



**Vijaya Institute of Pharmaceutical
Sciences for Women**



Enikepadu – 521 108, Vijayawada, NTR Dist., Andhra Pradesh, India

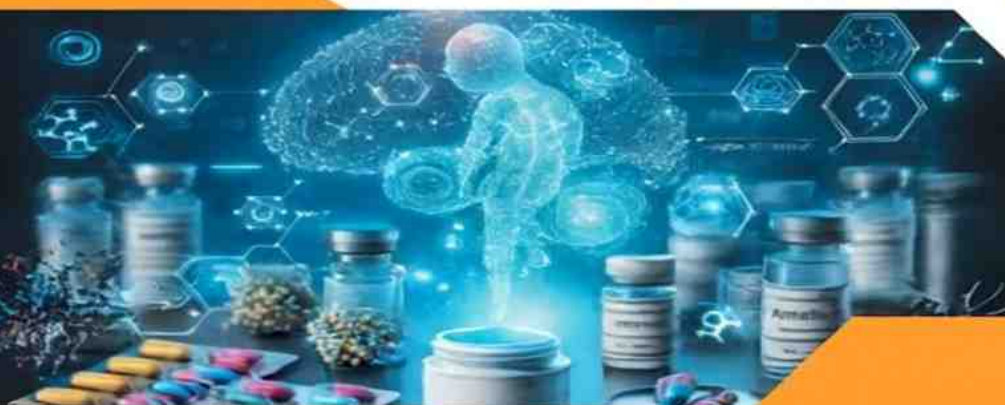
INDO-GULF INTERNATIONAL CONFERENCE ON
**WORLDWIDE SCENARIO OF
ARTIFICIAL INTELLIGENCE
AND PHARMACEUTICAL SCIENCES**



EDITORS

Dr. K. Padmalatha

Dr. S. Venkateswara Rao



Indo-Gulf International Conference on
**Worldwide Scenario of Artificial
Intelligence and Pharmaceutical
Sciences**

First Volume

Editors

Dr. K. Padmalatha
Dr. S. Venkateswara Rao



Title of the Book: Indo-Gulf International Conference on Worldwide Scenario of Artificial Intelligence and Pharmaceutical Sciences

First Volume - 2025

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Preface

We are delighted to present the proceedings of the *Indo-Gulf International Conference on "Worldwide Scenario of Artificial Intelligence and Pharmaceutical Sciences"*, held on 13th and 14th August 2024 at Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada, NTR District, Andhra Pradesh, India. This prestigious event was organized in academic collaboration with the Association of Pharmacy Professionals (APP) — Andhra

Pradesh State Branch and APP Gulf International Branch.

The Indo-Gulf International Conference on the Worldwide Scenario of Artificial Intelligence and Pharmaceutical Sciences represents a confluence of two of the most dynamic and transformative fields of the 21st century. This book serves as a compilation of the insightful discussions, groundbreaking research, and innovative applications presented during the conference.

Artificial Intelligence (AI) is rapidly evolving, reshaping industries, and redefining what is possible across various domains. In the pharmaceutical sciences, AI's impact is particularly profound, enhancing drug discovery, optimizing clinical trials, personalizing medicine, and improving patient care. The convergence of these fields promises to accelerate the development of new therapies and improve health outcomes on a global scale.

This conference brought together leading researchers, industry experts, and thought leaders from both AI and pharmaceutical sciences. Their contributions, documented in this book, offer a comprehensive overview of the current landscape, emerging trends, and future directions in these fields. Through a series of keynote speeches, technical sessions and poster presentations, the conference fostered a rich exchange of ideas and paved the way for collaborative efforts that will drive future innovations.

The chapters within this book are organized to reflect the multifaceted nature of AI and pharmaceutical sciences. From theoretical advancements in machine learning algorithms to practical applications in drug development and patient care, each section delves into specific areas where AI is making a significant impact. The discussions also highlight the ethical, regulatory, and societal implications of integrating AI into pharmaceutical practices, ensuring a holistic view of the challenges and opportunities ahead.

We extend our gratitude to all the contributors and organizers who made this conference and its subsequent publication possible. Their dedication and expertise have culminated in a valuable resource for researchers, practitioners, and students alike.

It is our hope that this book will inspire further research, foster new collaborations, and ultimately contribute to the advancement of both AI and pharmaceutical sciences. The future of healthcare is being shaped by the innovations and insights shared at this conference, and we are excited to see how these developments will continue to evolve and benefit society at large.

