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3.3.2. Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during 2022-2023.

Sl. No	Name of the teacher	Title of the book/chapters published	Title of the paper	Title of the proceedings of the conference	Name of the conference	National / International	Year of publication	ISBN/ ISSN number of the proceeding	Affiliating Institute at the time of publication	Name of the publisher	Link to the book/proceedings	Page No
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2	Dr.G.Prasanthi	AI in Healthcare: Transforming medicine and Patient Care	-	-	-	International	2023	978-81-966517-1-8	Avanthi Institute of Pharmaceutical Sciences	Indo-continenta l Academic Publishers	https://icappublishers.com/?product=ai-in-healthcare-transforming-medicine-and-patient-care-by-dr-gottapu-prashantidr-gottapu-santosh-kumardr-m-n-v-s-s-kumar	7



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In view of health hazards posed by indiscriminate use of chemical fertilizers and pesticides, extremely difficult situations of land and water managements and adverse influences of climatic conditions such as heavy rains, air pollution, water pollution, soil pollution, heavy sun effect on the quality and quantity of agricultural products, we have planned to cultivation of spinach hydroponically. The objective of present study was to compare the phytochemical constituents of geponic and hydroponic cultivated spinach and screening for antioxidant activity based on their phenolic and flavonoid contents. Further, how much extent the hydroponic cultivation is influencing the presence of metals by carrying out metal analysis by Inductively Coupled Plasma/Optical Emission Spectrometry.



Madhu Chandaka

Eswar Kumar Kilari
M. B. Venkalapathi Reddy



I Chandaka Madhu working as Associate Professor in Avanathi Institute Of Pharmaceutical Sciences in the Department of Pharmacology. This book was completed dedicated to my parents Chandaka Ramu and Chandaka Veera Venkata Podamavathi, Late Byreddy Apparao garu (Grandfather occupation as a farmer) who motivated me to do this work.

CULTIVATION OF SPINACIA OLERACES BY USING HYDROPONICS TECHNIQUE

IMPORTANCE OF HYDROPONICS ON ELEMENTAL ANALYSIS



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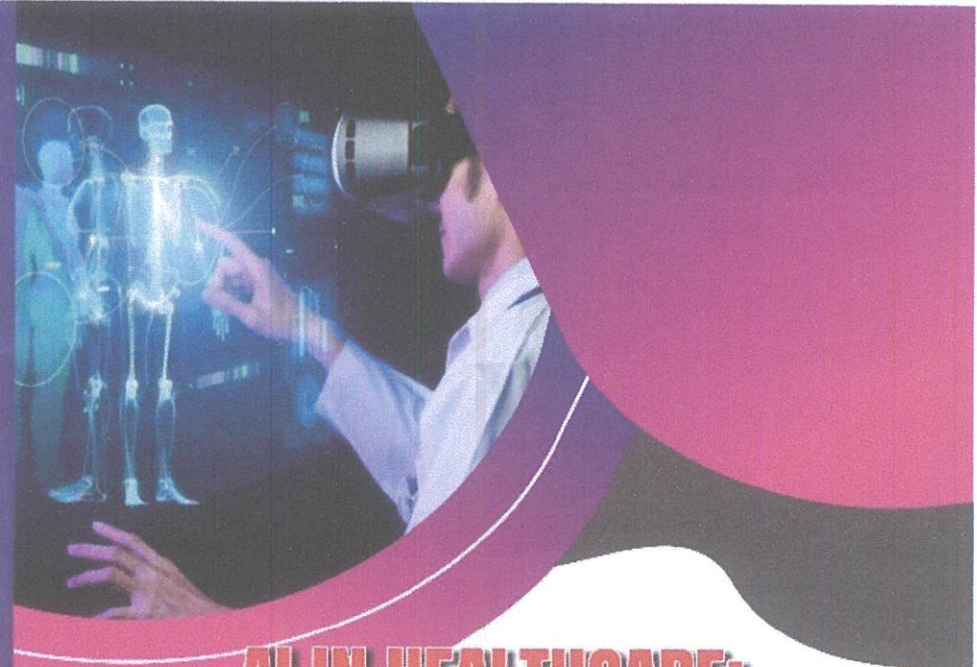


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AI IN HEALTHCARE: TRANSFORMING MEDICINE AND PATIENT CARE



AI IN HEALTHCARE: TRANSFORMING MEDICINE AND PATIENT CARE

Dr. Gottapu Prashanti

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AI ALGORITHMS AND ITS APPLICATIONS

AI ALGORITHMS AND ITS APPLICATIONS

Dr. M N V S S Kumar
Dr. Gottapu Santosh Kumar
Dr. Gottapu Prashanti



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PREFACE


In the ever-evolving landscape of technology, Artificial Intelligence (AI) stands as a beacon of innovation, a force that continually reshapes the way we perceive and interact with the world around us. This book, "AI Algorithms and Its Applications," is a comprehensive exploration of the multifaceted realm of AI, its underlying algorithms, and their wide-ranging applications.

