is commonly applied on wounds and lesions for its healing effects. The present investigation was undertaken to find out the phytochemical profile chloroform, ethanol, carbinol, hexane, aqueous extract from the leaves of *Cleome gynandra* and to determine the In-vitro antimicrobial activity of the *Cleome gynandra* against various microorganisms. Based on the qualitative analysis of *Cleome gynandra* it was found to contain Saponin, Steroids, phenols, flavinoids, alkaloids, Using these crude extracts an attempt was made to find out their antibacterial activity. The antibacterial activity studies showed prominent zone of inhibition against *Klebsiella* sp. and *Shigella* sp. *Cleome gynandra* might be used as a source of antibiotics for the treatment of various rheumatic diseases and other diseases caused by various bacteria.

Keywords: *Clome gynandra*, phytochemical analysis, antimicrobial activity, zone of inhibition.

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104. Dr. S. Karthiksundaram

FATBR-2020-MB-6

Production of Biodiesel Based on the Bioremediative Potential of Algae on Industrial

Effluent

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Abstract

The present study is aimed to check the bioremediative potential of *Oodegonium hatei* on industrial effluent with potential application on enhancement of lipid content for production of biodiesel. Isolation and identification of *Oodegonium hatei* from domestic pond, which is treated with textile effluent in a different concentrations (20%,40%,60%,80% and 100%) and the process optimization study for textile effluent degradation by *oodegonium hatei* using response surface methodology(RSM) with central composite design(CCD) was used to optimize the process wherein pH, inoculum concentration, dilution factor were used as independent variables and decolourization, chemical oxygen demand reduction as dependent variables (response). Algae biomass was utilized for biodiesel production and phytotoxicity analysis from the treated effluent by measuring the reduction rate. Maximum degradation was observed in case of run number 6 where % of degradation was found to be 90.74% in COD reduction and 95.16% in decolourization. Biodiesel were produced by utilizing the run number which provided maximum increase in algae biomass.

Key words: Bioremediation, biodiesel, optimization, response surface methodology, COD reduction, decolourization, CCD.

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105. Dr. S. Karthiksundaram

FATBR-2020-MB-8

Bioremediation of Plastic Wastes through Microbial Consortium

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To select microbes based on their ability to degrade plastic material and to develop a consortium. To enhance bioremediation of plastic through microbial degradation. Quantification of degraded plastic from media by measurement of turbidity. Optimization of growth media to enhance bacterial growth for degradation. The Soil sample was collected from garbage dumping area and microorganisms were isolated using serial dilution technique. The isolates were screened by well cutting method and in mineral salt medium for two to four weeks. Screened isolates were inoculated into optimized mineral salt media by changing pH, inoculum concentration and co-factor and incubated for 25-30 days. Efficacy of the isolates to degrade plastic were determined by measuring optical density of microbial cells mineral salt medium and optimized mineral salt medium. optical density values were provided that the isolate degraded the plastic with high efficacy within 30 days of incubation at room temperature. this could be effectively used for removal of plastic from dumping site and from plastic polluted soil with small input of microbial consortium and it also as eco-friendly.

keywords: Microbial consortium, bioremediation, plastic degradation, optimization, optical density.

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106. Dr. S. Karthiksundaram

FATBR-2020-MB-25

Combined Biological and Chemical Approach for the Efficient Treatment of Textile Effluent

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Water is an essential resource for the maintenance of life and human development, defining the significance of water treatment and effluent treatment. There are several approaches for the same, spotlight being on the biological approach due to flexibility offered in handling and environmental friendliness. The present paper focuses on the isolation, characterization and formation of consortium of microbes, from soil, for their effluent treatment ability. The microbes were employed in the treatment of effluent in the form of free cell suspensions and immobilized consortiums by entrapment in sodium alginate matrix. The physio-chemical properties of the untreated effluent and treated were compared.

Keywords: Effluent, Entrapment, Sludge, Treatment.

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107. Dr. R. Mahenthiran

FATBR-2020-MB-12

Generation, Purification and Neutralization Potential of Chicken Egg Yolk Antibodies Against Respiratory Tract Infection Causing *Pseudomonas aeruginosa*

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The objectives of the present investigation was to develop chicken egg yolk antibodies as an alternative and affordable approaches for diagnosis and treatment against cystic fibrosis in humans. Twenty four week old leghorn chicken was immunized with formalin killed *Pseudomonas aeruginosa* to produce egg yolk antibodies(IgY). The amount of egg yolk antibody increased gradually as the booster injection antigen concentration increases. The antibodies were partially purified from immunized chicken egg yolk by poly ethylene glycol(PEG) method and further purification was done by eluting the absorbed antibodies from the dialysis membrane. And the collected antibodies were purified as partially antibody by column chromatography. Growth inhibition assay showed the absence of growth when the specific egg yolk antibodies was added to the *Pseudomonas aeruginosa* culture. Additionally cytotoxicity test was performed. The stability of IgY antibody is to be performed in further studies. The result indicates that antibodies generated in chicken could be used for diagnosis and the therapeutic purpose in case of Cystic fibrosis in the form of IgY powder which was added in coffee for that patients.

Keywords: IgY antibody: *Pseudomonas aeruginosa*: Growth inhibiton assay: Cytotoxicity: IgY powder.

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108. Dr. R. Mahenthiran

FATBR-2020-MB-26

Examination of Bacteria and Fungi from Currency Notes and Coins and their Antibigram

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Paper currency, an exchangeable fomite, which are transferred from one individual to others are known to carry microorganisms. The handling of contaminated currency may lead to severe infections. The objective of this study was to identify the microorganisms present on the currency note and coins. A total of ten samples were collected in which eight were currency notes and two were the coins from the crowded areas in and around of Coimbatore city, Tamil Nadu. The currency notes and coins were taken to the laboratory and microorganisms were identified using standardized microbiological techniques. All the notes and coins collected during this study were contaminated by microbes such as *E. coli*, *Bacillus*, *Streptococcus*, *Staphylococcus*, *Aspergillus*, *Penicillium*. The isolated microbes were subjected to antimicrobial susceptibility test. We recommend that currency notes and coins must be handled with caution.

Keywords: Currency notes, Coins, Microorganisms, Antibigram.



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NAAC
3rd Cycle

Criterion III
Metric 3.4.4