Dr. K. Padmalatha

Conference Chair

Indo-Gulf International Conference on Worldwide Scenario of Artificial Intelligence and Pharmaceutical Sciences

Vijaya Institute of Pharmaceutical Sciences for Women,

Enikepadu, Vijayawada, Andhra Pradesh (AP), India - 521108

Acknowledgement

We are profoundly grateful to all those who made the *Indo-Gulf International Conference on "Worldwide Scenario of Artificial Intelligence and Pharmaceutical Sciences"*, held on 13th – 14th August 2024 at Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada, NTR District, Andhra Pradesh (India), a grand success.

First and foremost, we express our heartfelt thanks to our Chief Patron, Sri B.S. Appa Rao Garu, and Patron, Sri B.S. Sri Krishna Garu, for their unwavering support, guidance, and encouragement in organizing this international event.

We are indebted to Prof. Rajiv Dahiya, President of the Association of Pharmacy Professionals (APP), for his invaluable support, and to the APP Andhra Pradesh State Branch and APP Gulf International Branch for their collaborative spirit and commitment to academic excellence. We express our deep gratitude to our Chief Guest, Dr. Chennupati Suresh, for gracing the occasion with his presence and inspiring words.

Our sincere appreciation goes to our dynamic Convener and Principal, Dr. K. Padmalatha, whose leadership and vision have been instrumental in the seamless execution of this conference. We also gratefully acknowledge the contributions of Co-Convener, Dr. Sadhu Venkateswara Rao, whose tireless efforts and dedication greatly enriched the academic quality and organization of the event.

We are privileged to have hosted an eminent panel of speakers who shared their insights and expertise during the technical sessions. On the first day, we were honored by the presence of:

- Prof. Gaurav Gupta, Adjunct Research Professor, Centre of Medical and Bio Allied Health Science Research, Ajman University, UAE;
- Prof. Amiyakanta Mishra, Principal, College of Pharmaceutical Sciences, Puri, Odisha;
- Prof. Kuntaldas, Research Director, Dept. of Pharmacognosy & Phytochemistry, Mallige College of Pharmacy, Bengaluru.

On the second day, our sincere thanks to:

- Prof. Murali Krishna, HoD, Mechatronics, MSME Technology Centre, Visakhapatnam, Andhra Pradesh;
- Prof. Sadhu Venkateswara Rao, HoD, Dept. of Pharmaceutics, Vijaya Institute of Pharmaceutical Sciences for Women, Vijayawada, Andhra Pradesh.

We also extend our sincere appreciation to the organizing faculty members of VIPW whose dedicated efforts behind the scenes ensured the smooth coordination of the event.

A special note of thanks goes to the student participants from the host institution and other esteemed colleges, whose enthusiasm, curiosity, and engagement added immense value to this academic gathering.

Finally, we acknowledge all contributors and well-wishers who supported the successful compilation of this Conference Proceedings Book, which we hope will serve as a valuable resource and reference for future research and development in the domain of Artificial Intelligence and Pharmaceutical Sciences.

Organizing Committee

Indo-Gulf International Conference 2024

Vijaya Institute of Pharmaceutical Sciences for Women,

Enikepadu, Vijayawada, Andhra Pradesh (AP), India - 521108



VIJAYA INSTITUTE OF PHARMACEUTICAL SCIENCES FOR WOMEN

Vijayawada – 521 108, Krishna (Dist.), A.P., India.

Invitation

You are cordially invited to attend the

Indo-Gulf International Conference

"Worldwide Scenario of Artificial Intelligence and Pharmaceutical Sciences"

13th - 14th August 2024

in Association with



ASSOCIATION OF PHARMACY PROFESSIONALS (APP)

Andhra Pradesh State Branch and Collaboration with
APP Gulf International Branch

Chief Guest

Sri B. S. Appa Rao B.E.,
Chairman, SRK Foundation

Guest of Honor

Dr. Suresh V. Chennupati
HoD, Nalanda College of Pharmacy, Nalgonda, Telangana

Sri B. S. Sri Krishna
Secretary, SRK Foundation



Dr. K. Padmalatha
Convenor & Principal, VIPW

Programme Details

13th August 2024

- 10.00AM – 10.45AM : Inauguration
Welcome Speech : **Dr. K. Padmalatha**
Convenor & Principal, VIPW, Vijayawada, Andhra Pradesh
Opening Remarks : **Dr. Suresh V. Chennupati**
Guest of Honor & HOD,
Nalanda College of Pharmacy, Nalgonda, Telangana

Session I (Invited Lecture)

