

International Conference
On
Innovations and Sustainability
In Engineering, Management,
Pharmacy and Education

ICISEMPE-2025

Organized by



KCNIT

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Editors

Mr. Arun Kumar Nigam

Prof. (Dr.) Pradeep Bhatnagar

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Preface

Conference World and AR Research Publication is a fast-growing group of academicians in Engineering, Science and Management. AR Research Publication is also known for its prompt responses and zero-error work. Conference world has organized various conferences at renowned places, namely Delhi University, New Delhi; Jawaharlal Nehru University, New Delhi; PHD Chamber of Commerce and Industry, New Delhi; YMCA, New Delhi; Indian International Centre, New Delhi; Sri Venkateswara College of Engineering and Technology, Andhra Pradesh; Verdant Engineering College,, Kota; and many more places across the country.

We are very pleased to introduce the proceedings of the International Conference on Innovations and Sustainability in Engineering, Management, Pharmacy, and Education (ICISEMPE 2025). The papers presented at the conference addressed the recent innovations & developments in the field of Engineering and Technology. The level of interest in the subject matter was consistent with previous events and more than 45 suitable papers were submitted for presentation at the conference.

The Papers were well represented at the conference to arouse a high level of international interest. The presented papers maintained the high promise suggested by the written abstracts and the program was chaired professionally and efficiently by the session chairman, also highly gratifying, showing the high level of interest in the subject. This proceeding provides a permanent record of what was presented. They indicate the state of development of all aspects of this important topic at the time of writing and will be invaluable to all authors in the field for that reason. Finally, we record our thanks to our fellow members of the Technical Organizing Committee for encouraging participation from those areas. We are also indebted to those who served as chairs, without their support, the conference could not have been the success that it was. We also acknowledge the authors themselves, without whose expert input there would have been no conference. Their efforts made a great contribution to its success.

About KCNIT

A trusted name in the education of Bundelkhand region, the KCNIT, established in 2002 by the Banda Education Centre, is located in Banda, the headquarters of Chitrakoot Dham Mandal, Uttar Pradesh. The institute is approved by the All India Council for Technical Education (AICTE) and affiliated with Dr. A.P.J. Abdul Kalam Technical University (AKTU), Lucknow. The well-equipped campus features modern facilities including Wi-Fi connectivity, a digital library, fully functional laboratories, hostels, mess, workshops, and well equipped sports grounds. KCNIT offers a wide spectrum of academic programs such as B.Tech in various engineering disciplines, Polytechnic (Diploma Engineering) courses, MBA and recognized as one of the leading institutes of the Bundelkhand region.

KCNIT is situated on Naraini Road, Banda, Uttar Pradesh. The institute actively promotes holistic student development through its dedicated placement cell, and regular workshops, seminars, and training programmes. Under its umbrella, the KCNIT College of Education, established in 2014, is NAAC-accredited and affiliated with Bundelkhand University, Jhansi (U.P.). It aims to nurture future educators with knowledge, integrity, and creativity, fostering excellence in education and community development. The Vidyawati Nigam Memorial College of Pharmacy, a sister institution established in 2022 under the KCNIT Group of Institutions, is approved by the Pharmacy Council of India (PCI) and affiliated with Dr. A.P.J. Abdul Kalam Technical University, Lucknow. The college is committed to excellence in pharmaceutical education (B. Pharm and D, Pharm), research, and healthcare innovation for the betterment of society.

About the Conference

The objective of this international conference is to provide a dynamic platform for fostering innovation, strengthening academia-industry partnerships, and shaping the future of technology, business, healthcare, and education in the rapidly evolving world. The central focus is to foster collaboration between academia and industry by facilitating knowledge exchange, research advancements, and innovative solutions. The conference aiming to, enhance Industry-Academia Collaboration, promote Multidisciplinary Innovations, encourage Research and Development, address Global Challenges, support Skill Development and Workforce Readiness, facilitate Networking and Knowledge Exchange, drive Policy and Decision-Making. This international conference will serve as a catalyst for academia-industry synergy, driving technological, economic, and social advancements while fostering research, entrepreneurship, and skill development in a rapidly evolving global landscape. Furthermore, now a days, there exists a significant gap between academic research and industry requirements. Considering this as view point, the ICISEMPE 2025 will provide a platform for knowledge transfer and practical implementation of research findings.