As we stand at the threshold of the third decade of the 21st century, AI has transcended its origins as a niche field of computer science to become a transformative technology with profound implications for almost every facet of our lives. From improving healthcare diagnostics to revolutionizing transportation, from optimizing business operations to enhancing entertainment experiences, AI algorithms have found their way into virtually every domain.

This book endeavors to demystify AI for readers of all backgrounds, whether you are a seasoned AI practitioner, a curious student, or an industry professional seeking to harness the power of AI in your work. We delve into the core concepts of AI, from the fundamentals of machine learning to the intricacies of deep learning. Through a blend of theory, practical examples, and real-world case studies, we aim to provide a holistic understanding of AI algorithms and their diverse applications.

The journey we embark upon within these pages will take us through the intricacies of AI algorithms, exploring the building blocks of neural networks, natural language processing, computer vision, and reinforcement learning. We will unveil the inner workings of these algorithms, discussing their strengths, weaknesses, and best practices for implementation.




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In addition to dissecting AI algorithms, we will traverse the landscape of AI applications, unveiling how these powerful tools are being employed to address complex challenges and drive innovation. Whether it's the development of autonomous vehicles, the creation of virtual personal assistants, or the advancement of medical diagnostics, AI algorithms are playing a pivotal role in shaping the future.

Our aim is not only to equip you with the knowledge to understand and utilize AI algorithms but also to inspire you to explore the limitless possibilities that AI offers. We hope this book serves as a valuable resource in your journey to harness the transformative power of AI, whether in research, entrepreneurship, or everyday problem-solving.

As we dive into the realm of AI algorithms and their applications, we invite you to join us on this exciting voyage of discovery, innovation, and transformation.





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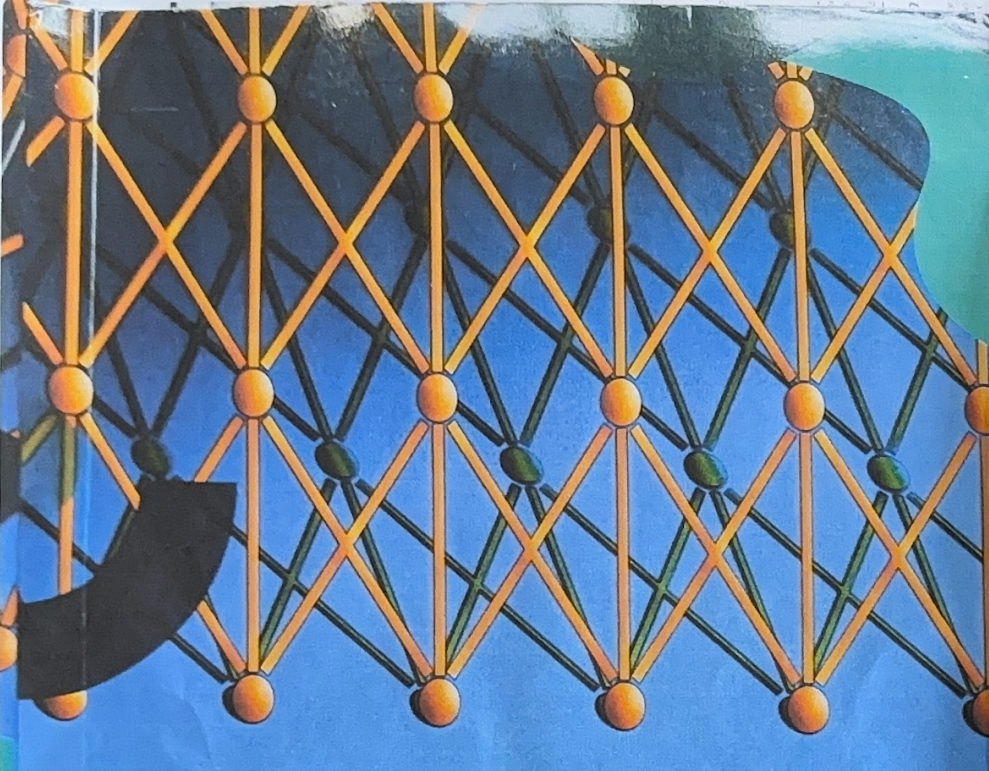



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DEEP NEURAL NETWORKS: ARCHITECTURES AND ALGORITHMS

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APPROACH PLACKETT -BURMAN
DESIGN (PBD)