- 10.45AM – 11.30AM : **Prof. GAURAV GUPTA**
Adjunct Research Professor,
Centre of Medical & Bio-allied Health Sciences Research
Ajman University, United Arab Emirates
11.30AM – 12.15AM : **Prof. AMIYAKANTA MISHRA**
Principal, College of Pharmaceutical Sciences, Puri,
Odisha
Chairpersons : **Prof. M. VANI** (VIPW, Vijayawada, A.P.)
Prof. S. SUNDAR (VIPW, Vijayawada, A.P.)
12.45Noon – 1.15PM : Lunch Break

Session II (Invited Lecture)

- 01.30PM – 02.30PM : **Prof. KUNTAL DAS**
Research Director, Dept. of Pharmacognosy &
Phytochemistry, Mallige College of Pharmacy, Bangalore
Chairpersons : **Prof. RONALD DARWIN C.** (Vels University, Chennai,
Tamil Nadu)
Prof. MEHUL N. PATEL (Dharamsinh Desai University,
Nadiad, Gujarat)

Session III

- 02.30PM – 04.30PM : Scientific Presentation by Participants

14th August 2024

Session IV

- 10.00AM – 11.00AM : **Prof. Murali Krishna**
HoD, Mechatronics, MSME Technology Centre,
Visakhapatnam, A.P.
11.30AM – 12.30Noon : **Prof. S. VENKATESWARA RAO**
Dept. of Pharmaceutical Sciences, VIPW, Vijayawada

Session V

- 12.30Noon – 12.45Noon : Tea Break
12.45Noon – 1.45PM : Valedictory Function, Prizes & Awards Distribution ,
Vote of Thanks

Worldwide Scenario of AI in Pharmacy



The 21st century has witnessed transformative shifts across scientific disciplines, and among the most revolutionary is the integration of Artificial Intelligence (AI) into Pharmaceutical Sciences. As the world embraces digitalization and data driven decision-making, AI has emerged as a powerful force in redefining drug discovery, development, delivery, and patient care. Globally, pharmaceutical companies and research institutions are leveraging AI to enhance efficiency, reduce costs, and accelerate development timelines, with countries like the United States, United Kingdom, Germany, China, and Japan leading investments in predictive modeling, virtual screening, biomarker discovery, and clinical trial optimization. AI is now being integrated into every phase of the pharmaceutical pipeline from target identification to personalized medicine through machine learning algorithms that analyze complex datasets to predict pharmacokinetics, toxicity, and efficacy, transforming years of manual work into rapid, intelligent outputs. It plays a pivotal role in drug discovery by predicting molecular interactions using neural networks, enabling high-throughput screening, and supporting in silico trials through digital twins, with global biotech firms collaborating with AI platforms such as DeepMind, BenevolentAI, and Insilico Medicine to identify and repurpose therapeutics efficiently. In manufacturing, AI enhances quality control, process optimization, and supply chain management by supporting smart manufacturing and Industry 4.0 practices that ensure precision, safety, and compliance. In the domain of personalized medicine, AI combines with pharmacogenomics and big data to tailor treatments to individuals based on genetic profiles and health data, supported by AI-powered chatbots, decision systems, and mobile health tools that improve patient adherence and outcomes. As AI evolves, educational institutions must adapt curricula to include AI-focused content while addressing ethical issues such as data privacy and algorithmic fairness to ensure responsible adoption. India, with its robust pharma sector and growing digital infrastructure, is poised to become a global leader in AI-driven pharmaceutical innovation.

The Indo-Gulf International Conference, organized by Vijaya Institute of Pharmaceutical Sciences for Women in collaboration with the Association of Pharmacy Professionals (APP), exemplifies efforts to promote international academic exchange and collaborative research, offering a platform for thought leaders from India and the Gulf to explore interdisciplinary advancements and collectively shape the future of pharmacy in the AI era.

Sri. B.S. APPARAO GARU

Chairman

SRK Foundation

Vijaya Institute of Pharmaceutical Sciences for Women,

Enikepadu, Vijayawada, Andhra Pradesh (AP), India - 521108

Message from College Secretary



It is a moment of immense pride and great joy to extend my heartfelt wishes to all the dignitaries, delegates, speakers, faculty members, students, and participants of the Indo-Gulf International Conference on “Worldwide Scenario of Artificial Intelligence and Pharmaceutical Sciences”, hosted by Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada, on the 13th and 14th of August 2024, in collaboration with the Association of Pharmacy Professionals (APP) – Andhra Pradesh State Branch and APP Gulf International Branch.