About IARDO

International Association of Research and Developed Organization (IARDO) is a leading organization in the field of academic research activities under the banner of India Educational Charitable Trust (Regd).

International Association of Research and Developed Organization (IARDO) is an apex body that promotes and encourages commendable achievements from all over the country. The organization under conference world regularly organizes national and International level conferences with the help of its members to promote socially responsible education practices and sustainable development in economic as well social front in India.

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Message

Mr. Arun Kumar Nigam

Chairman, KCNIT Group of Institutions, Banda(UP)

It is with immense pride and great anticipation that I welcome the **International Conference on Innovations and Sustainability in Engineering, Management, Pharmacy and Education (ICISEMPE 2025)**, organized by **Kali Charan Nigam Institute of Technology (KCNIT), Banda**, in collaboration with **Conference World and IARDO**.

This conference brings a remarkable opportunity for academicians, researchers, professionals, and industry experts from diverse fields to come together, exchange knowledge, and inspire innovation. I am confident that this multidisciplinary platform will foster fresh perspectives, promote collaborative research, and contribute greatly toward sustainable progress across various sectors.

I extend my heartfelt appreciation to the organizing committee, faculty members, and collaborators for their dedication in bringing this global academic initiative to life. My best wishes for the grand success of **ICISEMPE 2025**.

Patron

Mr. Arun Kumar Nigam

Chairman, KCNIT Group of Institutions, Banda(UP)

Message

Prof. (Dr.) Pradeep Bhatnagar

Professor & Director, KCNIT, Banda (UP)

I am delighted to welcome all participants to the **International Conference on Innovations and Sustainability in Engineering, Management, Pharmacy, and Education (ICISEMPE 2025)**. This conference marks a significant step toward strengthening academic excellence, research culture and sustainable innovation.

It is a privilege to witness experts, scholars, and students from varied disciplines converging on a single platform to share their research insights, ideas, and experiences. I am certain this event will serve as a catalyst for intellectual growth, meaningful dialogue, and new collaborative opportunities across academia and industry.

I sincerely thank our organizing partners, contributors, and participants for their invaluable support in making this event a reality. I extend my warmest wishes for a highly productive and successful **ICISEMPE 2025**.

Convener

Prof. (Dr.) Pradeep Bhatnagar

Professor & Director, KCNIT, Banda (UP)

Message

Ms. Reshu Gupta,
CEO Conference World

It is with great enthusiasm that I welcome the upcoming **International Conference on Innovations and Sustainability in Engineering, Management, Pharmacy and Education (ICISEMPE 2025)**, being hosted by **KCNIT GROUP OF INSTITUTIONS, Banda(UP)**, in collaboration with **Conference World and IARDO**.

This prestigious global event is set to provide a dynamic platform for scholars, academicians, researchers, industry experts, and professionals to come together and explore emerging ideas, trends, and challenges across multiple domains. The multidisciplinary nature of this conference will undoubtedly inspire innovative thinking, foster collaborative research, and pave the way for sustainable developments across diverse fields.

I am confident that ICISEMPE 2025 will encourage meaningful dialogue, knowledge sharing, and transformative engagement among participants. Such academic initiatives are essential in nurturing thought leadership, strengthening research culture, and shaping effective solutions to the complex global challenges of the 21st century.

Looking ahead, I firmly believe that this conference will continue to grow as a landmark annual event—one that ignites creativity, curiosity, and collaboration across engineering, management, pharmacy, education and beyond.

My sincere appreciation goes to the organizing teams for their dedication and vision in conceptualizing this significant event. I extend my best wishes for the **International Conference on Innovations and Sustainability in Engineering, Management, Pharmacy and Education (ICISEMPE 2025)** and wish the conference great success.

Ms. Reshu Gupta,
CEO Conference World

Proceeding of the conference has been published with ISBN:

International Conference on Innovations and Sustainability in Engineering, Management, Pharmacy, and Education (ICISEMPE 2025) organized at KCNIT GROUP OF INSTITUTIONS, BANDA (UP) (ICISEMPE 2025). Total 57 papers were received for the conference and 45 papers were shortlisted by the committee.

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