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The present study aims at the optimization of keratinase produced by *Streptomyces malaysiensis* (MTMS 1a) which has been isolated from termite mound soil using statistical Approach-Plackett Burman Design (PBD). Selection of nutritional and other factors for enhancement of the keratinase production was carried out by employing the statistical design like Plackett Burman (PB). The analysis of the experimental results was performed based on the effect of each variable. In the present investigation, the effect of 7 different factors (Nutritional and other process variables) in two sets of each PB designs on production of keratinase was screened in order to improve the composition of medium by simultaneous comparison between the two levels (high and low) of selected factors by applying 8 experimental PB design for the isolate *Streptomyces malaysiensis* MTMS 1a under submerged conditions. Effects, p and t-values were calculated by subjecting the experimental data to statistical analysis (STATISTICA-7). In this method it was observed that the enzyme production was varied between 11.0-34.0 IU/mL for MTMS 1a in both PBD-1 and PBD-2 designs. The Pareto chart effects were plotted for identifying the factors that are important in enzyme production in this actinomycetes strain (MTMS 1a). The vertical line on the

chart showed statistical significance ($P=0.05$). It has been observed, lowest p-value and highest t-value ($t > p$ value) for pH, Soyabean meal, feather powder and yeast extract.

EOT - 1
BIOSENSORS

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Biosensors are nowadays ubiquitous in biomedical diagnosis as well as a wide range of other areas such as point-of-care monitoring of treatment and disease progression, environmental monitoring, food control, drug discovery, forensics and biomedical research. A wide range of techniques can be used for the development of biosensors. Their coupling with high-affinity biomolecules allows the sensitive and selective detection of a range of analytes. We give a general introduction to biosensors and biosensing technologies, including a brief historical overview, introducing key developments in the field and illustrating the breadth of biomolecular sensing strategies and the expansion of nanotechnological approaches that are now available.

EOT - 2
IMMUNIZATION

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Vaccine is biological preparation that provide acquired immunity against a particular infectious disease. The vaccine production has several stages from choosing the right microbe and collecting it, then making copies of the same. The lot produced

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developed to predict relationship within the data. Machine learning and deep learning also being used to study different parameters of machines & modulate them to desired output. Thus, the artificial intelligence software functions in designing drug product. They are also being used in clinical trials for generation and interpretation of data collected from patients' information. Future Scope of Artificial Intelligence in science & research, data analysis, health care & transport etc:

PPT - 1

DESIGN, DEVELOPMENT AND EVALUATION OF SELF MICRO EMULSIFIED DRUG DELIVERY SYSTEMS OF CLARITHROMYCIN

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The present work aimed at formulating a solid self-micro drug delivery system (solid-SMEDDS) for Clarithromycin with the objective of improving the aqueous solubility, dissolution and oral delivery of the drug. Liquid SMEDDS of the drug were castor oil as the oil phase, Tween 80 and Phenoxide as the combined surfactants after screening various vehicles. The systems were characterized for various physicochemical characteristics. Ternary phase diagrams were plotted to identify the area of the optimized liquid SMEDDS was transformed into a free-flowing powder using Neusilin US2 as the adsorbent. The physical state micro emulsifying powder was revealed by Differential Scanning Calorimetric and X-ray powder diffraction

studies which indicated the presence of the drug in the dissolved form in the lipid excipients. These findings were supported by scanning electron microscopy studies which did not show the evidence of precipitation of the drug on the surface of the carrier. Moreover, the droplet size of the micro emulsion formed from self-micro emulsifying powder remained same as that from the dissolution of the drug was enhanced significantly. SMEDDS. Similarly, the drug exhibited enhanced absorption from the SMEDDS formulation through rat intestinal segment compared to its suspension. Thus, it can be concluded that a lipid-based drug delivery system in the solid form can be successfully developed with the potential of enhancing the solubility, dissolution and oral formulated using Capmul HCO-4 prepared micro emulsification of the drug in solid self-liquid SMEDDS.

PPT - 2

SMART LIQUID FORMULATION USING LAMOTRIGINE

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Sustaining and controlling the rate of drug release is an important aspect in pharmaceutical technology. The basic objective in dosage form design is to optimize the delivery of medication to achieve the control of therapeutic effect in the in-vivo environment in which the drug release take place. So controlled release is perfectly zero order release, that is drug release over time irrespective of concentration. Controlled drug delivery in which it delivers the drug at predetermined rate for a specified period of time. Drug delivery system refer to the technology utilized to present the drug to the desired

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MARINOSOMES- A NOVEL CARRIER SYSTEM

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ABSTRACT:

Marinosomes are the vesicular drug delivery systems. Currently one of the increasing interests in lipid-based delivery systems are formation of vesicular system that is passive, non-invasive and is offered for immediate commercialization. Various such systems, which have gained an utmost importance, like vesicular systems including liposomes, niosomes, pharmacosomes, transferosomes and sphingosomes. Liposomes made of phospholipids are reliable to oxidation. Marinosomes are liposomes based on a natural marine lipid extract containing high ratio polyunsaturated fatty acids and can increase stability and increase circulation lifetime [t_{1/2}] of drug which tends to deposit in the tissues.