This conference marks a significant academic milestone for our institution, as it brings together brilliant minds from India and the Gulf region to discuss one of the most transformative topics of our time – the integration of Artificial Intelligence (AI) in the pharmaceutical sciences. In an era defined by rapid digital advancements, such a conference is both timely and necessary to foster innovation, global collaboration, and forward-thinking research.

I commend Dr. K. Padmalatha, Principal and Convener, and Dr. Sadhu Venkateswara Rao, Co-Convener, for their dedication and vision in organizing this prestigious event. Their efforts, along with the unwavering support of the faculty and organizing team, have laid the foundation for what promises to be an intellectually stimulating and globally relevant academic gathering.

I also take this opportunity to extend my sincere appreciation to Prof. Rajiv Dahiya, President of APP, and all the esteemed speakers from across the nation and abroad. Your expertise and insights are invaluable in guiding the next generation of pharmacy professionals in harnessing the potential of AI for better health outcomes.

To our student participants your enthusiasm and commitment to learning are truly commendable. I am confident that this conference will open new doors of understanding and inspire you to pursue excellence in research, innovation, and practice.

May this international conference serve as a strong platform for collaboration, knowledge sharing, and the promotion of AI-driven pharmaceutical advancements that will benefit global healthcare.

With warm regards and best wishes for a successful event,

Sri. B.S. SRI KRISHNA GARU

Secretary

SRK Foundation

Vijaya Institute of Pharmaceutical Sciences for Women,

Enikepadu, Vijayawada, Andhra Pradesh (AP), India - 521108

Message from APP President



It brings me great pride and satisfaction to extend my heartfelt greetings to all the distinguished delegates, keynote speakers, academicians, researchers, students, and organizers participating in the Indo-Gulf International Conference on “Worldwide Scenario of Artificial Intelligence and Pharmaceutical Sciences”, hosted by Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada, in academic collaboration with the Association of Pharmacy Professionals (APP) Andhra Pradesh State Branch and APP Gulf International Branch, on 13th–14th August 2024.

In this dynamic era of digital transformation, Artificial Intelligence (AI) has emerged as a catalyst in revolutionizing pharmaceutical research, development, and patient care. The thoughtful theme of this conference is both timely and futuristic, offering a unique platform to explore global advancements, exchange innovative ideas, and build bridges across borders and disciplines.

This event reflects the true spirit of academic collaboration and interdisciplinary synergy. I congratulate the visionary leadership of Dr. K. Padmalatha, Principal and Convener of the conference, along with Co-Convener Dr. Sadhu Venkateswara Rao, and extend my sincere appreciation to Chief Patron Sri B.S. Appa Rao Garu and Patron Sri B.S. Sri Krishna Garu for their unwavering support in making this event a reality.

We are honored to witness the participation of renowned experts from both India and the Gulf region scholars whose insights into AI-driven pharmaceutical technologies will undoubtedly enlighten and inspire all attendees. The presence of a vibrant student community and dedicated faculty further adds to the academic vibrancy and success of this gathering.

On behalf of the entire APP family, I extend my best wishes for the grand success of this international conference. May it serve as a fertile ground for meaningful dialogue, transformative research, and long-lasting academic partnerships in the realm of pharmaceutical sciences and beyond.

Prof. Rajiv Dahiya

President,

Association of Pharmacy Professionals (APP)

Welcome Note



It is with immense pride and heartfelt warmth that I welcome you all to the Indo-Gulf International Conference on “Worldwide Scenario of Artificial Intelligence and Pharmaceutical Sciences”, organized by Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada, in association with the Association of Pharmacy Professionals (APP) – Andhra Pradesh State Branch and APP Gulf International Branch. Held on the 13th and 14th of August 2024, this conference stands as a significant milestone in our academic journey, marking our commitment to global collaboration and innovation in the ever-evolving field of pharmaceutical sciences.

We are deeply honored by the presence and unwavering support of our Chief Patron, Sri B.S. Appa Rao Garu, and Patron, Sri B.S. Sri Krishna Garu, whose vision continues to guide our institution towards excellence. I would also like to extend my sincere gratitude to Prof. Rajiv Dahiya, President of APP, for his continued encouragement and support in facilitating this international academic exchange. We are honored to welcome our Chief Guest, Dr. Chennupati Suresh, and the esteemed panel of speakers who have graciously agreed to share their vast expertise with us. Your presence has truly elevated the academic caliber of this conference.

This conference brings together distinguished speakers and thought leaders from across the nation and the Gulf region. We are privileged to host eminent experts such as Prof. Gaurav Gupta from Ajman University, UAE; Prof. Amiyakanta Mishra from College of Pharmaceutical Sciences, Puri; Prof. Kuntaldas from Mallige College of Pharmacy, Bengaluru; Prof. Murali Krishna from MSME Technology Centre, Visakhapatnam; and our very own Dr. Sadhu Venkateswara Rao, who will be sharing invaluable insights into how Artificial Intelligence is reshaping the pharmaceutical landscape globally.

AI is no longer a futuristic concept; it is a transformative force in today’s pharmaceutical industry, offering solutions in drug discovery, personalized medicine, manufacturing, clinical trials, and patient care. As we stand at the intersection of healthcare and technological innovation, it is our responsibility as educators, researchers, and practitioners to explore these advances and prepare the next generation of pharmacists for a digital era.

I would also like to take this opportunity to appreciate the active participation of our beloved students and dedicated faculty members from VIPW, along with delegates from various academic institutions. Your enthusiasm and intellectual curiosity give purpose and energy to this endeavor.

I welcome you all once again and encourage you to engage, question, collaborate, and innovate throughout the course of this two-day conference. May this event be a catalyst for new ideas, enduring partnerships, and a deeper commitment to excellence in pharmaceutical sciences.

Thank you and best wishes for a fruitful and inspiring conference.

Dr. K. Padmalatha

Convener

Indo-Gulf International Conference 2024

Vijaya Institute of Pharmaceutical Sciences for Women,

Enikepadu, Vijayawada, Andhra Pradesh (AP), India - 521108

Conference Overview



It gives me immense pleasure to present the overview of the Indo-Gulf International Conference on "Worldwide Scenario of Artificial Intelligence and Pharmaceutical Sciences", held on 13th and 14th August 2024 at Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada. This landmark event, organized in collaboration with the Association of Pharmacy Professionals (APP) Andhra Pradesh State Branch and APP Gulf International Branch, served as a vibrant academic platform for interdisciplinary dialogue and international collaboration.

The conference was inaugurated under the esteemed guidance of our Chief Patron, Sri B.S. Appa Rao Garu, and Patron, Sri B.S. Sri Krishna Garu, whose continued support and vision have been the cornerstone of academic excellence at our institution. The conference was led by our dynamic Principal and Convener, Dr. K. Padmalatha, whose leadership has been instrumental in shaping this international gathering.

The event commenced with an inspiring address by our Chief Guest, Dr. Chennupati Suresh, whose presence added immense value to the inauguration ceremony. The first day featured enriching keynote sessions delivered by eminent speakers including Prof. Gaurav Gupta, Adjunct Research Professor at Ajman University, UAE; Prof. Amiyakanta Mishra, Principal of the College of Pharmaceutical Sciences, Puri, Odisha; and Prof. Kuntaldas, Research Director, Department of Pharmacognosy & Phytochemistry, Mallige College of Pharmacy, Bengaluru. Each of these sessions offered deep insights into the evolving role of Artificial Intelligence in drug research, development, and therapeutic applications.

On the second day, the technical sessions continued with enlightening talks by Prof. Murali Krishna, Head of Mechatronics, MSME Technology Centre, Visakhapatnam, and myself, Prof. Sadhu Venkateswara Rao, exploring the integration of AI in manufacturing processes and pharmaceuticals. These sessions highlighted how AI is revolutionizing the pharmaceutical industry by enabling precision, automation, and data-driven innovations across every stage of the drug lifecycle.

This two-day academic event witnessed the active participation of enthusiastic students, scholars, and faculty members from the host and neighboring institutions. Their presence and engagement significantly enriched the discussions and outcomes of the conference.

In essence, this Indo-Gulf collaboration successfully served its purpose of bridging geographical boundaries and disciplinary silos to foster a deeper understanding of the global advancements in AI and pharmaceutical sciences. It is our hope that the knowledge and networks established through this conference will continue to inspire innovative research, educational excellence, and global partnerships in the years to come.