Key words: VESICULAR SYSTEMS, PHOSPHOLIPIDS, LIPOSOMES, MARINOSOMES

YUNIS VARON SYNDROME

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Abstract: Yunis Varon Syndrome was first discovered by Emilio Yunis and Humberto Varon in the year 1980. It affects both genders in equal number. Most of the infants are with Cleidocranial dysplasia, ectodermal anomalies, distal aplasia. By the characteristic features which include deformity of the pelvis, dislocation of hips, bone fracture, urinary tract abnormalities, central nervous system abnormalities by this they have reported the condition as Yunis Varon Syndrome

This is an autosomal recessive inherited multisystem disorder due to *FIG4* gene mutations, consanguineous marriages, lysosomal defects, which may lead to improper functioning of organs in the infants. Metabolic disorders in which abnormal growth due to some toxic substances in the body. Affected people with this syndrome may experience breathing problems, abnormalities in the skeletal system, congenital heart defects.

Genetic testing for mutation can be detected through diagnosis. In some conditions they may also be detected before birth of the baby that is prenatally by ultrasonography. Many of the infants did not survive beyond one year. Genetic counselling will be of benefit for affected individuals and their families.

Keywords: Cleidocranial dysplasia, Autosomal recessive inherited, Yunis- Varon Syndrome, Consanguineous, *F1G4* gene, Abnormal growth, Life span



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HIRSCHSPRUNG'S DISEASE

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ABSTRACT

Hirschsprung's (HIRSH-sproongz) disease is a condition that affects the large intestine (colon) and causes problems with passing stool. The condition is present at birth (congenital) as a result of missing nerve cells in the muscles of the baby's colon. Without these nerve cells stimulating gut muscles to help move contents through the colon, the contents can back up and cause blockages in the bowel. Signs and symptoms of Hirschsprung's disease vary with the severity of the condition: Chronic constipation, Swollen belly, Constipation or gas, which might make a newborn fussy. It was diagnosed by biopsy, Abdominal X-ray using a contrast dye, manometry test. Hirschsprung's disease is treated with surgery to bypass or remove the part of the colon that's lacking nerve cells. Life style modifications include: Serve high-fiber foods, Increase fluids, Encourage physical activity. Daily aerobic activity helps promote regular bowel movements.

Keywords: Hirsh-sproongz, congenital megacolon, enteric nervous system, genetics, agnglionosis.

ECOPHARMACOVIGILANCE – Need of the hours

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Abstract

Ecopharmacovigilance (EPV) is the process of monitoring and assessing the potential risks associated with pharmaceutical products on the environment and it involves identifying, assessing, and managing environmental risks associated with pharmaceutical production, use and disposal. The concept of ECOPHARMACOVIGILANCE (EPV) was introduced in India in 2009 by the Indian Council of Medical Research (ICMR). EPV monitors the environmental impact of drugs, including the presence of active ingredients and their metabolites in natural waters, sediments, and soils, as well as their effects on aquatic life, vegetation, and other organisms. Pharmaceuticals are widely used in medical treatments and have allowed us to maintain healthy lives. However, these drugs are also finding their way into the environment and can cause a variety of problems. Pharmaceuticals can have a negative impact on the environment i.e., ecological concerns. Pharmaceuticals entering the environment can be controlled in several ways, such as increasing awareness about the proper disposal of pharmaceuticals, using biodegradable and non-toxic alternatives to pharmaceuticals.

Keywords: Ecopharmacovigilance, Pharmaceutical products, Ecological concerns, Awareness.



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3D PRINTING IN MEDICAL AND PHARMACEUTICAL DEPARTMENT

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ABSTRACT:

3D printing also called as additive manufacturing, are capturing attention in the healthcare field because of their potential to improve treatment for certain medical conditions. 3D printing has enabled the production of customized prosthetic limbs, cranial implants or orthopedic implants such as hips and knees. At the same time its potential to change the manufacturing of medical products – particularly high-risk devices such as implants. The technology is an ideal solution for creating light weight parts, resulting in considerable fuel savings. When coupled with design optimization tools like generative design software, the potential for increasing the complexity of a part is almost limitless. Since the 3D printing process works by producing layer by layer, material is, for the most part, used only where needed. As a result, it produces less waste than traditional subtractive method. 3D printing plays an important role in medical and pharmaceutical sectors due to its demand. In addition to that increasing number of accidents caused by technology and high-tech machines show the high demand for 3D printed medical parts in various areas.

Keywords: 3D printing, Medical Products, High-tech Machines, Technology

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Keywords: Collaboration, patient centered care, patient focused care, hectic task, advantages and disadvantages.



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