Dr. Sadhu Venkateswara Rao

Co-Convener

Indo-Gulf International Conference 2024

Vijaya Institute of Pharmaceutical Sciences for Women,

Enikepadu, Vijayawada, Andhra Pradesh (AP), India - 521108

Abstracts & Biodatas of Speakers

AI: A New Frontier in Diabetes Management & Prognosis

Dr. Gaurav Gupta, *Adjunct Research Professor, Centre of Medical & Bioallied health Sciences Research Ajman University, Ajman, UAE*

Abstract: The integration of Artificial Intelligence (AI) into healthcare has opened transformative avenues in the management and prognosis of chronic diseases, particularly diabetes mellitus. This presentation explores how AI technologies ranging from machine learning algorithms to predictive analytics and digital health platforms are revolutionizing diabetes care. AI enables early detection of complications, personalized treatment plans, real-time glucose monitoring, and data driven clinical decision support. Additionally, AI driven models enhance prognosis by predicting disease progression and identifying at-risk individuals through pattern recognition in vast datasets. This session highlights key advancements, current applications, and future prospects of AI in diabetes care, emphasizing its potential to empower clinicians, optimize therapeutic outcomes, and improve patient quality of life.

Key Words: Artificial Intelligence (AI), Diabetes Mellitus, Machine Learning, Predictive Analytics, Digital Health, Personalized Treatment and Glucose Monitoring.

Biodata: **Prof. Dr. Gaurav Gupta** serves as an Adjunct Research Professor at Centre of Medical and Bioallied Health Sciences Research (CMBHSR), Ajman University, Ajman, United Arab Emirates (UAE). To present, he remained actively engaged as a Professor of Pharmacology at Suresh Gyan Vihar University, Jaipur, Rajasthan. He also holds adjunct professorships at Graphic Era University, Dehradun. Dr. Gupta earned his Doctorate from Pacific University, Udaipur, Rajasthan and M.Pharm from Sree Siddaganga College of Pharmacy, Tumkur, Karnataka. Dr. Gupta also earned MBA from Suresh Gyan Vihar University, Jaipur. He is currently pursuing a Doctorate in Science (D.Sc) from Suresh Gyan Vihar University, Rajasthan and has 13 years of teaching/research experience. Dr. Gupta has extensive international research experience, having worked in laboratories in Malaysia and Australia. He has also made significant contributions to the field with over 600 research papers and reviews published in SCI-indexed journals. His cumulative impact factor approximates 5000, with an H-index of 51 and an i10-index of 320. For the past four years, he has been consistently recognized among the world's top 2% of scientists published by Stanford University, USA. An author of numerous peer-reviewed publications, book chapters, and poster presentations, Dr. Gupta is also a presenter at National and International conferences. His research primarily focuses on molecular and biochemical pharmacology, including areas such as phytochemistry, respiratory diseases, psychopharmacology, and cancer biology

Industry- Academic Interaction: Necessary Tool for Pharmaceutical Skills

Prof. Amiyakanta Mishra, *Professor & Principal, College of Pharmaceutical Sciences, Puri, Odisha.*

Abstract: Industry-academic interaction plays a pivotal role in bridging the gap between theoretical knowledge and practical application, making it an essential tool for enhancing pharmaceutical skills. This presentation emphasizes the importance of collaborative efforts between academic institutions and the pharmaceutical industry to align education with real-world demands. Such interactions facilitate skill development, technology transfer, internship opportunities, and research collaborations, enabling students and faculty to stay updated with current industry practices. By integrating industrial insights into academic curricula, institutions can produce industry-ready graduates equipped with the technical competencies, regulatory understanding, and innovative thinking required in modern pharmaceutical sectors. The session explores successful models of industry-academia collaboration, benefits for stakeholders, and strategic approaches to strengthen these partnerships for future pharmaceutical advancements.

Keywords: Industry-Academic Collaboration, Pharmaceutical Education, Skill Development, Technology Transfer, Internship Opportunities and Research Partnerships.

Biodata: Prof. Dr. Amiyakanta Mishra is working as Professor and Principal at College of Pharmaceutical Sciences; Puri, under BijuPatnaik University of Technology (BPUT), Odisha. Prof. A. K. Mishra did his B.Pharm from Utkal University, Odisha in 1994 and M.Pharm in Industrial Pharmacy from Annamali University, Tamilnadu in 1999. He was awarded Ph.D. from Jadavpur University, Kolkata in 2009. His main areas of interest in research include drug delivery systems. He has published 26 articles in various international and national journals as well as represented more than 15 papers in various international and national conferences. He also received sanction of grant of Rs. 2,90,000/- (Rupees Two lakh ninety thousand only) to conduct Conference under the scheme Grant for Organizing Conference (GOC), by AICTE as a Coordinator. He reviewed many articles in various reputed International and National journals. He has published various text books in pharmaceutical sciences. He has published 5 book chapters in various publications in India and Overseas. He has guided 3 Ph. D candidates successfully, and currently guiding 4 Ph.D candidates. He is the life member of Association of Pharmaceutical Teachers of India (APTI), Indian Society for Technical Education (ISTE), and Institution of Chemists (FIC). He has conducted various conferences, and programmes in the college. He filed 3 Indian Patents.

Discovery of Plant Secondary Metabolites from *In Vitro* Cultivated Red Labeled Medicinal Plants Collected from Western Ghats Region

Prof. Kuntaldas, *Research Director, Dept. of Pharmacognosy & Phytochemistry, Mallige College of Pharmacy, Bengaluru.*

Abstract: The discovery of plant secondary metabolites from red-labeled medicinal plants holds significant promise for novel drug development and therapeutic innovation. This presentation focuses on the identification and analysis of bioactive secondary metabolites obtained from *in vitro* cultivated red-labeled medicinal plants native to the Western Ghats, a global biodiversity hotspot. *In vitro* cultivation techniques offer a sustainable approach to conserve endangered species while ensuring a consistent and controlled supply of phytochemicals. The study highlights the extraction, isolation, and characterization of key secondary metabolites such as alkaloids, flavonoids, terpenoids, and phenolics, and evaluates their potential pharmacological activities. The session also emphasizes the ecological significance of conserving red-labeled species and the role of biotechnological tools in

harnessing their medicinal value. Insights gained from this research contribute to both biodiversity conservation and the advancement of natural product-based drug discovery.

Keywords: Plant Secondary Metabolites, *In Vitro* Cultivation, Biodiversity Conservation, Natural Products, Phytochemical Analysis, Alkaloids, Flavonoids and Terpenoids.

Biodata: **Prof. Dr. Kuntal Das**, currently serving as the Research Director and Professor at Mallige College of Pharmacy, Bangalore, India, possesses over 22 years of experience in teaching and research. A specialist in pharmacognosy, his expertise spans medicinal plant cultivation and standardization, phytochemical estimation through instrumental methods, plant tissue culture, nano-herbal formulations, and pharmacological evaluation and clinical investigation of plant-based products. He earned his B.Pharm from Gautham College of Pharmacy (2000), followed by M.Pharm and Ph.D. in Pharmacognosy from Al Ameen College of Pharmacy under RGUHS in 2004 and 2012 respectively, beginning his academic career in 2004. Dr. Das has received numerous accolades, including the C.V. Raman Award (2024), Bharat Shiksha Gaurav Puraskar (2023), and several national and international best researcher and educator awards. With 16 years of research experience, he has guided numerous students (20 PG, 24 UG, and 3 PhDs including ongoing work), engaged in global research collaborations, and presented over 35 papers at prestigious forums worldwide. He has delivered more than 30 invited lectures, chaired over 10 scientific sessions, and has authored more than 139 publications (IF 116.8), 9 patents, 4 design patents, 15 textbooks, and 9 book chapters. He serves on editorial and review boards of over 19 journals and holds key academic roles such as PCI inspector, NAAC coordinator, and academic evaluator across several universities.

Harnessing Artificial Intelligence for Drug Discovery

Prof. Murali Krishna, *HoD, Mechatronics, MSME Technology Centre, Visakhapatnam, Andhra Pradesh.*

Abstract: The integration of Artificial Intelligence (AI) into drug discovery is revolutionizing the pharmaceutical research landscape by significantly accelerating the identification and development of new therapeutics. This presentation explores how AI technologies ranging from machine learning and deep learning to natural language processing and generative algorithms are streamlining various stages of the drug discovery pipeline, including target identification, lead compound generation, drug repurposing, and preclinical predictions. AI-driven platforms are capable of analyzing vast and complex biological datasets to uncover hidden patterns, predict molecular interactions, and optimize candidate selection with greater speed and accuracy than traditional methods. By automating routine processes and enabling data-driven decision-making, AI is reducing research costs and timelines while increasing the probability of clinical success. The session also discusses key innovations, real-world applications, and the challenges and ethical considerations associated with AI in drug discovery, emphasizing its potential to reshape the future of pharmaceutical innovation.

Keywords: Artificial Intelligence, Drug Discovery, Target Identification, Computational Drug Design, Drug Repurposing, Pharmaceutical Innovation and Preclinical Research.

Biodata: **Prof. Dr. K. Murali Krishna** is an accomplished academic leader in Electronics and Communication Engineering with 26 years of experience across teaching, research, and

industry. He holds a B.Tech in ECE from V.R. Siddhartha Engineering College (N.U), and completed his M.Tech and Ph.D. from Andhra University under the guidance of Prof. K. Raja Rajeswari. He is a Fellow of IETE, Member of IEEE, and Life Member of ISTE. He has served in various academic roles including HoD, Chairman BoS, NAAC Coordinator, and NSS Program Officer. He has held advisory roles in advanced domains like 3D Printing, Industrial IoT, and Wi-Fi Technologies with CEMS, BOT CLUB, PHYTECH EMBEDDED, and Candela Technologies. He has delivered 50+ expert talks on Industry 4.0 and mentored over 4000 students through training programs and internships. A resource person for IEEE conferences and DST programs, he has guided two Ph.D. scholars, completed an AICTE-funded project, and published 67+ papers in reputed journals and conferences. His research interests include wireless communication, signal processing, and Industry 4.0. He is also a certified expert in AI/ML, IoT, Data Science, and Deep Learning, and received the Best Reviewer Award from ELSEVIER in 2017. Currently, he is the HoD of Mechatronics at MSME Technology Centre, Visakhapatnam.

The Future of Pharmacy: AI Innovations and Their Impact on Healthcare

Prof. Sadhu Venkateswara Rao, *HoD, Dept. of Pharmaceutics, Vijaya Institute of Pharmaceutical Sciences for Women, Vijayawada, Andhra Pradesh.*

Abstract: The integration of Artificial Intelligence (AI) into pharmacy is revolutionizing healthcare by enhancing drug discovery, personalized medicine, and clinical decision-making. This presentation, "The Future of Pharmacy: AI Innovations and Their Impact on Healthcare," explores how AI technologies such as machine learning, deep learning, and natural language processing are transforming pharmaceutical research and patient care. Key innovations include AI-driven platforms that accelerate drug development, predict drug interactions, and optimize formulation design. In personalized medicine, AI enables tailored therapies based on genetic data, improving efficacy and safety. AI also enhances pharmacy automation, from inventory control to robotic dispensing systems, streamlining operations and reducing human error. Clinical decision support systems (CDSS) powered by AI assist pharmacists in evidence-based interventions, while telepharmacy and virtual consultations expand access to care, especially in underserved areas. The presentation further addresses data privacy, ethical concerns, and regulatory frameworks, emphasizing the importance of responsible AI adoption. Through real-world case studies and current trends, the session underscores AI's potential to improve patient outcomes, empower pharmacists, and shape a more intelligent, efficient, and patient-centric healthcare system.

Key Words: Artificial Intelligence (AI), Drug development, Personalized medicine, Formulation design, Design of Clinical trials and Telepharmacy.

Biodata: Dr. Sadhu Venkateswara Rao earned his B. Pharmacy from Nirmala College of Pharmacy, Kadapa, followed by an M. Pharmacy from Annamalai University, Chidambaram, Tamil Nadu, and a doctoral degree from Vel's University, Chennai, with his research focusing on the development of Flutamide-loaded polymeric nanocarriers for prostate cancer chemotherapy. He has published 20 patents and 52 research and review articles in peer-reviewed journals, guided 98 M. Pharm and 53 B. Pharm projects, and authored two book chapters and five textbooks, including *An Introduction to Pharmaceutical Sciences*, *Pharmaceutical Technology*, *Pharmaceutical Technology and Products*, *Comparative Study on NDA Procedure in US, EU & India*, and *Machine Learning Approaches for Target Identification and Validation in Drug Discovery*. As a review board member for prestigious

national and international journals such as International Journal of Pharmacy and Pharmaceutical Sciences, Hindawi Peer-Reviewed Open Access Journals, Journal of Materials Science & Engineering, International Knowledge Press Journal Plant Cell Biotechnology and Molecular Biology, and International Journal of Basics and Applied Sciences, he has significantly contributed to pharmaceutical research. His presentation titled Responsible Use of Antibiotics Saves Life was awarded first place by the IPA at IPC 2015. Recognized for his research excellence, he received the IJRULA Best Researcher Award 2018 for his work on the acid neutralization capacity and cost-effectiveness of antacid suspensions in Vijayawada, along with multiple accolades such as the Best Teacher Award (2019), Research Excellence Award (2020), Best Achiever Award (2021), and Best Researcher Award (2024). In 2024, he also won first prize at the APTI national conference at VJ College of Pharmacy, Rajahmundry, and was honored with the Excellence in Leadership and Professional Development award by the Council for Skills and Competencies during the Teacher's Day Awards, recognizing his outstanding contributions to education. With 17 years of teaching experience, he is currently serving as Professor & HoD in the Department of Pharmaceutics at Vijaya Institute of Pharmaceutical Sciences for Women, Enikepadu, Vijayawada.

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